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استعمال اللغة الأم في تدريس اللغة الانجليزية بليبيا

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ملخص:

تحلل هده الورقة استخدام (لغة الأم) في تدريس اللغة الثانية (لغة الانجليزية) ، وأيضا كيفية استخدام الطلبة الليبيين لغتهم الأم في حين أنهم يتعلمون لغة ثانية (اللغة الإنجليزية). وفضلا عن ذلك اتفق غالبية المعلمين عن استخدام لغتهم الأم داخل الفصل لغرض معين يساعد في تعليم اللغة الثانية في حين اختلف الآخرين و يعتقدون أن دروس اللغة الإنجليزية يجب أن تكون تحت جو انجليزي ملائم.

كما تناقش هده الورقة مزايا وعيوب استخدام اللغة الأولى داخل الفصول الدراسية ,هناك بعض التقنيات تعرض كيفية التعامل مع الطلاب الذين يستخدمون لغة الأم,لاستخدام الطريقة الملائمة لتحفيز الطلبة على استخدام اللغة الانكليزية بشكل مناسب في جو انجليزي.لدا يجب خلق جو انجليزي لتذكير الطلبة باستخدام اللغة الانجليزية داخل الفصل بدل من لغة الأم.

The Use of L1 in Libyan English classrooms.

Sara Salem Issenni Zawali

Abstract

This paper will analyse the usage of the first language (L1) in second language (L2) classes, also how and why Libyan students use their mother tongue while they are learning second language (English). Moreover, the majority of teachers agreed the usage of (L1) inside the class for specific purpose and believe that will help in teaching the second language. Whereas, the others disagreed and think that English classes should have an English atmosphere.

Also this paper discusses the advantages and disadvantages of using the first language (L1) inside the classrooms.Some techniques will be presented showing students using their mother tongue, using direct method to motivate students to use English appropriately. So that we create an English atmosphere and keep reminding students to use L2.

Introduction

L1 refers to the first language of the learners and the teacher, whereas L2 refers to their second language. The mother tongue is often seen as a negative feature of the L2 classroom, and decisions about whether to use the L1 are amongst the most common dilemmas that language teachers in

monolingual classrooms face. However, several benefits of using the L1 have also been proposed: it reduces learner anxiety and creates a more relaxing learning environment.It is means of bringing the learner's cultural background knowledge into the class, facilitates checking understanding and giving instructions.It facilitates the task of explaining the meaning of abstract words and of introducing the main differences in grammar and pronunciation between L1 and L2.

There are advantages and disadvantages of using students' first language inside the classroom and there are advantages and disadvantages associated with the avoidance of its use. English is the second language in Libya; it is common for Libyan teachers to use their L1 as a tool for clarifying and conveying meaning as a communication resource in English language organisations and in the classroom atmosphere. In recent years, the L2 teaching has been organised by the use of only English by both teachers and students during lessons. The use of L1 has mainly been considered as having a negative impact although the L2 is seen as the main tool for learning a second language, by different theorists, in order to guide teachers to reduce or dispose of the use of the L1. Teachers of all stages or levels should concentrate more on the reasons for using L1 before considering any negative or positive points. However, L2 use needs to be maximised as much as possible, through encouraging the value of its use inside the classroom and by using it alone for classroom interaction to help learners to improve their self-confidence and unique personality.

The main purpose of this paper is to analyse that the usage of the first language in a second language classroom in terms of whether it is advantageous or disadvantageous in some learning contexts. Moreover, the paper analyses the negative and positive usage of L1 for both teacher and learners, and presents some techniques to deal with students who persist in using their mother tongue.

Teacher use of L1:

The majority of non-native teachers often tend to use their mother tongue in low levels classes with low levels learners such as beginners and starters to give clear instructions and explain meanings of new or complicated words, and complex ideas also for explaining complex grammar points. Many teachers notice that the use of student's first language provides more time to practice the second language, because understanding is attained much more rapidly. Moreover, teachers' experience affects the degree to which they resort to the first language. For that reason, more qualified teachers practise the target language perfectly which affect the students too. According to (Crawford, 2004, P. 18) the more they are experienced, the less they use L1.

Cameron (2001, P. 55) provides detailed guidelines for teachers for the advantageous use of the mother tongue with low level learners. For instance, teachers can resort to the first language for translating new language, providing feedback and error correction, chatting with learners and checking

learners' comprehension. Cameron also points out that L1 should be used after attempting other ways, such as pictures, gestures, drawing, realia and mime. The advice being to the teachers is "Use as much of the target language as possible, and ensure that use of first language supports the children's language learning" (Cameron, 2001, P.199). The essential use of L1 inside the classroom by most of the teachers is a key for clarification purposes, after an effort has been made to communicate concepts and ideas in the second language and learners still appear to be confused. Furthermore, the idea is that L1 aids a "supportive and facilitating role in the classroom" (Tang, 2002, P.40), teacher should put into consideration that using the L1 is not the essential language of communication inside the classroom environment. L1 use also permits students to become more aware of the similarities and differences between cultures and linguistic constructions, and hence will improve the accuracy of translations.

However, Dickson (1996,P .88) suggests that increasing low level students' motivation would be an appropriate alternative to L1. For that reason, one way of increasing students' motivation is by using stimulating resources that may help to decrease teachers' use of L1.L1 in the classroom can be divided into advantages and disadvantages. The teacher should always consider the reasons for his use of the L1 before weighing any positives or negatives. If he wants to practice his foreign language skills, speaking the L1 of the students, then this ultimately fails to serve the class. Students should always come first.For example a conversation class may often be better served if students try to use English as much as possible. When they cannot

understand a word or phrase, or cannot follow some aspect of spoken conversation, then he has chance to employ speaking strategies.Technical or cultural explanations in the L1 of the students may be more useful in these lessons. Students practice in English with the information provided by the teacher. It should be noted that the teacher can sometimes use the L1 to help students provide sentences beyond their ability. Students say a sentence in their native tongue, which the teacher translate for future use. This proves especially beneficial with incidental language such as a singular phrase or sentence.

There are also disadvantages for the L1 in the class, the majority of teachers' fear that tacit approval of L1 will result in its heavy use in the classroom. Students will rely on it, especially if allowed to occasionally insert a word or phrase in their first language. This can be true, such as when students fail to develop speaking strategies. They thus shouldn't resort to their native language immediately, but should strive to ask questions, provide explanations, or give information in English. In most classes, it doesn't take much effort for the teacher to encourage students to do so. However, it should be noted that some students may want to speak and speak and speak, resorting to their native tongue when any difficulties arise. They don't view communication as a balance between fluency and accuracy. They use the teacher's policy of occasional L1 use a little too liberally.

Learners L1 use:

There are various reasons for using L1 inside the classroom. Firstly, it is naturally to use the students' mother tongue with other students who use the same L1 in the class. Secondly, it is more communicatively effective to use the L1. Finally using the second language can be a cause of embarrassment especially with shy students and learners who have less confident to be very proficient in the L2.Students often use their mother tongue while doing pair or group work activities such as chats, cards, matching, making questions, and puzzles to create solutions to linguistic tasks and estimate their written language. In addition, while students working in pairs and using L1 alternatingly with L2, students may cognitively process at an advanced level with regard to linguistic tasks. According to Swain and Lapkin (2000, P. 260) learners' purposes for using their mother tongue during the lesson were grouped into three main categories: moving tasks along, as in ordering events, focusing attention on grammar and vocabulary search and finally interpersonal interaction as in explaining disagreement. Besides these results, it was noticed that lower succeeding students tended to use their first language more excessively than high achieving students.

Moreover, the uses of L1 allow learners to become more conscious of the large similarities and alterations between these two issues cultures and linguistic structures, and as a consequence this may develop the accuracy of translations. (Cook, 2001, P.412) states that finding cognates and similarities between languages constructs up "interlinked L1 and L2 knowledge in the students' minds". However, it is important to point out that most learners

who already use L1 during the lesson for communicative purposes must also be expected to use the target language to practice its use. On the other hand, learners use of L1 during speaking, in order to precise frustrations regarding their lack of understanding the new language for asking each other clarifying questions and meaning of words in L2. Moreover, to find out the new vocabulary in L2 which correspond to already identified vocabulary in L1, and to build shared meaning while estimating written tasks through open discussion to process complex concepts.

According to (Wells, 1999, P. 251) there are some especially valuable exceptions in using L1 in written tasks as it helps to clarify and build meaning and it also allows students to frequently evaluate and clarify communication with concern to the choice of content and register appropriate to the task. This reconsideration is often prepared orally in freer conversation with different interactions in pairs, groups or teacher. Collaborative dialogue allows learners to build linguistic understanding concerning a number of language tasks. As Cook (2001, P. 418) stated in "L1 provides scaffolding for the students to help each other."

Many students attitude toward learning and producing L2 critically influences their learning experience in addition to the quantity and purpose of students' use of the mother tongue during the lesson. Also, learners who are required to learn English language do not identify with to be relevant with the overuse of the first language to keep within the range of comfort. According to (Tang, 2002, P.38) the majority of L1 students discover that

the exclusion of their first language to be degrading to that tongue. On the other hand, if learners feel that their L1 is a valuable part of learning a new language, so students will be less likely to feel insulted about learning a second language.

Some techniques to deal with students who keep using their mother tongue.

L1 students all over the world, and whatsoever their situations, join English classes with at least one other language. According to students' level of English, beginner levels continuously translate with is occurring into their original language whether the teacher agrees or not. Furthermore, learning English as a new language should have an English environment to give students the ability to practice the four skills. Such as listening to native speakers and practicing the use of English as much as possible to avoid using L1 and lead the students to master the second language. Harmer, (2007,P. 127) states that teachers have the ability to use their mother tongue if they have difficult instructions to simplify, and wherever students use of L1 may have many beneficial results that support and assist their individual needs.

1.1 **Deal with students in order to speak about this problem.**

Teachers should concentrate more on the aim of each stage during presenting a new language and become more aware of students' disability to use the target language (English) inside the classroom. For that reason, prepare students for hard discussion to give them chance to exposure the

language. Teacher role in this stage is to encourage learners as much as possible to produce the target language and motivate them to engage and use English rather than Arabic to achieve the goal of learning the language accurately and fluently. This can be done by preparing different activitiesconcentrate on using the target language directly like games often incorporate logical reasoning, communication, kinesthetics, visual stimulation and spatial relations. Games include analysis and interpretation of new and old material which makes learning concrete, also allow the students to work as a team and to work collaboratively towards a common goal.

> Using learners' first language during learning the second language reduces students' opportunities for rehearsal and giving feedback. Harmer, (2007, P. 127).

1.2 Encourage students to use English suitably.

In classes where learners all share the same first language or national language, teachers need to use a range of options to encourage learners to use L2 as much as possible, such as choose manageable tasks that are within the learners' proficiency, prepare learners for tasks by pre-teaching the language items and skills needed, repeat tasks to make them easier and inform learners of the learning goals of each task so that they can see how using L2 will help them achieve a clear short term learning goal also, by discussing with learners the value of using the L2 in class.

Lots of interaction patterns lead the whole class to use the target language as much as possible to build a good relationship between each other. According

to Scrivener (2005, P. 84) "The learner is learning to interact with a competent user of the language". Moreover, students should have the capability to communicate with each other in pairs and groups to share their communicative ideas in order to develop their speaking and communication skills. Teacher should create extra activities which focus on practice the target language and refreshing the class atmosphere to encourage learners to produce the language and communicate freely. Moreover, in order to enhance learners to pick up the second language (English) appropriately, teachers should praise English language users to be encouraged and build their self-confident to use L2 more than L1.

English and the L1 are in competition with each other and the use of English increases at the expense of the L1. Teachers need to show respect for the learners' L1 and need to avoid doing things that make the L1 seem inferior to English. Thus, a balanced approach is needed which sees a role for the L1 but also recognises the importance of maximising L2 use in the classroom.

1-3Create an English atmosphere.

In Libyan classrooms ,where Arabic is their first language, there is a tendency for different activities and tasks which teacher should do in the L2 such as preparation for writing, conversation activities, discussion of intensive reading to avoid using L1 oral discussion. Building an English environment in the classroom is a first step that every teacher should take in to consideration in order to encourage learners to use the language perfectly. According to Harmer "the more they work in English, the better

their English will get, and the better their English is, the less need we have of the L1" (2007,p. 135).

Where students have slight opportunity to use the L2 outside the classroom, it is very significant that the second language use is maximised in the classroom. One recognizable way to do this is encourage the classroom management to use the L2, English. Classroom management includes different things like telling the class what to do in specific way for instance (open your book and go to page 4), controlling students' behaviour for example (be quiet, raise your voice) and explaining activities (work in pairs or groups). To reach these goals, teachers should require a careful thought, so that the structures and words used are also generally useful for the language of classroom management. If the teacher planned the use of English in classroom management in a consistent way, then this can be a very effective chance for learning English through meaning concentrated input. Harmer (2007,P. 128) pointed out that teachers should speak English for most of the time as well as using listening exercises to help learners concentrate on English sounds and what the language sounds like.

Keep reminding studentsto use L2 and check their understanding of the target language. According to Harmer (2007, P. 128) during a speaking activity teachers should monitor and go round the class, stimulating, persuading, and even pleading with the students to use English and offering assistance if required. Using encouragement and persuasion for low ability

students especially in speaking activities when students have chance to produce the target language , but if students keep using their L1 it is better to advise them that freer activity is considered to provide students the confidence to produce the language .

Conclusion

In conclusion, this paper has shown that Libyan teachers previously ignored the communicative way of teaching that help learners to use the language fluently and express themselves very clearly, wherein L1 was frequently used to present the differences between both L1 and L2 and to facilitate the main grammatical structures. This had a negative impact on learners' education, with the result that students struggled to reach a high level of English. Moreover, some tutors agreed about using L1 inside the class and for clarifying purposes and should not be the primary mode of communication either by the students or teacher(s) in the L2 classroombelieving that L1 is very important in teaching other language,Whereas others disagreed. The majority of teachers should show respect for the learners' use of L1 and at the same time teachers need to avoid using it in English classes. The teacher's role is to help and facilitate the new language in order to improve proficiency in English.

In my view, L2 classes should be taught in English only, in other way teaching English trough English,where the whole class can take part in real communication in order to speak English fluently. Teachers should be

trained to deliver a communicative way of teaching and offer the class materials to practice the four language skills. Moreover, teachers recommended classroom activities in order to support different interactions and suit different learning needs and styles to enhance learners' ideas to produce the language in a communicative way.

References

- Cameron, L., 2001. Teaching languages to young learners. Cambridge: Cambridge University Press.
- Cook, V., 2001. Using the first language in the classroom. Canadian Modern Language Review, 57(3), p. 402-423.
- Crawford, J., 2004. Language choices in the foreign language classroom: target language or the learners' first language. Regional Language Centre Journal, 35(1), p. 5-20.
- Dickson, P., 1996. Using the target language: a view from the classroom. Slough: The National Foundation for Educational Research.
- Edwards, A. and Talbot, R., 1999. The hard-pressed researcher: a research handbook.
- Harmer, J (2007).How to teach English. England: Pearson Education.
- Scrivener, J (2005). Learning Teaching. 2nd Edition. Oxford.

- Swain, M. and Lapkin, S., 2000. Task-based second language learning: the uses of the first language. Language Teaching Research, 4 (3), p.251-274.
- Tang, J. (2002). Using L1 in the English classroom. English Teaching Forum, 40(1), 36-43. Retrieved Aug 10, 2007, from **http://exchanges.state.gov/forum/vols/vol40/no1/p36.htm#top**
- Wells, G. (1999). Using L1 to master L2: A response to Anton and DiCamilla's "Sociocognitive functions of L1 collaborative interaction in the L2 classroom." The Modern Language Journal, 83(2), 248-254.

تدريس المفردات في اللغة الانجليزية بواسطة نشاطات وألعاب مختلفة.

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كلية الآداب /غريان

ملخص:

يعد تدريس المفردات من أهم أساسيات تعلم اللغة الانجليزية ويعد تعلم هده المفردات عمليه معقده نوعا ما. الأمر الذي يتطلب فهم وكيفيه استخدامها ونطقها وكتابتها كتابه صحيحة. وهده الدراسة تسهم في مساعده المدرسين في تقديم الطرق الحديته , للمساعدة في تدريس الكلمات الجديدة. عن طريق نشاطات وألعاب مختلفة لخلق روح التفاعل بين الطلاب لترسخ في دهن الطالب وتكسبه نوعا من المتعة والاثاره داخل الفصل الدراسي.

Teaching vocabulary through games

Introduction

One of difficulties in teaching and learning English as a foreign language is vocabulary. Learning vocabulary is a complex process which requires adequate mastery of form, meaning and usage. For example, learners should be able to spell and pronounce the words correctly. In many classes, students do not have the opportunity to take intensive vocabulary-building classes. Vocabulary learning is usually incorporated into other classes, especially reading. In these classes, words may be defined only in passing or students may engage in more traditional individual exercises such as filling in blanks or matching words and definitions. Nowadays, communicative approach is a method aims to promote communicative abilities of language learners. It is the most popular methodology in the west. Candlin (2001:155) states that " it has become an umbrella term+ which covers a wide rang of classroom practice."

It is a useful approach that helps students be more active in real life situation through communicative activities. It promotes teaching process as one of useful activity for learners. Besides, one of the most effective way in teaching

vocabulary because games are a great component to include in class room, it allows students to explore different learning styles and learn the proposed topics at the same time.

Many people think using English language games in the ESL/TEFL classroom is a trivial, time-filler, but teachers experienced in using the proper games that help student to comprehend English language. According to Loyd Rieber (2004:24),"Games provide wonderful atmosphere in the student's language class".

Dee Dickenson (2000:88) states that " Using games can help student tap into the different learning styles (or intelligences) such as visual/spatial, bodily, musical naturalistic and intrapersonal". He added that when students have opportunities to learn using their preferred style, they often become more successful at learning any subject. Sally Flood (1999:20), in her article" All play and more work", explains how games are beneficial, if the right types of games are used. She highlights four components of successful games: competitive elements to engaging content, reward and objective relevant content. However, if the game is missing one of the first three elements, the students might not have the needed motivation to participate. If you leave out the last element, the game does not serve the purpose of helping you promote the lesson at hand.

Aim of this paper:

The purpose of this paper is to through light into the importance of

teaching vocabulary by games and different activity.

The objective of the study:

1-To realize the importance of vocabulary.

2-To help students find language classes, especially vocabulary lessons more interesting.

3-To change the atmosphere of the class.

4-The study helps student to learn new English vocabulary through games.

Contents of this paper:

In order to attain the target purpose, this paper includes advantages behind using games, different groups of the word, the rules of playing games, aims of using games in teaching vocabulary, kinds of games and suggested games.

Kinds of words:

According to Michacel Graves(2000:35) There are four groups for the word. They are:

1. Functional / Structural words:

It includes many words used in language, such as conjunctions, prepositions, and articles.

2. Substitute words:

They can stand instead of other words such as: personal pronouns I, me, , ….), indefinite substitutes (everybody, any one, someone), negative substitutes (none, nothing); denoting numbers or

quantity (all, each, several).

3. Distributive words:

These words can be used with statements and negative distribution. For example, he went to the hotel and she did too. In this ' too' is a statement distribution. Tom does not like tea; neither do I. in this neither is a negative distribution.

4. Content words:

These are concrete words, abstract words, action and quantity words.

Advantages behind using games:

Language learning is a hard task which can sometimes be frustrating. Constant effort is required to understand, produce, and manipulate the target language. Just like songs and rhymes, games also provide wonderful atmosphere in the student's language class. It is widely documented that English language games improve teaching process and more effective tool. the first reason is helping students to participate and make them pay more attention because they enjoy themselves.

Next reason is playing a game has a purpose and outcome. In order to play, students have to say things. Therefore, they have reason to communicate and this encourages them to learn more. In addition to this, games stimulate and motivate students to a new level. They know that if they do not pay attention, they will not be able to play the game well and they will let their team down so they make more effort to join in and learn as much as possible.

(Verona,2003:24). The proverb " repetition is the mother of skill" becomes very meaningful during the games in class as students get to use the language all the time with a lot of repetition. Although repetition is boring in some cases, during games it is fun for students. Also, because of the fun involved in the game a massive amount of vocabulary and grammar can be revised in a short time because it is very difficult for learners to remember vocabulary if they never use it. Furthermore, the physical movement involved in some of the games also helps keep learners stimulated and alert. Most importantly, the philosophy of encouragement incorporated into these games increases confidence in all students. Usually, this does not just mean they get better at only English, but in all subjects in school. This in turn makes the teachers more motivated and optimistic, they can really make a difference in their lesson.(Verona, 2003:30). Apart from all this, language games like any other games involve learner in a healthy competition that can help them learn more. " As long as no one is forced to participate, completion can be positive and encourage player discovery, examination and learning". (Verona, 2003:33). Thus, creating the right type of language games can foster this healthy, beneficial competition in the classroom. Finally language games create a bond between the teacher and their students, which is fulfilling for the teacher and students alike. In short, if used properly by the teacher,

games are excellent ways whereby students have fun and the same

time acquire a language. In simple words, English language games actually give students a reason to communicate and a context for speaking practice. games have proven to have advantages and effectiveness in learning vocabulary in various ways:

1- Games bring in relaxation and fun for students, thus help them learn

and retain new words more easily.

2- Games usually involves friendly competition and they keep learners

interested.

3- Vocabulary brings real world context into the class room and

use of English in a flexible, communicative way.

4- Games are highly motivating and they give students more opportunity

to express their opinions and feelings. (Verona:2003:35)

The rules of playing games:

The rules of games in teaching and learning vocabulary cannot be

denied. However, in order to achieve the most from vocabulary games,

it is important that suitable games are chosen. Wherever a game is to

be conducted, the number of students, proficiency, level, cultural

context, timing, learning topic, and class room settings are factors that

should be taken into account.(Sari, 2009:76) gave us guide-lines,

based on her experience in the classroom. She provided the following

general set of principles for choosing games:

1. A game must be more than just fun.

2. A game should be involve " friendly " competition.

3. A game should keep students involved and interested.

4. A game should be encourage students to focus in use language.

5. A game should be familiar by children.

Aims of using games in teaching vocabulary:

Games are like any other activity and when planning for them the teacher needs to consider what her / his objectives are . Some examples of aims and objectives when using games in teaching vocabulary are:

1. Present new vocabulary items.

2. Review vocabulary from previous lessons.

3. Check what students know before teaching new vocabulary items.

4. Practice new vocabulary items that have just been presented.

Thus, we can see that games are the heart of teaching vocabulary and not just an activity to fill the odd moments when the teacher and the students have nothing better to do.

Kinds of games:

1. Whole class games:

Some games such as interview activities, bingo, jeopardy, and board games can be played by the entire class.

2. Games in small groups:

There are also lots of games that can be played in groups of about four

students. For example, card games.

Suggested games:

" Teachers need to consider which games to use, when to use them, how to link them up with the syllabus, text book or program and how, more specifically, different games will benefit students in different ways (Khan,J.1996: 100)."The key to a successful language game is that the rules are clear, the ultimate goal is well defined and the game must be fun. Below are some games which we might consider to have impact of English language teaching.

1. Word map activity:

It engages learners to give what they know in this activity, students are going to work on aspects of houses and things of them. Teacher should start by putting the beginnings of a map on a board. Students then should add other rooms on the board. After that, teacher should ask students to work in groups giving words they know. The advantages behind using this way is to make students remember some vocabulary they may know and may give them chance to learn new words from their peers and the teacher as well.

2. Ambiguous picture:

Draw a small part of a picture. Ask the students what it is going to be. Encourage different opinions. Do not confirm or reject their ideas. Add a little more to the drawing and ask the question again. Build your picture

in about four stages.

3. Association:

Start by suggesting an evocative word: "storm", for example. A student says what the word suggests to him or her- it might be "dark", and so on round the class. You might start with any other word or use an item of vocabulary the class has recently learnt.

4. Cross words:

Ask a student to write a word of not more than five letters in the middle of the board, for example, "melon". The letters should be written clearly and separately. Now think of a word which shares one letter with the word on board. Give students a clue to your word. For example, "I like reading them". If somebody guesses: books' 'he or she writes she writes the word so, it crosses the first word and shares a letter. The students now take over.

5. Favorite words:

Write on the board one of your favorite words. Tell the class if is one of your favorite words and explain why. Tell students to write down some of their favorite words and then give their reasons for choosing them to their neighbor.

6. How many things can you think of that…. ?

In groups, students try to think of and note down as many things as they can that fit a given definition and that they know in English. For

example, you might tell them to think of as many items as they can that work on electricity. After two or three minutes have a competition to see which group can think of the most items.

. Invisible elephant:7

Tell the students that you are going to draw a picture for them. Draw the outline of an elephant, a car. A man, a bird…. In the air with your finger. Ask them what you have drawn. Encourage different interpretation.

8. Match the people:

Write a list of about ten jobs on the board. Each student writes down a list of ten ideas, feelings, memories, etc. He/she associates with one of the jobs listed. Ask students to work in pairs, and each student studies his or her neighbors' list and tries to guess which job the list refers to. The students then confirm or reject the guess and explain why he or she put each word in the list.

. Match the adjectives: 9

Write three adjectives on the board. For example, important, dangerous, heavy. Ask students to suggest things which can be described by all three adjectives.

11. Recalling words:

Write on board between 15 and 20 words the students have recently learnt, or that you think they know. Make sure all the words are

understood. Give a minute for everyone to look at them, erase them. Individually, or in pairs or groups, the students try to recall as many as they can and write them down.

13. Vocabulary steps:

Draw a series of steps on the board. Take any set of concepts which can be graded objectively. For example, metals can be graded according to value. Animals can be graded to how dangerous they are.

14. A spelling game:

The objective here is to review vocabulary, teacher makes a list of vocabulary covered in previous lesson. Students should stand. Teacher calls out a vocabulary word. The first student, begins by saying the word and giving the first letter, the second student the second letter of the word, the third student the third letter, and so on until the word is spelled out correctly. If somebody makes a mistake he/she must sit down and start again from the beginning until the word is spelled out correctly. The last student must pronounce the word correctly and give a definition in order to stay standing. The student who is left standing is the winner.

Conclusion

Teaching vocabulary is very essential part of second language learning. The ability to communicate in L2 clearly contributes to success of the learner in school and later in every phase of life. Therefore, it is

important for teachers to pay a great attention to teaching vocabulary rather than leading them to pure memorization, providing a rich environment where meaningful communication takes place is designed. Various kinds of activities (games) listed in this paper can contribute in developing basic interactive skills. These games(activities) give chance to learner to be more active in your classroom at same time make their learning more fun and meaningful.

Recommendations:

1- Teachers need to attend training courses on how to teach English using the communicative approach.

2- Teachers also need to be trained to practice some communicative activities, because these activities enable learners to interact in a variety of situations while practicing English.

3- Teachers of English should always ask for supporting materials which help and train students to use the language.

reference

Dynne, C. (2001) Teaching Language to Young Learners. Cambridge: Cambridge university press

Graves, M.(2000). Games for Language Learning: The Use of Games for Vocabulary Presentation and Revision. London: Arnold

Holmes, K. Holmes,S. & Watts, K. (2012) A Descriptive Study on the Use of Materials in Vocabulary Lessons, Journal of Research in Childhood Education.

Khan, j.(1996) using games in teaching English to young learners. Longman.

Schunk, D.H. (2001) Learning Theories. An Educational Perspective. Boston: Pearson Education.

Slattery, M. & Jane Willis, (2001) English for Primary Teacher. Oxford: Oxford University Press

Thanh, T.and Khunt, H. (2000) Learning Vocabulary through Games. Agnieszka Uberman.

Verona, p. (2003)Doing it differently: Tips for teaching vocabulary. New York : Rutledge. Wood,D. (1998) How Children Think and Learn. The Social Contexts of Cognitive Development. Oxford: Blackwell Publishing.

تقييم التدريب : المشاكل التي تعيق تطبيق التقييم بكفاءة وفعالية

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ملخص :

باستخدام أسلوب دراسة الحالة . هذه الورقة العوائق المشتركة التي تمنع تطبيق نماذج التقييم بفعالية وكفاءة بالمؤسسات المصارف الليبية . ولأجل تحقيق الهدف المشار إلية ، تم سؤال المرشحين كيف المصرف يقيم برامجه التدريبية البحث استخدام استمارة الاستقصاء لتجمع البيانات الكمية بالإضافة للمقابلة الشخصية مع كل مستجيب للحصول على البيانات النوعية ، مدعمة بملاحظات الباحث إثناء إجراء المقابلات الشخصية بالإضافة إلي ملاحظات تم الحصول عليها خلال الزيارة المدنية ، استمارة الاستقصاء تضمنت خليط من العناصر الكمية والنوعية وذلك للسماح للمستقصي منهم التوسع في الإجابة وتشاطر أرائهم ، بينما المقابلة الشخصية استخدمت أسئلة مفتوحة ، غالبا لأنها أكثر مرونة وتتيح المجال للمستقصى منهم الاستفسار والاستيضاح عند الحاجة في المجمل ،8 استمارات تم إرسالها للمستقصى منهم 8 مقابلات تم عقدها . أهم النتائج المتحصل ليها : أن جهود المصرف بشان عملية تقييم البرامج التدريبي لم تتحقق بسبب عدد من العوائق مثل الهيكل التنظيمي ، الاتصال ، السياسات ، دور المسئولين في المستويات الإدارية العليا والمناخ التنظيمي .

Training Evaluation: Common Problems Hindering Effective and Efficient Evaluation

Fawzi Milad, M, Elfazani

Introduction:

Among academic and practitioners, there seem to be widespread agreement of a precarious dichotomy: evaluation is the most poorly conducted aspect of training activities yet; evaluation is one of the most important aspects of training (Harrison, 2015). Thus, evaluation is logically important and stressed by academics and practitioners alike, but it is very hard to do efficiently and effectively (Hatton, 2003). Training in Britain Survey in 2009 estimated that employers in the UK spent 16 billion pound on training in 2008/09, demonstrating that is increasingly being seen as a major investment. However, of these organisations, only 15% tried to evaluate the benefits of training, and of that 15%, only 2.5% conducted a cost-benefit analysis (Training in Britain Survey, 2010, cited in Harrison, 2015, p, 185). In order to ensure that the right training is given to the right people at the right time, right cost and with the right outcomes, training needs analysis and evaluation are essential steps in the intervention process. Evaluation is by no means a simple task that can be successfully completed by applying off the shelf package. Evaluation impacts and is impacted by a list of variables like organisational culture, internal/external programmes, information technology, communication system, budgeting, organisational structure and managerial responsibility to name a few (Harrison, 2015).

Due to its complexity, many have looked to evaluation model for guidance. For over thirty years, Kirkpatrick's four level model has served as the primary model for designing training evaluations in private organisations (Bates, 2004). A study done by Al-Tarawneh (2009) concluded that at face value, all four levels of Kirkpatrick's model were being applied; however, following a closer analysis, they discovered this was not the case. They posit

the reasons for this dichotomy is that trainers recognise the need for evaluation yet, due to lack of money, time and resources they are unable to implement an evaluation strategy. Even in those cases within their research which attempted all four levels of evaluation, an analysis of the methods chosen shows confusion as to what is or not a valid indicator and an appropriate cause/effect relationship. Tarawneh (2009, p.15) main conclusion is that "there has been little change in the amount and reliability of training evaluation, notwithstanding greater financial pressure on training department". It is evident that evaluation is an essential component for any HRD department and training programme. However, it is not as straightforward what steps need to be taken in order to conduct an effective evaluation.

The purpose of this paper is to discuss common barriers that hinder the effective and efficient implementation of evaluation models in Libyan banking organisations, more specifically, in the selected case, the Gumhouria Bank. For the mentioned purpose, the participants were asked questions to obtain information how the selected bank evaluate its training programmes. The sequence of the paper as follows. First it presents the study problem, research aim and objectives, and research methodology. Second, it follows by a theoretical background of training evaluation. Third, section displays the organisational setting in which the study was conducted. Fourth, the findings and discussion presents the research data and explores why Bank is unable to consistently reach levels three and four in Kirkpatrick's model. The final section discusses the research conclusion and recommendations.

It is worth mentioning that the term Human Resource Development (HRD) and Learning and Development (L&D) will be used interchangeably and refers to those involved in the design.

Keywords: Libya; Banking organisations; Training evaluation.

The Research Problem:

Many organisations do not systematically examine the success or failure of training programmes despite the dogma encountered which emphasises

the importance of establishing needs and objectives. Bee and Bee (2010) posit that most organisations do not undertake thorough evaluation techniques because their organisation is too big, making it difficult to conduct a study due to size and geography. Evidence also suggests that evaluation is not undertaken by trainers for a long list of reasons including: time consuming, line managers are not always cooperative, failure to determine an appropriate and effective evaluation method, and some are based on interviewing which requires specialised skill set (Harrison 2015). One of the main reasons evaluation is not conducted is known as the *confounding variables effect.* This occurs when it is extremely difficult to distinguish the effects of training from that of other stimuli or variables that have impacted trainees (Newby 2011).

Another reason for the absence of evaluation is the difficulty in identifying factors and relationships that could be measured to gauge the effectiveness of the programme. Lewis and Thornhill (2006) have termed this non-*quantifiable effect*. This occurs when the results of training are such that they cannot be quantified. A classic example of this is soft skills training where the link between the training and effect is intangible or hard to prove. In this situation, even qualitative evaluation methods can be skewed by confounding variables.

Buckley and Caple (2014) explore another reason for not conducting evaluation: when the follow-up evaluation costs more than the original problem or course. This is more likely to happen in the higher levels of evaluation as the cause and effect are further apart and harder to trace. There seems to be a belief, almost an act of faith, that training must be a good thing as the most successful organisations engage in high amounts of training (Lewis and Thornhill, 2006). While this is true, it does not follow that all training is a good thing; evaluation must be carried out to without the effective from ineffective programmes.

Perhaps the most common reason for the lack of evaluation is the organisational political effect. This is mainly because, evaluation is political act in a context where power, ideology, and interests are paramount and influence decisions more than evaluative feedback (Clarke 2013, p.137).

Evaluation results that do not reflect positively on training programmes can imply that the decision to conduct training was an incorrect one. In effect, people are reluctant to question their own convections and ask questions they may not want to hear the answers to. Additionally, authority is an obstacle to evaluation. Even though many organisations are promoting a flatter structure, hierarchies exist and many training officers are unwilling to push an argument with their superiors or take up an examination of results which could prove superiors wrong. These factors contribute to the maintenance of a non-analytical approach to training which does not benefit the organisation. Pepper (2012) refers to this occurrence as the inhibiting effect of authority.

Several of these hindering factors are related to the potential threat that evaluation can pose to those in positions of power. In cases such these, the organisational culture can normally by characterised as defensive or static, where people are discouraged from asking questions that 'no one wants to hear the answer to'. Lewise and Thornhill (2006) see these reasons for absence or ineffectiveness of training evaluation as having a direct relationship with organisational culture. Sometimes evaluation is not done because it's never been done and finding the motivation and understanding to introduce a programme is not a high priority. The conclusion can be drawn that organisations with certain culture such as these are not capable of providing the platform for an organisational level evaluation (Lewis and Thornhill, 2006). On the other hand, organisation with cultures open to questioning, new ideas and willing to recognise their weaknesses and learn are more adaptable to evaluation that tries to establish that training makes a positive contribution to organisational objectives. The researcher find it necessary to emphases that looking into organisational culture must span the entirety of the organisation, because it is possible that the learning and development department (L&D) may be forward thinking but if the sentiment is not ubiquitous then co-operation cannot be guaranteed.

Research Aim and Objectives:

The overall aim of this research study is to address the popular Kirkpatrick model and what common issues that hinder the effective and

efficient implementation of evaluation models within the selected Libyan bank.

To achieve this aim the following objectives have been identified:

- To explore barriers exist within the selected case that hinder a full four level evaluation.
- To advance some suggestions and recommendations based on the participant viewpoints to successfully drive a more effective evaluation process in the selected bank.

Research Methodology

The case study was an appropriate strategy for this paper, mostly because the researcher is looking at a broad exploratory study that will be used to define more narrow areas of necessary research. Moreover, to discover what, if any, casual relationships existed between evaluation at levels two, three and four, and the ability of an organisation to complete them. Woodside and Wilson (2003) have noted that case study research is an inquiry focusing on describing, understanding, predicting, and/or controlling the individual case.

Gumhouria Bank in Libya was chosen as the case study organisation from the list of the other four large commercial banks in Libya as it is the biggest and most important commercial bank in terms of assets and banking operations. Gaining access is an absolutely critical pre-condition for obtaining key data. Following a discussion with a Senior Learning Consultant at the Bank, it became clear that their organisation was suitable and willing to be a part of this research. As a Learning and Development department they utilise the Kirkpatrick model and complete level one and in some opinions level two; however, like many other organisations, level three and four seem to elude the department.

This research employed a questionnaire to collect quantitative data prior to a semi-structured interview with each respondent to gain qualitative data, supported by the researcher's on-site observations. The questionnaire used a mixture of quantitative and qualitative items to broaden the response and allow for the respondents to share some of their views, whilst semi-

structured interview used open-ended items, mostly, because are more flexible and enable the interviewer to probe and clarify issues when necessary.

In total, eight surveys were sent out and eight interview requests made; of those five employees in L&D department responded and were interviewed. The research took a stratified random sample of one L&D Consultant from each stratum within the L&D department. Gathering data from this sample, it generalised the findings and applied conclusions to the whole department.

The more difficult part of the research was analysing the interviews and the open-ended items questions from the questionnaire. First dealing with the questionnaire, the researcher took all of answers and compared them side by side. As the questions were a basis for the interview questions, the researcher then compared each answer with the one given during the interview. Compiling the respondents' answer, the researcher looked for themes and answers that reoccurred and then cross referenced them with theory and other data found in reading for the literature review. The responses used to create a current picture of evaluation in the organisation. After that the researcher looked at the interview responses to questions which referred to underlying factors that may inhibit the successful implementation of Kirkpatrick's evaluation model. These answers were taken and compared against theory and existing studies to find similarities and differences. As the purpose of this paper was to conduct exploratory research, the data will be used to support recommendations for the selected bank and perhaps give a big picture view of what is really happening in the organisation.

Training Evaluation: A theoretical Background

1. Definitions:

Evaluation as a term is widely used in a variety of contexts, setting and circumstances. For this reason, a variety of definitions and approaches to evaluation should be considered and compared.

Beginning with a definition provided by a glossary of training terms, evaluation is the assessment of the total value of a training system, training

course or training programme in social as well as financial terms. The term is also used in the general judgmental sense of the continuous monitoring of a programme or of the training functions as a whole (Quoted in Sloman 2009, p.149).

Hamblin (2010) disregards this definition because evaluation in the glossary sense of the word is strictly impossible. In line with the glossary definition, Buckley and Caple (2014, p.30) define evaluation as, the process of attempting to assess the total value of training: that is the cost benefits and the general outcomes which benefit the organisation as well as the value of improved performance of those who have undertaken training. Hamblin (2010) would disregard both of these definitions as he views evaluation as selective and partial. Accordingly, he argues that the total value of a training programme cannot be measured in social as well as financial terms.

Asserting his own definition, Hamblin (2010, p.8) defines evaluation as, any attempt to obtain information (feedback) on the effects of a training programme and to assess the value of training in the light of that information. As before, this definition is not without criticism. Bee and Bee (2010) view this definition as too loose and unspecific which suggests an undisciplined approach to the evaluation process.

A more useful definition and one that this project will use, is provided by Patton (2009, p.33). He defines programme evaluation as, the systematic collection of information about the activities, characteristics, and outcomes of programmes for use by specific people to reduce uncertainties, improve effectiveness, and make decisions with regards to what those programmes are doing and affecting. This definition not only addresses the outcomes of the programme, but also its characteristics and activities that may have taken place prior to the learning event. Additionally, it promotes a systematic collection of data implying that the evaluation has been planned and executed in a thoughtful and strategic fashion instead of informal and hoc inquiry. More important than subtle differences among these definitions is that they all emphasise that training evaluation should assess not only the value of training, but also the organisational impact.

2. Why evaluation

An important point noted by Kirkpatrick (1999) states that evaluation merely provides evidence, not proof of benefit. Thus it is essential to remember that overall purpose of evaluation is not to prove but to improve programmes and policy making (Clarke, 2013).

According to Bee and Bee (2010) there are four main purposes to conducting evaluation: improving the quality of training, assessing the effectiveness of the overall course, justifying the course and the role of training. Easterby-Smith's (1994) four purposes of evaluation proving, improving, learning and controlling do not differ greatly from Bee's.

Easterby-Smith (2011) holds that evaluation tends to place greater emphasis on how the information will be used which divorces it from the training. Evaluation can be used as a tool to reinforce and contribute to the learning process so it is an intervention and a part of the training process (Easterby-Smith *et al* 2002, Phillips 2010).

Phillips (2010, p.36) lists an additional ten reasons for undertaking evaluation:

1. To determine success in accomplishing programme objectives.
2. To identify the strength and weaknesses in the Human Resource Development (HRD).
3. To compare the costs to the benefits of an HRD programme.
4. To decide who should participate in future programmes.
5. To test the clarity and validity of tests, cases and exercises.
6. To identify which participants were the most successful with the programme.
7. To reinforce major points made to a participant.
8. To gather data to assist in marketing future programmes.
9. To determine if the programme was the appropriate solution for the specific need.
10. To establish a database that can assist management in making decisions.

From these ten purposes, it is clear that Phillips (2010), broadly speaking, thinks that evaluation is used to improve HRD processes, decide

the future of a programme and gather information that will be useful to a variety of stakeholders.

A more generalist view of why evaluation needs to occur comes from Pepper (2012). He states that it is characteristic of the average man that upon making a decision, action will be taken without thought to test the decision or the success of the action. Everyday life provides the man with feedback and he can adjust his actions and with luck will avoid injury or disaster. Pepper continues, if his decisions are in conjunction a longer term and more complex set of actions, many of which he may not see, he is not naturally well equipped to inform and adapt himself. Hence, in business, management needs to develop information systems which enable them to know if they are still travelling in the right direction, and whether or not that direction remains profitable. Therefore, questioning and evaluating one's own convections may be rare in man but must be present in organisations. Taking all of these reasons into account, it seems that evaluation is a wonderful exercise that provides HRD with an arsenal to determine the worth, value and meaning of activities and processes and how they fit into the bigger organisational picture. Then why are HRD practitioners not evaluating?

3. Models of Evaluation

Most training evaluation models work on the premise that the purpose of training is to benefit organisational performance. Logically, the purposes which underlie evaluation lead directly into the various levels or stages of evaluation contained in models. There are a host of evaluation models, one of the most widely accepted and utilised is Kirkpatrick's model created in1959, which contains four levels: reactions, learning, behaviour and results (Kirkpatrick, 1999).

The popularity of the model stems from its simplicity and ability to be applied and understood in a systematic fashion. Additionally, it has allowed trainers to couch their results in business terms and contribute to the organisational objectives and success, moving L&D into the business partner role (Bates, 2004). It also provides a simplified process for the otherwise complex task of training evaluation. According to Bates (2004), Kirkpatrick's model has made a valuable contribution to evaluation thinking

and practice. His model has helped focus training evaluation practice on outcomes, which fostered the recognition that a single outcome measure cannot adequately reflect the complexity of organisational training programme. It also underscored the importance of examining multiple measures of training effectiveness (Bates, 2004,p.342).Wang (2003) adds to this by saying it has brought an awareness to thinking about assessing training impacts in business terms. Additionally, the distinction between learning (level 2) and behaviour (level 3) has focused attention on the importance of making the learning transfer process effective. Lastly, Kirkpatrick's model has served as a base from which many other models have grown (Hamblin, 2010; Bee and Bee, 2010; Holton, 1996).

Other models created after this have tended to adapt Kirkpatrick's hierarchy but with different terminology. Hamblin (2010) uses the terms *reaction, learning, job, behaviour, organisation and ultimate value*. Within his model, he assumes a cause and effect chain which links the five levels. Other academics see this chain as problematic and a weakness of Hamblin's model. This will be discussed further in the limitation section. Bee and Bee (2010) have also adapted Kirkpatrick's model with their own headings (*reaction, immediate, intermediate, ultimate*) and followed in Hamblin's (2010) footsteps by dividing the fourth stage between the effect on organisational objectives (i.e., absenteeism, sales, productivity) and the economic effects in a cost-benefit analysis. The researcher prefer not to use the terms provided by Bee and Bee (2010) because they are somewhat misleading, as learning is not always immediate it can happen gradually.

This paper will use Kirkpatrick's headings and refer to them as level one to four. In describing each level, The researcher have adapted information from Hamblin's (2010) and Bee and Bee's (2010) descriptions as they do not differ greatly from the content of Kirkpatrick's model.

- Level 1-Reaction

Reaction outcomes measure the trainee's perception, emotions and subjective experience of the training programme (Kirkpatrick, 1999). Both Kirkpatrick (1999) and Hamblin (2010) caution practitioners from using level one to measure enjoyment only, Hamblin (2010) states that trainers

must decide what aspects of reaction they are interested in and how they hope trainees will react. He adds that if a trainer fails to articulate his/her reaction objectives then they are in danger of collecting irrelevant data.

This data usually gathered by administering a questionnaire, often termed a reactionaries or happy sheet. Questionnaires are useful, but they do not measure how much was learned and further give little information about value to the organisation (Blanchard and Thacker, 2004).this is why evaluation beyond level one is necessary for a comprehensive evaluation.

- Level 2-Learning

Learning evaluation is the measurement of the increase in knowledge from before to after the event and how well the learning objectives were met (Chapman, 1995). Evaluation at level two requires reliable tests which measure ability or knowledge both before and after the learning event (Bramley and Kiston, 1994). Bee and Bee (2010) propose that training objectives should set out the performance required in behavioural terms, conditions under which the performance will occur, criteria or standards against which performance will be judged and what constitutes acceptable performance. As a result, this level relies heavily on the setting of behavioural or outcome objectives and the clear and effective communication and agreement of all stakeholder groups (Harrison, 2015).

- Level 3- Behaviour

In order to assess if learning transfer has occurred , it is necessary to see if the new skills, attitudes or behaviour are being reflected in the workplace (Hamblin,2010).job behaviour outcomes need to be measured further down the line and by both the trainee and their line manager (Harrison,2015). Problems arise when performance indicators have not been clearly set and communicated. Additionally, in order to observe a change in behaviour, the level of pre-training performance must be measured (Bee and Bee, 2010). The need for line manager involvement at this stage is crucial (Harrison, 2015). If trainees are not given the opportunity to use or practice their new skills, there is no way to assess them or for them to transfer their learning into knowledge (Kirkpatrick, 1999). Bee and Bee (2010) argue that this level is most valuable source of assessing the effectiveness of training. However,

it is also the level of assessment that requires the most thought, careful planning and implementation to ensure the information gathered is relevant, good quality and done in a minimally disruptive way.

- Level 4 (part 1)- Results

Finally, the results level assesses the effects of the training on organisational performance (Chapman, 1995). The impact on organisational performance can be measured by: individuals' performance, increased productivity, sales, turnover, profit, quality measures or error rates (Bee and Bee, 2010).The difficulty in level four evaluation is that the link between training and increases in these measurements of performance is often hard to prove (Lewis and Thornhill,2006). However, this link is essential as it demonstrates the business case for training budget and demonstrates a positive impact.

- Level 4 (part 2)- Cost benefit

For many organisations, evaluating the effectiveness of the training is only half the question. The other half is determining whether or not the results were worth the cost. Using a cost/benefit analysis which compares the monetary cost of training to the non-monetary benefits is effective for answering this question (Harrison, 2015). This can be difficult as, previously mentioned, it is hard to place a value on tangible benefits such as working relationships and attitudes (Phillips, 2010). Using the cost-effectiveness evaluation one calculates the actual cost savings based on the results and the utility analysis which examines the value of overall improvement in employee performance (Blanchard and Thacker, 2004).

Al-Tarawneh, (2009) maintain that the problems with evaluation at levels three and four are not completely understood because of the lack of evaluation at these levels. They argue that one reason that evaluation is not conducted at these levels is because a lot of trainers use an individual training model where the emphasis is on the individual learning something useful to them and them finding uses for the new skill and knowledge. In examining the model, it is possible to evaluate levels one and two but any evaluation would be difficult because the amount of work for identifying

criteria and measuring the candidate against them is not considered worth the return (Al-Tarawneh, 2009).

The increased effectiveness model for training lends itself to level three and four evaluation as the training needs and objectives are defined in terms of behavioural change and increased effectiveness in the trainee's business area as opposed to increases in knowledge, skills, and abilities. More importantly, the line managers and supervisors are involved in each stage of the process so that they are able to define the measurements and are certain they can assess the candidates in the workplace (Mann and Robertson, 1996). Bramely and Kitson (1994) admit that the increasing effectiveness model is not widely used because the process of identifying evaluation criteria is time consuming and requires a lot of discussion between trainers and line managers. Nonetheless, the model is helpful in that it moves towards designing training to meet business criteria in addition to individual needs.

4. Limitation of the Kirkpatrick Model

As with any model, Kirkpatrick's model is not without limitations. Some academics like Bates (2004) and Hashim (2001) maintain that the model is incomplete. The model does not consider individual or contextual variables demonstrated that a range of factors from organisational culture, politics, individual attitudes and the design and delivery of programme can affect the effectiveness of training event (Cannon-Bowers *et al*, 1995). This recognition has led to a revised view on evaluating training effectiveness which considers the environment, the individual and other external factors that can influence the trainee.

While Kirkpatrick's model does not explicitly state that one should examine each of these areas in turn, I would not go so far as to agree with Bates (2004,p.342) that his model implicitly assumes that examination of these factors is not essential for effective evaluation. I think that there is only so much guidance that a model can give and it will never be completely accurate for every organisation. Models, much like evaluation, cannot operate in isolation due to the host of factors and variables present in organisations (Lewis and Thornhill, 2006). Most models do not provide

steps or actions that need to be taken before the model can be successfully implemented; this is where L&D practitioners come in. As a department, L&D need to engage with the model and apply it to their specific organisational context. Harrison (2015, p.116) articulates this challenge for learning and development practitioners as the need "to combine technical expertise with the business partnership skills and deep understanding of organisational context that can ensure successful delivery and impact". There is no one size-fits all solution, all models need to be moulded and adjusted to fit the culture, structure and need of each organisation.

Brinkerhoff (1988) and Bates (2004) further critique Kirkpatrick's model for being outcome oriented. Building on Brinkerhoff's (1988) ideas, Lewis and Thornhill (2006) maintain that is necessary to look for a boarder link between the training and the organisation instead of just a relationship between the training and initial reaction to the event. Bates (2004) goes so far as to say that the model implies that pre-course measurements of learning or job performance are unnecessary for determining project effectiveness; and the model eliminates the need to consider other variables impacting the training process. Hashim (2001) argues that evaluation needs to be considered just as much, if not more, than every other portion of the HRD process.

Another criticism of Kirkpatrick's model is that there seems to be an assumption that if there are positive reactions to a training course then learning has occurred and changes in behaviour or higher levels of effectiveness will follow (Bramely and Kitson, 1994; Bates, 2004). Academics who disagree with this assumption question whether or not this link can be made when evaluation only occurs at the lowest level of the hierarchy. They further question how evaluation at the lower levels can be used to demonstrate a clear and reliable link between training effectiveness and the attainment of strategic organisational objectives (Bates, 2004; Alliger and Janak,1989). Agreeing with this, Holton (1996) concludes that even though Kirkpatrick is vague about the links among the levels, he implies a degree of casual association. Bramely and Kitson (1994) assert that Kirkpatrick does not make this assumption. However, in a recent publication Kirkpatrick (1999, p. 27) asserts that if training is to be effective, it is

important that the trainees react favourably, implying a link between the reaction level and training effectiveness. Kirkpatrick (1999, p. 51) goes on to say that "without learning no change in behaviour will occur". These assertions seem perfectly logical, if one does not learn a different way of doing something then they will not change the way they have always done it.

Those who have built on his model or developed similar schemes appear to accept this chain of events. Hamblin (2010), in particular, posits that reaction leads to learning, which leads to changes in behaviours and ultimately changes in organisations. This chain reaction seems logical; however, there is not much evidence to support this assumption. A survey of research conducted by Hashim (2001) concluded that only twelve articles existed that attempted to correlate the various levels. This led them to conclude that there was no relationship between reaction and the other three levels. In other words, a positive reaction did not predict learning or behaviour changes any more accurately than a negative reaction. This conclusion emphasises the need for evaluation to be carried out at all possible levels as each level provides different information and evidence.

Evan though each level provides different information, Hashim (2001) reject the conjecture that each level of evaluation is more useful than the previous one. The notion of level four being the ultimate level of evaluation has created the supposition that if one= evaluates at level four, then they will have the most robust feedback about the effectiveness and impact of the training event. Bates (2004.p. 343) contends that this is not so in practice as "the weak conceptual linkages inherent in the model and resulting data it generates do not provide an adequate basis for this assumption". While Bates point is valid, if a practitioner has achieved a level four evaluation, then they have proved whether or not the programme has impacted organisational performance. According to Bee and Bee (2010), the ultimate goal of training is to improve organisational effectiveness and performance, thus level four is the key level to providing such data.

Patton (2009) notes that training evaluations that do not provide the information deemed important by clients and stakeholders are unlikely to be used. In this instance, level four evaluations are of the most significance to

those in senior management who need to prove that L&D is providing value and benefit to the organisation. Therefore, to this stakeholder group, level four is going to be the main focus of evaluation, making it the most important in providing information about the effectiveness of the event. Thus, while Hashim (2001) may be correct in saying that there is little evidence for the for the linkage of the levels, they overlook the fact that different stakeholder groups will assign varying degrees of importance to each level, making level four, for some, the most useful and most important.

Kirkpatrick's model has been criticized on theoretical grounds and many say that his categories are not discrete. However, as a model it has stood the test of time which suggests it is viable, perhaps the issue is not with the model but rather with the implementation (Russ-Ef and Preskill, 2001)).

Organisational Setting

1. introduction

In order to gain a better understanding, Stake (1995) suggests outlining the cultural and organisational setting for the case. Therefore, this section outlines the contextual element of the case which is important in understanding not only the case presented but also the appropriateness of the research methods chosen. It should be noted that all of the information in this section has been taken from the questionnaires and interviews were conducted as well As my own observations during my time in the bank. As a result, these are in effect findings and will be referred to in the findings and discussion section as well.

2. The size and the management

Gumhouria Bank is one of the commercial banks in Libya. The number of employees reached 5,311 in 31 December 2013 (BR, 2015a), thus becoming one of the largest Libyan banks, ranking second after the Libyan Arab Foreign Bank (CBL, 2008a). It is also one of the top ten major banks in Africa region on the basis of the size of total assets (The report, 2008). In 2010, the bank became "the fifth-largest bank in North Africa" (The report, 2010, p.76). The Head Office of Gumhouria Bank is located in the capital of Libya, Tripoli. According to the Bank website, the bank developed its

services within and outside Libya, specifically in the following areas (http://www.gumhouria-bank.com.ly/arabic/pages/index.php):

- Opening current accounts.
- Opening saving accounts.
- Providing social loans.
- Providing services for internal transfers.
- Providing services for external drafts.
- Providing credit facilities.
- Issuing certified cheques.
- Providing services for documentary credits.
- Providing services for letters of guarantee.
- Issuing Visa credit cards.
- Providing services for A.T.M. Machines in 26 places in 9 Libyan cities.

In addition to the above activities, at the beginning of 2010, the bank started providing new customer services including an internet-based money transfer service, fuel credit cards which can be used at petrol stations in Tripoli and surrounding areas, and Islamic banking service in Tripoli, Benghazi and Gharian (http://www.gumhouria-bank.com.ly/arabic/pages/index.php).

3. Departmental structure

Learning and Development (L&D) is part of larger Human Resource (HR) department made up of (L&D), (HR), and Internal Communications. This is a new structure for this department as they restructured in 2010. Previously, consultants were grouped into conceptual areas such as sales or credit and delivered training to whomever required their speciality services. Through my interviews with L&D consultants, I discovered that all of the consultants like the new structure and firmly believe it is the best one to date. L&D fits into the overall organisational picture by supporting the Bank business areas and enabling colleagues to deliver and optimise their potential. L&D have grouped the business areas into six sections which are aligned in a silo approach to specific business areas. Within the L&D team, Training Delivery and the Credit Team provide generic and bespoke training

solutions across the business. Each functional area has L&D consultants who directly report to their area's L&D Manager. The whole department is headed by the L&D Director who reports to the Executive Board. This approach enables the consultants to develop strong relationships with the managers in their business areas and provide them with tailored integrated learning and development solutions.

4. Goals and Strategy

L&D believe their success relies on their ability to adapt, embrace change and learn positively. In the L&D literature, they promote Arie de Geus' (1997,p.25) idea that, "the only sustainable competitive advantage you have is the ability to learn faster than the opposition.". This is translated into their goals and objectives which are aligned with the Bank objectives. The model utilised by L&D mimics Walton's (2012) model for Strategic Human Resource Development (HRD). The rezoning behind adopting this model is to move L&D beyond being performance driven in tasks, and increasingly embed itself towards creative learning processes that enable colleagues to be responsive, innovative and strategically aware (Walton, 2012).

According to Gumhouria Bank website and other documents, the bank had four main objectives. The first objective was to provide customers with the opportunity to obtain advanced high quality products and services. Secondly, it provided a wider-spread network of branches at a local level. Thirdly, it offered better vocational opportunities to the employees of the bank (http://www.gumhouria-bank.com.ly). This included opening the training fields for all employees and introducing new incentives (BR, 2008b). The final objective was for the national economy to witness large benefits arising from the merger. For example, the private sector would be provided with the opportunity to obtain the services of a lending Libyan bank operating with new momentum in the new competitive market environment (BR, 2008b).

5. Culture

As the researcher was an external research and have never worked for the Bank and unable to comment on the organisational culture from first-hand knowledge. Therefore, all interviewees were asked about the culture

surrounding L&D in the organisation. All of the following viewpoints were asserted by informants and did not differ greatly. Within the Bank, L&D are viewed as the key enablers to embed the change process into the organisational culture. It is the responsibility of L&D to recognise deficiencies or skill gaps and come up with new ideas to engage employees.

Historically, L&D has been seen as reactive and delivery focused. Its function was to enable employees instead of generating knowledge, skills and abilities. Some managers still view L&D as an overhead cost remarking that training is a solution not a strategy. As most interventions are manager driven this culture has perpetuated itself and managers see a problem, identify training as the solution and deem the problem fixed. Some of the managers are aware that the responsibility of developing their subordinates lies with them. However, they are confused about their ability and role in the learning and development process. Many of the L&D consultants have high hopes that the new Leadership and Commitment (L&C) framework will clarify the manager's role and encourage a more proactive perception of training and development. In some of the L&D areas, there has been a push to change this reactionary culture through the planning and creation of development plans.

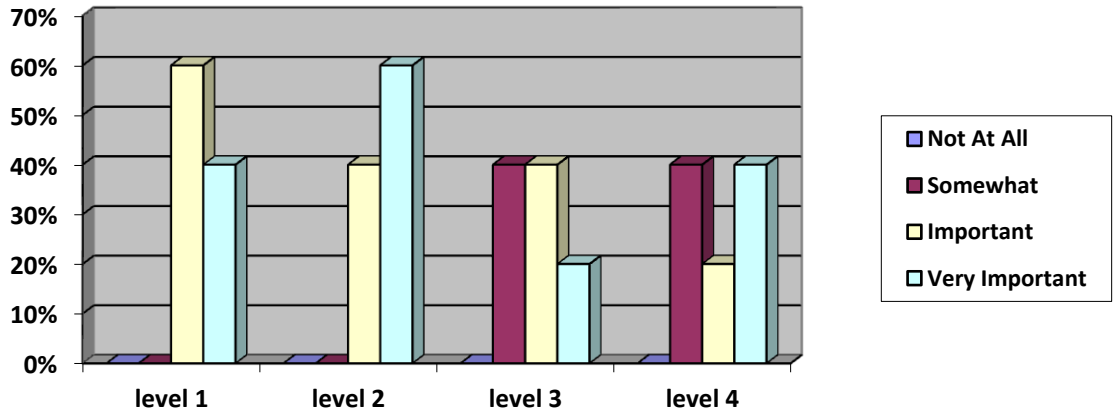
With the new departmental structure where L&D functions as a consultant, many of the business areas are beginning to view L&D as a partner instead of a pain. Harrison (2015) refers to this L&D partnership as a dance, a metaphor which highlights trust, harmony and companionship. She goes on to say that while each partner has different interests and goals, they both desire to involve individuals in effective learning events which will enhance their skills, knowledge, competence and motivation. The acknowledgement of this shared goal has allowed L&D to integrate itself into each of the business areas, giving the consultants greater footing to challenge decisions and actions. While this change is positive and a step in the right direction, I believe that a robust evaluation system would further enable L&D to assert their position as an asset not an expense.

Analysis and Findings

The information gained from questionnaire and during the interviews has shown the current level of evaluation activity in the selected bank and potential barriers that are inhibiting the full expression of Kirkpatrick's model. It should be noted that all of the data in this section is taken from the questionnaires and interviews, but will not be cited in order to maintain informants' anonymity.

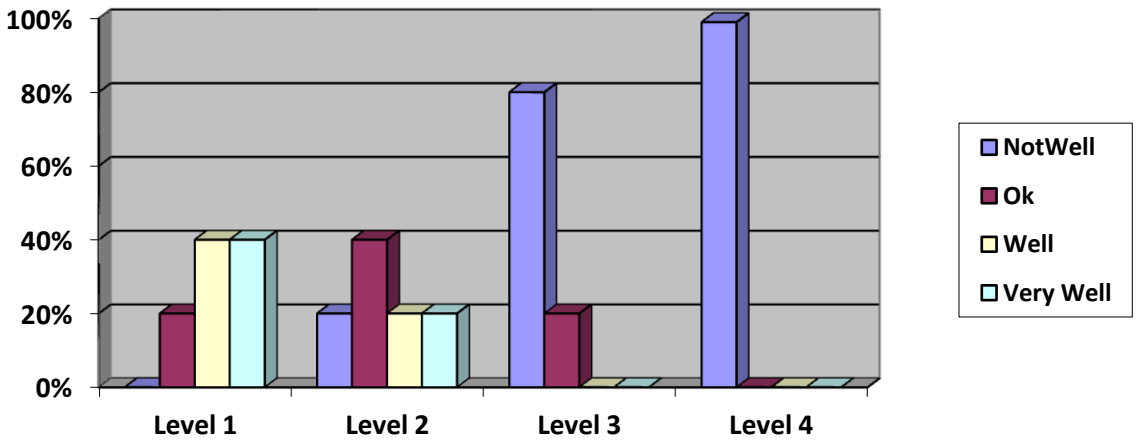
The stated desire to evaluation at all four levels is often contrasted with reality of activity only the lower levels of evaluation (Pepper, 2012). This precarious dichotomy was reflected in the Bank as all four levels of evaluation were important to the practitioners; however, that does not seem to find articulation in practice (See Figure 1).

Figure 1: How important is it to the consultants to complete each level?



In fact, the data in figure 2 showed that the majority of the consultants felt that level one was completed well or very well while level two was completed to an ok standard. More definitively 80% agreed that Bank does not complete level three well and 100% felt that Bank does not complete level four well. Interestingly, the consultants who were more positive about how well Bank completes evaluation were those who have been with the company the longest. The newer employees tended to have a more critical view of how L&D currently handle evaluation.

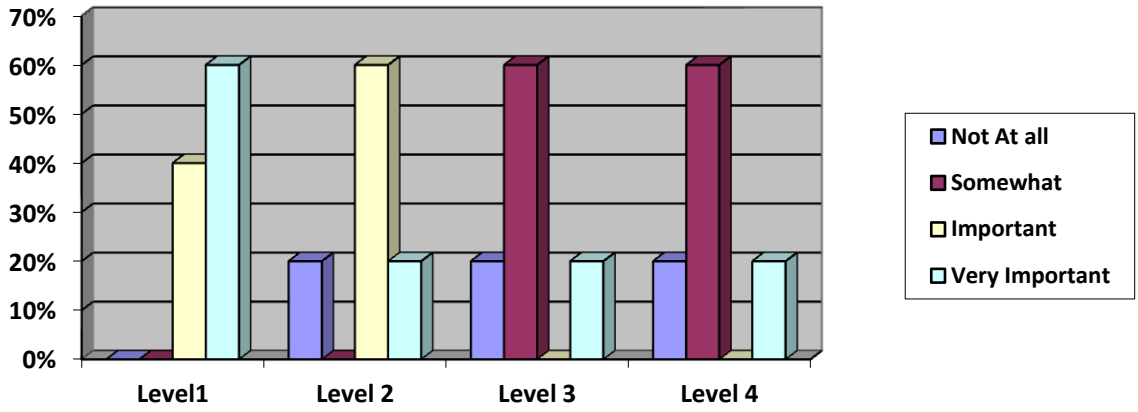
Figure 2: How well does Bank complete each level?



Perhaps this is a reflection of the low level of importance given to level three and four evaluations in the organisation. As shown in Figure 3, one is very important and two is important while three and four fall into the somewhat important category.

By asking what is currently happening in the organisation, the researcher got better sense of where they are, where they want to be and what factors might play a role in preventing them from getting there.

Figure 3: how important is it to Bank to complete each level?



1. Current Evaluation in the Organisation

- Level 1

In relation to completing level one, all of the consultants felt that they were consistent and gathered meaningful data. L&D has a computer generated survey which follows all training courses called NSurvey. It is completed anonymously and all of the data is collated and returned to the consultant who either ran or owned the course. On the whole, the consultants agreed that the NSurvey, data was used to improve the training solution's material, content and delivery. However, they also acknowledged that it is very hard to gauge from questionnaires in isolation exactly what difference training has made. They are a useful starting point but it is crucial that other measures are also used.

One consultant who was particularly critical felt that L&D only evaluate at level one, they go no deeper than the token happiness measure. The researcher found this view contrasted the other consultants and upon further inquiry noted that this consultant only faces the T&D staff, not the business areas. As the consultant does not have direct contact with the customers and training courses, he is unaware if any evaluation does take place above level one, which according to the other consultants it dose. This brought about a question concerning the effectiveness of communication across the T&D department.

- Level 2

According to one consultant, there has been a historic failure to evaluate above level two, and as such it is often not expected or welcomed. On certain courses a level two evaluation takes place on the course in the form of role play or simulations. However, any follow up after the course was referred to as 'patchy' and 'inconsistent. This is perhaps the case because, presumably, trainees are meant to have a contract with their line manager to discuss their learning on the course and how they plan to implement it. Still, it does not seem as though a follow-up is taking place from either the line manager or the T&D consultant in a consistent fashion.

In order to more effectively implement at level two evaluations, all of the consultants said that performance should be measured before and after training. One consultant noted that this can take place in a creative form and is not necessarily restricted to topic covered in the learning as knock-on effects are often very revealing. It does happen in some cases, but as more of an afterthought. Since it is not taken into account in the beginning, it is inherently flawed as the starting point or benchmark is unknown. Thus the reason behind the lack of level two evaluations is not due to a lack of knowledge or strategy. What then are other factors that might be playing a role in its absence?

- Level 3 and level 4

I have grouped level three and four as, on the evidence of evaluation at level three above is sparse. Evaluation at these levels is sporadic as there is no threat, expectation or cost of not doing it. A few of the consultants remarked that three and four go in the too hard box and are consequently not followed through in a consistent fashion.

When evaluation does occur at higher level, it is used to improve the learning solutions they provide and to confirm/question the quality of consultation and training needs analysis undertaken by business-partnering consultants. One example of this would be a course that has been recently stopped because evaluation at the behaviour and results levels suggested it

was not having the desired impact on performance, despite very positive evaluation at the reaction and learning levels. It is currently being redesigned as an on-the job solution rather than a course. According to Newby (2011) evaluation at the higher levels is worthwhile because positive feedback does not translate into changes in behaviour or contributions to organisational effectiveness. While it is positive to see that some existing courses are being scrutinised, most of the consultants felt that they could do better in their evaluation of bespoke and standardised training programmes. Such evaluation may show that an existing programme is of little value, outdated or unnecessary which is just as important as improving new programme (Newby, 2011).

On another positive note, one business area has taken on the new leadership and Commitment (L&C) behavioural framework, which is basically key performance indicators, as a measure of applied learning. Included in this initiative are steps that should be followed when participating in learning and development activities. If an employee agrees to development there should be a discussion with their line manager before the course. After the course, the trainee has a debriefing meeting and then in their quarterly review they discuss what they learned and evidence of how they are utilising it. This has been tied in with new L&C behavioural framework indicators, which, in turn, accounts for 12.5% of their bonus. This is a prime example of how all four levels of Kirkpatrick could be attained, and promotes the active involvement of line managers and L&D sharing the evaluation responsibility. However, overall there was consensus among the informants that, from a bigger business area perspective, efforts at higher evaluation levels are patchy and that they could get more from their evaluation data.

2. Factors Impacting Evaluation

In asking the consultants why they think that Bank has trouble with evaluation, they responded with reasons such as: evaluation is not given a high enough priority in an environment with limited resources in terms of time and people, failure to measure before the learning event, laziness, it has historically not been done and sometimes because of a fear of evaluation.

The data collected also highlighted other factors inhibiting evaluation, these include: structure, the role of the manager, culture and politics.

- Structure

Most of the consultants agreed that the organisational structure both helps and hinders evaluation. Aligning consultants to specific business areas facilitates the consultancy process by allowing consultants to cultivate relationships with their business areas. This enables them to offer a more specialised and knowledgeable consultancy function. While the structure is positive in this regard, most of the consultants said that the divided structure inhibits not only evaluation, but also interdepartmental communication. In theory, their organisational structure should support effective evaluation as they have everything in place for this to be the case (both the systems and personnel).however, the researcher would argue in a lot of cases this is not carried out, particularly at levels three and four.

One consultant says that there does not seem to be any ownership for evaluation outside of level one because there is no recognition of evaluation's importance to the wider business. Interestingly, this view seemed overly critical and did not seem to resonate with the other consultants. From the interview data, it became clear that the critical consultant holds this view due to the lack of communication across the department. Because all evaluation is done at divisional level, there is no group wide standard for evaluation and no forum for the sharing of best practice. Thus, divisions are forced to reinvent the wheel sometimes, which is a waste of time and money.

The consultants unanimously agreed that communication could be improved, both in the department and across the organisation. Among the consultants, there is ad hoc sharing of good practice but it was generally described as patch. The researcher got the impression that the L&D consultants were not very enthusiastic about communication, perhaps as consultants have never done it especially within the new structural alignment. With organisation and academics placing an emphasis on best practice, the training techniques and approach too must promote best practice consistently in the organisation. According to Sloman (2009) best

practice should include working within a structured and disciplined framework, embedding training firmly in the organisation, working on developing the responsibility and responsiveness of line managers and promoting consistency through the sharing of best practice. The researcher found out that the process for best practice are stored on the shared drive on the intranet and was communicated to the team about a year ago. However, no one is using them probably, because there is no requirement to do so.

- Role of the Manager

There are a variety of roles that a manager needs to fill in order to fill in to make the training process as beneficial to them, the trainee and the organisation which include: diagnosing learning needs, matching the right people to the right training, clearly communicating to the trainee and the trainer what changes in behaviour they expect to see as a result of the training. Additionally, the manager needs to evaluate these changes, allow the opportunity for risk-taking and things to be done differently, coach trainees through feedback and support their skills through reinforcement and practice and act as a model for effective behaviour (Newby, 2011). The consultants agreed with Newby's list of roles for line managers as well as with the fact that they are integral to level three and four evaluation. However, there is a lack of motivation and knowledge for the line managers to be an effective part of the evaluation process.

Some of the managers were described as helpful and some not. Overall, it seemed that post-course line manager involvement was patchy, in part due to the lack of a management information system to effectively measure impact. In one business area, the consultant observed some managers are receptive, some fall by the wayside. The researcher can have the conversation with them but then managers choose not to follow up. Consultants said; we give our expertise and push on the line managers to follow our advice. But to a degree, it is up to them whether or not they take our advice on board. Another consultant agreed with this statement saying that their challenges are not always accepted by managers through a degree of passive resistance. Managers often hold the belief that training is beneficial or make remarks to this effect because they feel it is expected of them, yet managers often undermine such beliefs and statements by demonstrating behaviour that

contradicts their message (Newby, 2011). The gap between lip-service and active participation needs to be bridged. The commitment of managers to training is valuable, but only when their support is translated into influence, coaching and rewards that encourage subordinates to take an active role (Phillips, 2010).

What the management is failing to realise is the role they play in evaluation, learning and development. Research suggests that learning, retention, motivation, usage and maintenance are influenced by managerial characteristics, the work environment and the opportunity to utilise the new skill or knowledge (Mumford and Gold, 2004). All of the consultants acknowledged this and supported educating the managers so that L&D and evaluation became a shared responsibility. This requires understanding what the managerial needs are as they are one of the main stakeholders in the L&D process.

Through involving stakeholders, the evaluator becomes active, reactive and adaptive to those who will be utilising the information. In order to achieve this, relationships with stakeholders must be developed so that the goals of evaluation are clearly communicated (Patton, 1997). The analysis of training needs is a constructive and effective way of involving line managers in the training and evaluation process. Research has shown that managers are more likely to support training and post-course evaluation when they have been directly involved in its design or the diagnosis of the need (Mumford and Gold, 2004). Additionally, findings should be discussed with each stakeholder group so that future actions can be planned and so that all groups are aware of the different interpretations of the data. Harrison (2015) and Bee and Bee (2010) stress the importance of understanding the stakeholders and how they need to receive information. For instance, one consultant noted that informal chats with his senior managers have a greater impact as they are driven by their feel for the effectiveness of learning rather than the content of questionnaires.

- Culture

As the researcher was external researcher to the bank and has never worked for the bank; “it is a distinctive compilation of beliefs, values, work

style and relationships which distinguish one organisation from another" (Sloman, 2009). As training can play a very large role in how employees view their organisation, training and evaluation must fit within the bounds of organisational culture. Otherwise, it can be devalued and ineffective (Blanchard and Thacker, 2004).thus, acknowledgement and analysis of organisational culture and how it can be managed are of the utmost importance to training professionals. This is further supported by Lewise and Thornhill (2006) who posit that the reasons for the absence or ineffectiveness of training evaluations are directly linked to organisational culture.

The interviews revealed that the culture could be characterised as non-questioning and reactive. This was directly reflected by one of the consultants' statement 'that L&D seems to care more about development and evaluation than the business areas and delegates unless it will solve a problem.' Another consultant stated that they are 'limited by the organisational culture and understanding of what constitutes development, there is no reflection, and learning outside the classroom is not valued.'

All of the consultants identified the need for a shift towards a more questioning and forward looking culture both in the organisation and within L&D. if the researcher accept Lewise and Thornhill's (2006) conclusion that organisations with static and defensive cultures are incapable of providing a platform for effective evaluation then this recognition of the need for a change in the culture is a positive step towards effective evaluation. Indeed, Lewise and Thornhill's (2006) research has shown that organisations with open and questioning cultures who are willing to explore their weaknesses are capable of generating successful evaluations. This paper will not discuss culture change in any depth as it is out with the scope of this article. However, it would be highly beneficial for a formal organisational culture audit as a good deal of research and theory cites organisational culture as a reason for the failure of successful training and evaluation.

- politics

Organisational politics play a large role in the perceived lack of evaluation in Bank. Linked to a historically non-questioning and reactive

culture, evaluation is viewed by many as a threat. At the organisation-wide level, all of the consultant's trainees linked it then the course is seen as efficient and has done its job. Within bank, human resource has a large budget and is not prepared to push on the leadership population. They do not want to rock the boat and risk having their budget downsized if they fail to demonstrate value. This is common in a range of organisations. Pepper (2012) has termed this occurrence as the inhibiting effect of authority. He maintains that even though organisations have gone to flatter structures, "there are strong hierarchical influences which persuade most people, including training officers, not to overdo their arguments with their superiors, and not to devise an examination of results which could show those superiors to be wrong" (Pepper, 2012, p.100).

While politics plays a role in the lack of evaluation, it also can skew and influence evaluation when it does take place. Even informal chats and observations in the workplace are not immune to the influence of politics. One consultant noted that while chats and observations are useful, they need to be carried out by someone who is not seen as having a vested interest or replies will often be what you want to hear rather than reality. He then relayed an example where he witnessed a chat and observation carried out by management which did not give a true result. Politics play a massive role in the third and fourth level evaluations.

Conclusion and Recommendations

A. The data shows that the bank adheres to Kirkpatrick model but is unable to successfully complete all four levels consistently. In order for level three to be successfully completed, a shift in the role of the manager would be necessary to share the responsibility of evaluation. Level four is harder as it would require a major shift in approach.

B. It was found that the current structure both helps and hinders evaluation. Evaluation is helped by the close working relationships the consultants have with their customers or managers. However, because of the vertically aligned structure, cross-department communication was described as 'patch.' Due to the lack of communication, best practice and ideas cannot be shared, elaborated upon or critiqued.

C. The difficulty with evaluation is compounded by the fact that while they adhere to Kirkpatrick model, there is no standardised form, process or expectation for implementing evaluation for the L&D department. From the information gathered in this research, it is evident that evaluation takes place in different forms and at different levels depending on L&D division. All consultants utilised the Nsurvey for level one; however, after that the form of evaluation changes depending on department. Aside from questionnaire, other forms of evaluation include informal conversations, focus groups and follow-up questionnaires. Even though these exist, they are used sporadically and in different ways depending on the department. Therefore, a formal direction or policy from HR or senior members in L&D would create consistency across the board, allowing for comparison and increasing expectations of the consultants to carry out evaluation.

D. The research has also cited organisational culture as one of the reasons behind the inability to consistently evaluate higher than level one. Because training programmes are a tool which can alter, restructure or reinforce the Bank culture, it may be beneficial for a more in depth study to be conducted to define their organisational culture. Once defined, the consultants can analyse the effect it has on evaluation and more generally L&D activities. Conscious acknowledgement of organisational culture and the need to re-evaluate how it helps and hinders L&D would make the department more effective and efficient in their programmes and evaluation. Additionally, the conception of the role L&D plays in the organisation needs to be explicitly changed from a reactive enabler of employees to a proactive generator of knowledge, skills and abilities. This requires a shift in focus. L&D needs to be able to demonstrate the value they add more effectively. In order to do this, the need to be more proactive and take ownership on this, not wait for a culture change or for a lead for this to come from anyone else in the organisation.

E. Closely related to culture, political plays a large role in the perceived lack of evaluation. There is nothing outright that L&D can do to

change organisational politics, as they will always exist. However, if the managers were more involved in the process, they may not feel threatened and L&D may feel less threatened since the burden of evaluation would be shared.

F. Continuing with the role of manager, it was widely acknowledged that the managers do not actively share in the responsibility for evaluation. Communicating the role and contribution that line managers can make through their involvement in evaluation can help to bridge the gap between level two and three evaluations. The new L&C behavioural frameworks mentioned in the organisational setting provide key performance indicators making the quarterly reviews and ideal setting measuring applied learning and behaviours back in the workplace. Evaluation needs to be actively acknowledged as a shared responsibility.

References

Alliger, G & Janel, E. (1989). Kirkpatrick's Levels of Training Criteria: Thirty Years Later, *Personnel Psychology* (42) 3, p. 331-342.

Al-Tarawneh. (2009). Training and Development Evaluation in Jordanian Banking Organisations, *Research and Practice in Human Resource Management*, 2009, 17 (1), 1-23.

Arie de Geus.(1997). *The Living Company*. Longview Publishing: London.

Bates, R. (2004).A critical analysis of evaluation practice: the Kirkpatrick model and the principle of beneficence, *Evaluation and Programme Planning* (24), p.341-347.

Bee, R & Bee, F.(2010). *Training Needs Analysis and Evaluation*, (2 ed.). CIPD: London.

Blanchard, P.N & Thacker, J. (2004). *Effective Training: Systems Strategies and Practices*, Prentice Hall: New Jersey.

Bramley, P & Kitson, B. (1994). Evaluation Training against Business Criteria, *Journal of European Industrial Training* (18) 1, p. 10-14.

Buckley, R & Caple, J.(2014). *The Theory and Practice of Training*. (3 ed.) Kogan Page: London.

Cannon-Bowers, J., Salas, E., Tannenbaum, S., & Mathieu, J (1995). Toward theoretically based principles of training effectiveness: a model and initial empirical investigation, Military Psychology 7, p. 141-164.

Central Bank of Libya. (2008a). *Annual report no. 52nd, (2007)*. Musrath, Libya: Central Bank of Libya.

Chapman, A. (1995). "Kirkpatrick's learning training and evaluation theory", Accessed 21 June 2015, available from http://www.businessballs.com.

Clarke, A. (2013). *Evaluation Research: An Introduction to Principles, Methods and Practice*, (2 ed.). SAGE Publication: London.

Easterby-Smith (2011). *Evaluation Management Development, Training and Education*, (3 ed.). Gower: London.

Easterby-Smith, M, Thorpe, R, and Lowe, a (2002). *Management Research*: An introduction, SAGE Publications: London.

Gumhouria Bank. (2008). Gumhouria Bank. Retrieved 25 July 2008, from http://www.gumhouria-bank.com.ly/

Gumhouria Bank. (2008b). *The guide of new organisational structure of* Gumhouria Bank *in December 2008*. Tripoli: Libya: Gumhouria Bank.

Gumhouria Bank. (2010). Gumhouria Bank. Retrieved 21 April 2010, from http://www.gumhouria-bank.com.ly/arabic/pages/frame.php

Gumhouria Bank. (2010). Gumhouria Bank. Retrieved 4 May 2010, from http://www.gumhouria-bank.com.ly/arabic/pages/index.php

Hamblin, A. (2010). *Evaluation of Control and Training*, (4 ed.). McGraw Hill: London.

Harrison, R. (2015). *Learning and Development*, (3 ed.). CIPD: London.

Hashim, J. (2001). Training evaluation: client' role. *Journal of European Industrial Training*, 25(7), 374-379.

Hatton, A. (2003). Adding Heart to your Evaluation, *Industrial and Commercial Training* (35) 5, p. 210-216.

Holton, E. (1996). The flawed four level evaluation model, *Human Resource Development Quarterly* (7)1, p. 5-21.

Kirkpatrick, D.(1999). *Evaluation Training Programmes*, (2 ed.). Brett-Kohler Publishers: San Francisco.

Lewis, P. & Thornhill, A.(2006). The Training Evaluation of, *Journal of European Industrial Training* 26(8), p. 241-251.

Mann, S. & Robertson, I. (1996). What should training evaluation evaluate? *Journal of European Industrial Training* 20 (9), p. 14-20.

Mumford, A. & Gold, J. (2004). *Management Development: Strategies for Action*, CIPD: London.

Newby, A. (2011). *Training Evaluation Handbook*, (3 ed.). Gower: London.

Patton, M. (2009). *Practical Evaluation*, (5 ed.). SAGE Publications: California.

Patton, M. Q. (1997). *Utilization-Focused Evaluation* (3 ed.). Thousand Oaks, Calif: Sage.

Pepper, A.(2012). *Managing the Training & Development Function*, (4 ed.). Gower: London.

Phillips, J. (2010). *Handbook of Training Evaluation and Measurement Methods*, (2 ed.). Butterworth-Heinemann: Massachusetts.

Russ-Eft, D., & Preskill, H. (2001). *Evaluation in organisations: A systematic approach to enhancing learning, performance, and change*. New York: Basic Books.

Sloman, M.(2009). *A Handbook for Training Strategy,* (3 ed.). Gower: London.

Stake, R. (1995). Case Studies in Denzin, N & Lincoln, Y (eds.) Handbook of qualitative research, SAGE Publications: California, p. 236-247.

The report (2008). *Libya 2008*. Oxford: Oxford Business Group.

The report (2010). Libya 2010. Oxford: Oxford Business Group.

Wang, G. (2003). Value learning: the measurement journey, *Educational Technology*, 1(43), p. 32-37.

Walton, J. (2012). *Strategic Human Resource Development*, (2 ed.). Prentice Hall: London.

Woodside, A., & Wilson, E. (2003). Case study research methods for theory building. *Journal of Business and Industrial Marketing,* 18(6, 7), 493-508.

نظام الوكلاء المتعددين لمتابعة الواجبات الدراسية

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الملخص:

متابعة واجبات الطالب (المنزلية) هو جزء مهم من الروتين اليومي لجميع الأساتذة. تقليديا، يتم إعداد الواجبات من قبل الأستاذ في شكل ورقي ثم تعطى للطلاب. عندما يتم جمع الحلول، تعطى للمصححين (أي المعيدين) الذين يقومون بتصحيح حلول الواجبات ورصد الدرجات في ملف علامة الطالب وإعادة الواجبات للطلاب بملاحظاتهم. مع ظهور الجامعات المحسوبة، كانت هناك محاولات عديدة لاستخدام أجهزة الكمبيوتر لميكنة بعض المهام المذكورة أعلاه.

المشكلة الرئيسية لخلق بيئة افتراضية على شبكة الإنترنت هو نمذجة المجال التقليدي وتنفيذ النموذج باستخدام التقنيات الأكثر ملائمة.

في هذه الورقة، نقترح نظام التصحيح المعتمد علي تقنية أنظمة متعدد الوكلاء، MAMS. مفهوم التصميم هو استخدام برمجيات الوكلاء الذكية لمساعدة الأستاذ في متابعة واجبات الطالب المنزلية. وجدنا أن منصة JADE تكون التكنولوجيا الأكثر مناسبة لتحقيق هدفنا.

Multi-Agent Assignment Maintenance System

Dr. Kamal Ali Albashiri

Abstract-

Maintenance of student assignments (homework) is an important part of everyday routine of all instructors. Traditionally, assignments are prepared by an instructor in paper form, and then given to students. When student solutions are collected, they are given to markers (e.g. teacher assistants) who upon marking update student mark files and return marked assignments to students. With the advent of computerized campuses, there have been various attempts to use computers to automate some of the tasks described above. The main problem to create a Web-based, virtual environment is to model the traditional domain and to implement the model using the most suitable technologies.

In this paper, a decentralized Marking System based on Multi-Agent technology, MAMS, is proposed. The design concept is to use intelligent agent community to help the instructors maintenance student's assignments. We found that JADE platform to be the most suitable technology to achieve our goal.

Keywords- agent, multi-agent systems (MAS), assignment, applet, JADE.

1. Introduction

Distance education systems based on the Internet do not have any time or space constraint. Students can interact with the system anytime, anywhere. The available tools enable the communication between students and

instructors very easily and allow quick feedback. Students and instructors can share information. Excellent teaching strategies may be taken through the available resources over the web, all over the world. Nowadays, it is possible to have access and display broad and advanced knowledge. Students can decide what, how and when to learn, favoring teaching methodologies focused on the student and with an explorative and constructivist basis.

However, there are not only advantages in the www-based teaching. Some important aspects should be considered. Most of distance education systems based on the web are not intelligent or adaptable. Students usually get lost when they need to navigate choosing paths among the labyrinths of links displayed in HTML pages. Web pages by themselves are not a teaching system. It is very hard for the student alone to get material that is of his/her interest, amid the great deal of material available.

Multi-Agent Systems (MAS) often deal with complex applications that require distributed problem solving. In many applications the individual and collective behavior of the agents depends on the observed data from distributed sources. MAS are communities of software entities, operating under decentralized control, designed to address (often complex) applications in a distributed problem solving manner. MAS offer a number of general advantages with respect to computer supported cooperative working, distributed computation and resource sharing [1].

In this paper we describe a decentralized, integrated, and Multi-Agent Marking System, (MAMS) which can be used to post assignment\homework descriptions and submit solutions, mark solutions using specialized marker tools, and maintain student marks using a file system or database.

Our main goal was to design a system which is user friendly, distributed, and decentralized. For a system to be user friendly, our design uses

specialized graphical user interfaces, GUIs. These GUIs are custom made for various kinds of users; and will appear different for students, markers and instructors.

MAMS consists of a number of agents, and is fully distributed so that users can connect from networked computers. However, MAMS supports not only pulling information such as an assignment outline, and online access such as displaying marks or outlines but also pushing information on to a client's machine so that she or he can work off-line (for example, to mark an assignment, the marker does not have to be connected to the network). Off-line work is particularly useful if the system is flexible and extensible; for example a marker should be able to use various specialized marking tools, implemented in different programming languages.

We do not wish to limit ourselves to specific hardware or an operating system; for instance, we want to be able to accommodate a student who uses Unix on a PC, and a marker using a Macintosh. For this reason, we are using JADE (Java Agent Development Environment) [2] Architecture, that extends the reach of our applications across networks, languages, component boundaries, and operating systems. JADE is a software environment, fully implemented in the JAVA programming language.

Why have we chosen Java rather than another language? A standard web browser is extended with a Java runtime, and it can automatically download an agent to the user's host computer and execute it there. This feature provides a simple and flexible mechanism for transferring executable software to users when it is actually needed, instead of installing it at their host or site ahead of time. Therefore web-based infrastructure and JADE can simplify the job of deploying the user components of a distributed application; something hardly possible with other languages.

Since maintenance of student files is an important part of any marking system, we designed a flexible interface that can be used to store marks, users, courses and assignment information in a file system, or through Java Data Base Connection, JDBC in practically any available data base. Therefore, MAMS is designed as a 3-tier application where we have a thin-client, middleware (JADE) and a database.

Clearly, only authenticated users should be allowed to use a marking system. Therefore, a "super-user", who creates student, marker and instructor password-protected accounts, administers MAMS.

The rest of this paper is organized as follows. Section 2 provides an overview of related work in the field of distance learning; Section 3 describes JADE platform; MAMS specification is described in Section 4; Section 5 briefly describes the design and the implementation of MAMS; Section 6 describes MAMS protocols and behaviours. Finally, Section 7 discusses conclusions and future extensions.

2. Related Work

MAS have shown much promise for flexible, fault-tolerant, distributed problem solving. Some MAS frameworks focus on developing complex features for specific tasks, without attempting to provide much support for usability or extendibility. The success of peer-to-peer systems and negotiating agents has engendered a demand for more generic, flexible, robust frameworks [3].

The state of the art in intelligent learning Environments fields points to the use of Agent-Based Architectures. The fundamentals of the Multi-Agent systems have demonstrated to be very appropriate to design tutoring systems, since the teaching-learning problem could be handled in a cooperative approach.

Several projects implement learning systems based on distance architectures. Some of them work on a generic platform. Generally Java language used the web-based environment and occurred the CORBA platform [4] [5] [6] [7] [8] [9].

These systems are centralized and do not provide the same functionality, flexibility and extendibility that MAMS offer. For instance, the latter system does not support off-line activities, or use of arbitrary implementation programming languages.

Using Multi-Agents Systems approach to design distance learning systems can result in more versatile, faster and at lower costs systems [10] [11] [12]. The introduction of AI techniques and, specifically, the use of Multi-Agents architecture in these environments aim to provide student-modeling mechanisms [13] [14]. We believe that these concepts can be used in modeling and implementation of intelligent distance learning platforms aimed at helping programs in educational institutes.

3. JADE

The key difference between most development toolkits lie in the implementation and architecture of the provided communication and agent functionality.

When selecting a toolkit to build some desired MAS developers should make their decision based on the MAS goals and services that are desired. Any potential toolkit should also be evaluated for potential problems related to the toolkit's strengths and weaknesses prior to any decision being made.

JADE was chosen for the proposed MAMS framework development. JADE was selected for a variety of reasons as follows:

- JADE is both popular and regularly maintained (for bug fixes and extra features).

- It was developed with industry quality standards.
- The tool kit covers many aspects of MAS, including agent models, interaction, coordination, organization, etc.
- It is simple to set-up and to evaluate. This includes good documentation, download availability, simple installation procedure, and multi-platform support.
- It is FIPA-compliant. FIPA is the Foundation for Intelligent Physical Agents [3].

Some of the reasons that these other platforms were avoided included [15]:

- That they were still in an experimental state, abandoned, or confidentially distributed.
- Very little documentation was associated with them.
- They covered only one aspect, or a limited number of aspects, of MASs; such as single agent platforms, mobile agent platforms, interaction infrastructures toolkits.
- They were found to be too short on some construction stages, for example purely methodological models.

As noted above JADE is a software environment, fully implemented in the JAVA programming language, directed at the development of MAS. The goal of JADE is to simplify the development of MAS while at the same time ensuring FIPA compliance through a comprehensive set of system services and agents. While appearing as a single entity to the outside observer, a JADE agent platform can be distributed over several hosts each running an instance of the JADE runtime environment. A single instance of a JADE environment is called a container which can "contain" several agents as shown in Figure 1. The set of one or more "active" containers is collectively referred to as a platform (as indicated by the dashed perimeter line in Figure 1). For a platform to be active it must comprise at least one active container; further containers may be added (as they become active) through a registration process with the initial (main) container. A JADE platform includes a main container (the middle container in Figure 1), in which is held

a number of mandatory agent services. These are the Agent Management System (AMS) and Directory Facilitator (DF) agents.

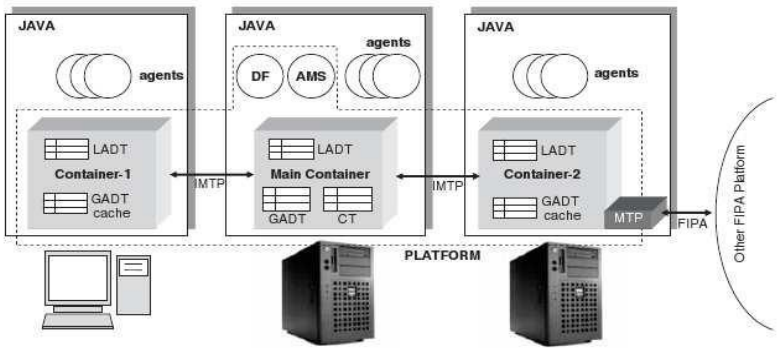


Figure.1 : JADE Architecture (Bellifemine et al., 2007) [2]

The AMS agent is used to control the life-cycles of other agents on the platform, while the DF agent provides a lookup service by means of which agents can find other agents. When an agent is created, upon entry into the system, it announces itself to the DF agent after which it can be recognized and found by other agents.

Within JADE, agents are identified by name and communicate using the FIPA Agent Communication Language (ACL). More specifically, agents communicate by formulating and sending individual messages to each other and can have "conversations" using interaction protocols that range from query request protocols to negotiation protocols. JADE supports three types of message communication as follows:

1. Intra-container: ACL message communication between agents within the same container using event dispatching.
2. Intra-platform: Message communication between agents in the same JADE platform, but in different containers, founded on RMI.

3. Inter-platform: Message communication between agents in different platforms uses the IIOP (Internet Inter-ORB Protocol).

The latter is facilitated by a special Agent Communication Channel (ACC) agent also located in the JADE platform main containers.

4. MAMS specifications

4.1. Assignment Maintenance

Let's first identify the basic activities in the assignment maintenance process, as well as actors involved in this process:

Hand-out: Assignment outline is provided by the *instructor*

Hand-in: Assignment solution is provided by every *student*

Marking: Assignment solutions are marked by the *marker*

Return: Marked solutions are returned by the marker to students.

Since every user involved must be properly authenticated by the system, she or he has a password-protected account, and therefore we provide one more type of an actor; a *super-user* who is the only user allowed to create, modify and remove accounts. Since there are four types of actors, we have four types of agents. For a hand-out activity, the assignment outline is uploaded to an assignment agent, and it is downloaded from by a student agent to the student's machine.

For a hand-in activity, an assignment solution is uploaded by the student agent, and downloaded by the marker agent to the marker's machine. For a return activity, marked assignments are uploaded by the marker agent, and then they can be downloaded by the student agent. (See below for detailed descriptions of different actor agents.) Note that the network connections are minimized, and used only when necessary. As soon as the process of

uploading or downloading is completed, the user can work off-line.; in particular, the marking activity requires no network connection.

4.2. MAMS Actors

4.3. Super-User

The super user can carry out the following activities:

- create, delete and modify user (instructor, marker or student) accounts

- create, delete and modify course accounts

- register and drop courses to and from user accounts.

- set client connection time to limit server overload

- purge or archive old submissions and limit file sizes for submissions.

Courses may be taught by more than one instructor or marker. The super user assigns instructors to courses. Markers are initially assigned by the super user but instructors can modify them at any time.

4.4. Instructor

The instructor can prepare an assignment description off-line or on-line. Assignment descriptions must be loaded in a text format so that it can be viewed on-line on the student GUI text area. To prevent instructors from uploading files that are not in text format, we limited their off-line option, and only a cut/paste technique for uploading assignment descriptions can be used.

4.5. Marker

Marker can download students assignment solutions through his/her GUI. Marker cannot download solutions that have already been downloaded. Courses may have more than one marker so it is left to the markers to divide the solutions among them. Solutions will be saved in the marker drive as a

tree-like structure, starting with root directory (the course name), student name and the assignment name.

Once the assignment solutions are downloaded, the marker can disconnect from the network and at her or his convenience, and mark assignments off-line. For this sake, specialized marking software can be used (not available as a part of the current version of MAMS). For example, a single programming assignment in C may consist of many files, but is submitted as a single jar file. This file will include the "packing information"; for example, under Unix it may be required that the assignment source files come with the make program. This packing information and other specifications can be specified for each assignment by the instructor and be available for the marker to download as a text file. Therefore, we need a *preprocessor* that retrieves and accordingly unpacks the assignment (for the above Unix scenario, it will use make to create executable code). The preprocessor may also run the executable code against test input data, if provided, and inform the marker about the results of these runs.

When marking is completed, the marker moves to the next solution, and the editor saves the annotated solution along with the mark. Then, when the marker uploads the assignments to MAMS, the annotated solution and the mark become available to the students, and additionally the mark is saved in a central repository on databases.

Markers can upload marked solutions the same way as they download solutions; and specify the location of the root directory. The system will automatically upload all marked solutions and show them in a separate window for submission.

4.6. Student

The student's GUI looks somewhat similar to the marker's GUI, but provides slightly different functionality. Specifically, the student can download assignment outlines, marked assignments or marks. Students can uploaded assignment solutions and also can view marks or outlines on-line; and she or he can submit an assignment solution. Note that the student is allowed to submit late assignments (it is left to the marker and the instructor to deal with this problem), but is not allowed to submit the same assignment more than once.

5. System Architecture and Implementation

MAMS consists of the two coordination agents and four service agents; as shown in Figure 1. It has been implemented using Multi-agent technology, specifically JADE. The system maintains various persistent data, such as account information, assignment descriptions, marked assignments, and student marks.

Figure 2 presents the MAMS architecture as implemented in JADE. It shows a sample collection of several application agents and housekeeping agents, organized as a community of peers by a common relationship to each other, that exist in a set of containers. In particular the main container holds the housekeeping agents (an Agent Management Framework (AMS) agent and a Directory Facilitator (DF) agent). These are specialized server agents responsible for facilitating agents to locate one another.

In order to allow different storage mechanisms, MAMS provides clearly defined interfaces, which can be used to configure it with a file system or through JDBC with any database. Note that because of this approach all back-up and clean-up operations can be performed by MAMS and are transparent to the user.

Every user can communicate with MAMS through what we call here a user agent, which can appear in as a Java applet as shown in Figure 3. Therefore, there are three types of user agents, one for each type of an actor; and every agent can be accessed as an applet through a web browser. Using an applet the actor merely requires a web browser and does not have to go through the installation process of JADE. The JADE system proved to be a very good solution since it offers the possibility for agents to live on the client's machine without them needing more than a Java enabled web browser to be installed on that machine.

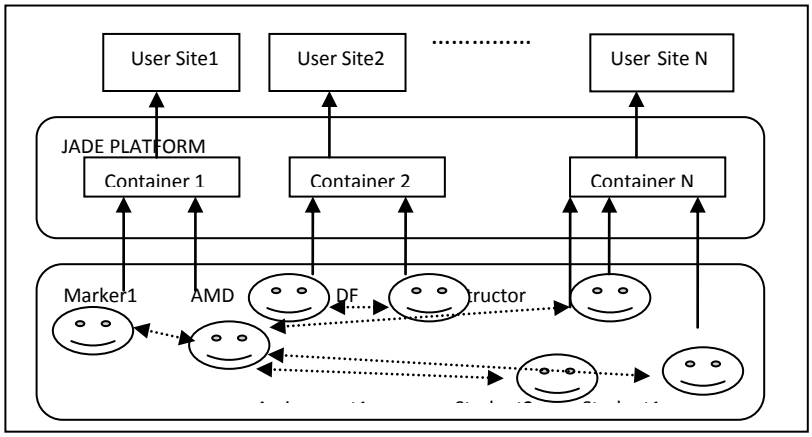
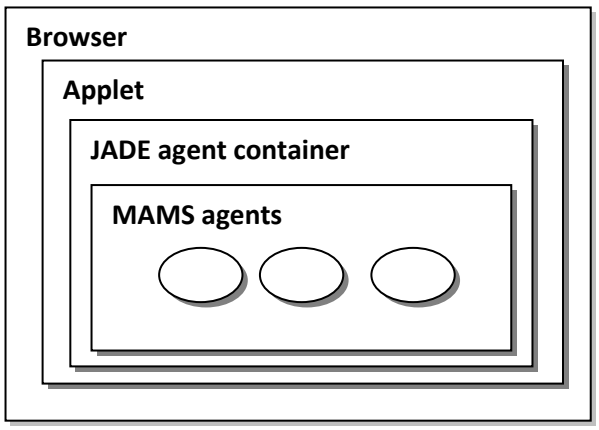


Figure.2 : MAMS Architecture as implemented in JADE

The adopted solution was to create an applet on the client's browser. Using the JVM, created by the browser to run the applet, a new agent container is created on the client's machine using JADE API calls. However, in some cases this applet has to be able to access the user's file system. For example, the student's agent has to write to the student's machine when an assignment outline is to be downloaded; and it has to read from the file system when an assignment solution is to be uploaded. Therefore, we use digitally signed applets, see [16], which provide a secure way of giving applets access to the local machine file system.

Figure.3: JADE Agent Container on client's machine



In general, it is convenient to think of an MAMS agent as formed by three interacting software modules: (i) the interface module,

(ii) the process module and (iii) the knowledge module. Note that modules are only included when they are needed.

5.1. MAMS Agents

The following subsection describe the structure and function of each agent from a high level perspective and in terms of the three identified software modules.

The subsection also discuss the design decisions that were made and why they were made. The agents are considered in the same order as they might be utilized

to process a MAMS' user request in order to illustrate how each agent's function fits into the system's overall operation and contributes to

supporting the other agents. A brief overview of the various categories of end users is also presented.

5.1.1. User Agent

There are four essential operations that a user agent must be able to undertake:

1. Receive and interpret user requests.

2. Communicate the user request to the processing agents.

3. Return the generated results, in a suitable and easily understandable format, back to the user.

4. Expect and respond to asynchronous events, such as "a stop downloading" or "end operations" instructions that may be issued by the user.

A user agent is also required to have the knowledge needed to translate information from the user to a format that processing agents can understand and vice-versa.

The user agent is the only agent that interacts with the user. It asks the user to issue requests, passes them to the system, and provides the user with results. The user agent's interface module contains methods for inter agent communication and for obtaining input from the user. The interface module may provide access to (say) visualization software, that may be available to show results, or to other post-processing software.

The process module contains methods for capturing the user input and communicating it to other agent. The process module may contain methods to support ad-hoc and predefined reporting capabilities, generating visual representations, and facilitating user interaction.

In the knowledge module, the agent might store the history of user interactions, and user profiles with their specific preferences. The knowledge module stores details about report templates and visualization primitives that can be used to present the result to the user.

5.1.2. Registration Agent

The general excepted function of the registration is to inform all appropriate agents that are already in the system and interested of a new agent arrival. When any new agent is introduced into the system, it must first inform the registration agent that it has entered.

It should also be the first agent created and started in the system. Because the system cannot operate without a broker agent as well, the registration agent will initiate all methods, and then await a broker agent to enter the system. Once notified a broker has entered the system, it completes initialization and waits for a registration request from any new agents. When a new agent enters the system, it sends a registration request message to the registration agent. When it receives notification of a new agent, the registration agent will determine the functions the agent can perform by the information transmitted in the registration message.

5.1.3. Facilitator Agent (or Broker Agent)

The facilitator agent serves as an advisor agent that facilitates the distribution of requests to agents that have expressed an ability to handle them. This is performed by accepting advertisements from supply agents and recommendation requests from request agents. The facilitator agent keeps track of the names and capabilities of all registered agents in the framework. It can reply to the query of an agent with the name and address of an appropriate agent that has the capabilities requested. Its knowledge module contains meta-knowledge about capabilities of other agents in the system.

In general, any agent in MAMS can use the facilitator agent to advertise their capabilities in order to become a part of the agent system (what is known as a "yellow pages" service). When the facilitator agent receives notification of a new agent who wants to advertise its services; it must add this new agent's identifier and its capabilities to the list of available system agents. For instance, to look for an assignment solutions, the marker agent must "talk to" the facilitator agent, asking which assignment agents can fulfill the given request.

The facilitator agent maintains all information on the capabilities of individual agents in the system and responds to queries from user agents as to where to route specific requests. By requesting only those agents who may have relevant information, the user agent can eliminate tasking any agents that could not possibly provide any useful information. However, it should be noted that the facilitator agent does not maintain full information about the agents in the system, only their high level functionality and where they are located.

5.1.4. User Agent

A user agent is responsible for the activation and synchronization of the various MAMS agents required to generate a response to a given user request. Individual categories of user agent dedicated to different operations have been identified; the various categories are students, markers, and instructors.

A user agent performs its task by first generating a work plan, and then monitoring the progress of the plan. User agents are designed to receive requests from users and seek the services of groups of agents to obtain and synthesize the final result to be returned to the user agents.

The agent interface module is responsible for inter-agent communication; the process module contains methods for the control and

coordination of the various tasks. A user agent may be required, when generating a response to a request, to: identify relevant agents, request services from agents, generate queries, etc. The knowledge module contains meta-knowledge about assignment maintenance tasks, i.e., what steps are required for what type of task, input requirements for each of the tasks, etc.

Once the user agent has received a user request, it determines, according to the information passed to it and through contact with the facilitator agent, what other agents are required to generate a response to the request. The nature of a received request can dictate one of two possible types of action: (i) performance of a downloading task, or (ii) uploading task. These user desires will be passed to the user agent in the form of a request from the user.

In the first case the user agent will ask the facilitator agent for agents which can fulfill the desired tasking. For instance, if the marker wants all possible assignments solutions, then the marker agent will contact the appropriate assignments agents with this request. The marker agent accepts the result from each individual assignment agent and stores it in its knowledge base. Once the task is completed, the marker agent combines the results to provide a single result before passing it to the user. Note that in some cases there may be only a single result in which case there will be no requirement to combine results.

The second case may occur where the student wishes to upload his/her assignment solution. In this case, the student agent will initiate a new assignment agent with the uploaded solution, then advertize its service with the facilitator as his/her assignment solution, so that can be found by the marker agent.

5.1.5. Assignment Agent

An agent contains a specific assignment solution or outline; as such a agent can be said to "hold" a solution or outline. The interface module supports inter-agent communication. The process module contains methods for initiating and carrying out the maintenance activity of communicating it to a student agent or a marker agent. The knowledge module contains meta-knowledge about the assignment, i.e. what course is suitable for what type of solution, format of input data, etc.

An assignment agent accepts a request, from a user agent, and initiates the task using the values contained in the request. As the request runs, the assignment agent may make requests for downloading/uploading to user agent's site. The assignment agent continues until it has completed its task, i.e. generated a result to the presented request, and then returns the results to the user agent to be passed on to the MAMS end user who originated the request.

6. Mapping MAMS Protocols To JADE Behaviours

Many important design issues were considered while implementing MAMS within the JADE framework; including:

1. ACL Messages (protocols, content).

2. Data structures.

3. Algorithms and software components.

The ACL messages were defined with respect to the JADE ACL Message class fields [2] and the FIPA ACL Message Structure Specification [3]. The procedure to map the MAMS agent interaction protocols to JADE behaviours was found to be relatively straightforward. MAMS agent activities and protocols were translated to a number of predefined JADE behaviours (defined in terms of methods contained in the JADE Behaviours

class) to either action methods or to simple methods of behaviours. Predefined JADE behaviours that were found to be useful to MAMS were:

- OneShotBehaviour: Implements a task that runs once and terminates immediately.
- CyclicBehaviour: Implements a task that is always active, and performs the same operations each time it is scheduled.
- TickerBehaviour: Implements a task that periodically executes the same operations.
- WakerBehaviour: Implements an atomic task that runs once after a certain amount of time, and then terminates.

6.1. Agent Interactions

A user agent, as shown in Figure 3, runs on the user's local host and is responsible for accepting user input, launching the appropriate agent that serves the user request, and displaying the results of the distributed computation. In this subsection the interaction mechanism between agents is reviewed.

The user expresses a task to be executed with a standard (GUI) interface dialog mechanisms by clicking on active areas in the interface, and in some cases by entering some attributes values; the user does not need to specify which agent or agents should perform the task. For instance, if the question "What is the outline of my assignment?" is posed in the student interface, this request will trigger (create and start) a student agent. The agent requests the facilitator to match the action part of the request to capabilities published by other agents. The request is then routed by the facilitator agent to appropriate agents (in this case, involving communication among all instructor agents in the system for the specified course) to execute the request. On completion, the results are sent back to the student agent for display and possibly download.

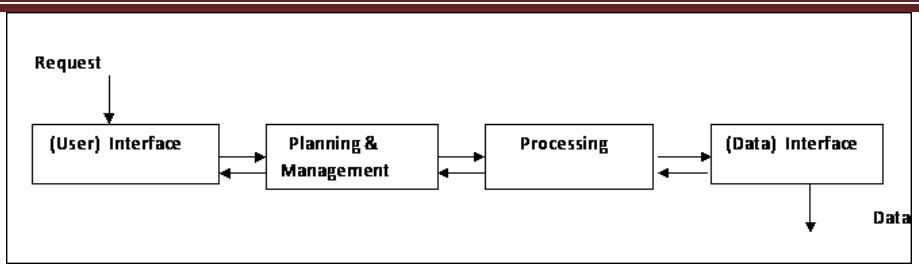


Figure.4: Request Handling Components

6.2. User Request Handling

Most current agent-based collaboration frameworks share a similar high-level architecture, and provide common request handling structural components, to that shown in Figure 4.

In MAMS, the user agent is designed to handle a user request. This involves a three step process:

1. Determination: Determination of whom (which specific agents) will execute a request.

2. Optimization: Optimization of the complete task, including parallelization where appropriate.

3. Interpretation: Interpretation of the optimized task.

Thus determination (step 1) involves the selection of one or more agents to handle each sub-task given a particular request. In doing this, the user agent uses the facilitator's knowledge of the capabilities of the available MAMS agents (and possibly of other facilitators, in a multi-facilitator system). In processing a request, an agent can also make use of a variety of capabilities provided by other agents. For example, a student agent can request data from instructor agent that maintains assignment outline.

The optimization step results in a request whose interpretation will require as few communication exchanges as possible, between the student agent and the satisfying agent, and can exploit the parallel processing capabilities of the satisfying agents. Thus, in summary, the interpretation of a task by a user agent involves: (i) the coordination of requests directed at the satisfying agents, and (ii) assembling the responses into a coherent whole, for return to the user.

7. Conclusion

This paper discussed the MAMS system, requirements, architecture, design and implementation. MAMS was envisioned as a collection of agents scattered over a network, accessed by a group of people that allow a user to be served without needing to know the location of the supporting agents, nor how the various agents interact.

In MAMS, as with most MAS, individual agents have different functionality; the system comprises: assignment agents, student agents, instructor agents, marker agents and a number of "house-keeping" agents. Users of MAMS may be data providers or data users.

The principal advantages offered by the system are that of experience and resource sharing, flexibility and extendibility, protection of privacy and intellectual property rights and information hiding. We believe that a good foundation has been established for both students and instructors in assignments maintenance processing. We believe that for MAMS implementation, JADE technology offered us the support we needed.

We considered future developments using JADE for implementing extending MAMS to be a complete e-learning system that provide more capabilities to students and instructors such as on-line lecturing and testing.

8. References

[1] Hameed, M.; Akhtar, N,; Missen, S., *Role Based Multi-Agent System for E-Learning*, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 7, No. 3, 2016**.**

[2] Bellifemine, F. Poggi, A. and Rimassi, G., *JADE: A FIPA-Compliant agent framework*. Proceedings Practical Applications of Intelligent Agents and Multi-Agents, pg 97-108. (See http://www.jade.tilab.com. for latest information).

[3] Foundation for Intelligent Physical Agents. FIPA 2002 Specification. Geneva, Switzerland, 2002. http://www.fipa.org/specifications/index.html.

[4] D. Gheorghiu, L. Stefan, A. Rusu, "E-Learning and the Process of Studying in Virtual Contexts". *In: M. I. a. L. C. Jain, ed. E-Learning Paradigms and Applications-Agent-based Approach (Studies in Computational Intelligence).* Berlin Heidelberg: Springer-Verlag, pp. 65-95, 2014.

[5] Capuano, N.; Marsella, M.; Salerno, S. *ABITS: An Agent Based Intelligent Tutoring System for Distance Learning*. In : Proceedings of the International Workshop in Adaptative and Intelligent Web-based Educational Systems. Available at http://virtcampus.cl-ki.uni-osnabrueck.de/its-2000/.

[6] Machado, I.; Martins, A.; Paiva, A. *One for All and All for One A learner modelling server in a multi-agent platform*. In: Proceedings of the Seventh International Conference on User Modeling, pp. 211-221, 1999.

[7] Silveira, R.A.; Bica, F.; Viccari, R.M. *JADE - Java Agents for Distance Education Framework*. In: Proceedings of the Third American Workshop on Distributed Artificial Intelligence and Multi-Agent Systems. Alvares, L.O., Bazan, A.L.(Eds.), Brazil, 2000. pp.112-122.

[8] Vassileva, J.; Greer, J.; McCalla, G.; Deters, R. *A Multi-Agent Approach to the Design of Peer-Help Environments*. In: Proceedings of AIED'99, Le Mans, France, 1999.

[9] Zapata-Rivera, J.D.; Greer, Smodel J., *Server: Student Modeling in Distributed Multi-Agent Tutoring Systems*. In: Artificial Intelligence in Education. IOS Press, 2001. pp.446-455.

[10] Pillaipakkamnatt, Krishnan, Wilkins, Dawn. *A Tool For Homework Submission Using the World Wide Web*. Webnet, Orlando, 1998.

[11] Cheikes, B. A. GIA: *Agent Based Architecture for Intelligent Tutoring Systems*. In: The CIKM Workshop On Intelligent Information Agents, 1995.

[12] Polycom, inc. (2010). *Polycom education solutions*.

http://www.polycom.com/solutions/industry/education/

[13] Adobe, inc. (2010). *Adobe Connect for education*.

http://www.adobe.com/education/products/connect.html.

[14] Silveira, Ricardo Azambuja. JADE - *Java Agent framework for Distance learning Environments*, Porto Alegre: PPGC-UFRGS, 2000. Doctoral Thesis.

[15] R. Bordini, L. Braubach, M. Dastani, A. Seghrouchni, J. Sanz, J. Leite, G. OHare, A. Pokahr, and A. Ricci. *A survey of programming languages and platforms for multi-agent systems.* In Proceedings of the IEEE International Conference on Cognitive Informatics, pages (33-44), 2006.

[16] Sun Microsystems. JDK 1.1.x Signed Applet [On-line]. Available:http://java.sun.com/security/signExample/

تقييم العناية بمرض السكري من النوع الثاني في مراكز الرعاية الصحية الأولية الريفية في ليبيا

✍.د.محمد الهادي السلاع
كلية الطب البشري

ملخص الدراسة باللغة العربية:

مع الانتشار الواسع لمرض السكري من النوع الثاني حيث يصاب 8% من البالغين بهذا المرض تهدف هذا الدراسة لتقيم العناية بمرض السكري من النوع الثاني في مراكز الرعاية الصحية الأولية في المناطق الريفية في ليبيا. اعتمدت الدراسة علي المنهج الوصفي وأجريت الدراسة بعيادة أمراض السكري وضغط الدم بمركز الرعاية الصحية الأولية أولاد محمود (قرية في شمال غرب ليبيا -300كم غرب العاصمة طرابلس عدد سكانها 2000نسمة) في شهر 6 -2012 وشملت مراجعة السجلات الطبية لعينة من 32 مريض سكري من النوع الثاني وقد اعتمد تقيم العناية بمرض السكري علي دراسة مؤشرات مختارة شملت قياس ضغط الدم وقياس السكري التراكمي وسؤال المريض حول أجراء فحوصات وظائف الكلي والدهون وكشف اعتلال الشبكية والكشف علي مضاعفات القدم السكري خلال السنة الماضية. أظهرت الدراسة أن 9 % فقط من عينة الدراسة لديهم سكر تراكمي أقل من الموصى به من الجمعية الأمريكية لمرض السكري (أقل من 7%) وكان المتوسط الحسابي للسكر التراكمي لعينة الدراسة هو 10% (الانحراف المعياري2) فيما يتعلق بضغط الدم أظهرت الدراسة أن 69% من عينة الدراسة لديهم ضغط دم مرتفع وأكثر من الموصى به من الجمعية الأمريكية للسكري (أقل من 130\ 80) وكان المتوسط الحسابي لضغط الدم الانقباضي هو138 مم زئبقي (الانحراف المعياري 23) في حين كان ضغط الدم الانبساطي هو 80 مم زئبقي (الانحراف معياري 8) فيما يتعلق ببقية المؤشرات أظهرت الدراسة أن لا أحد من عينة الدراسة أجري التحاليل اللازمة لوظائف الكلي أو الدهون أو أجرى الكشوفات اللازمة لشبكية العين أو مضاعفات القدم السكري خلال السنة الماضية. أظهرت الدراسة بوضوح القصور في العناية بمرض السكري من النوع الثاني في الأرياف مما يجعل مرضى السكري عرضة للمضاعفات في السنوات القادمة و توصي الدراسة ببعث برنامج وطني لمكافحة هذا الوباء من خلال أنشاء العيادات المتخصصة وتدريب أطباء الأرياف علي أتباع التوصيات الأكثر حداثة في متابعة ومعالجة مرض السكري

Evaluation of Type 2 Diabetes (T2 DM) Care in Rural Libyan Primary Care Centers

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Abstract:

This study aimed to evaluate T2DM care in rural Libyan primary care centers to determine whether diabetes care is compliant with the standards of diabetes care. This was a descriptive retrospective analysis of medical records aof a sample of 32 T2DM patients who attended diabetes and hypertension clinic at Aolad Mhaumad's primary care center during June 2012. Diabetes care in this study was evaluated by selecting the following indicators :1-blood pressure measurement . 2- glycated hemoglobin(HbA1c) measurement.3-Annul urinalysis for micro -albumineria.4- Annul eyes examination by ophthalmologist or optometrist.5- Diagnosis and treatment of dyslipidemia. 6- foot examination for diabetic complications . Study results show that only (3/32) 9 % of the study participants had glycated hemoglobin (HbA1c) < 7% which is the target goal for diabetic patients as per American Diabetes Association (ADA). The mean HbA1c was 10% (SD 2%). Sub-optimal control of blood pressure (BP>130/80 mm Hg) found in about (22/32) 69% of study participants. Blood pressure more than 160/90 was found in (11/22)50 % of those with high blood pressure. The mean systolic blood pressure (SBP) was 138 mm Hg (SD 23) and the mean diastolic blood pressure (DBP) was 80 mmHg with (SD8). Regarding other indicators included in the study, foot examination, annual testing for diabetic nephropathy and retinopathy as well as lipid profile performing were not recommended to any patient before establishing the clinic. This study showed clearly that T2 DM care in rural Libyan communities is sub-optimal from standards of care of diabetic patients. Therefore, urgent national diabetes program is crucial for further evaluation of diabetic care as well as targeting the high risk groups.

Keywords: T2 DM, Libya, rural, HbA1c

Introduction:

Diabetes mellitus in particular type 2 is a common disease with many catastrophic complications such as end stage renal disease (ESRD), blindness, and limbs amputation. It is also one of treatable risk factor of coronary and cerebral vascular diseases. In fact, annually, diabetes and related complications is responsible of around 5% of all deaths worldwide (1).The Diabetes international federation (IDF) estimated that in 2012 there were 317 million people (8.3% of adults) suffering from diabetes globally and diabetes management cost approximately US $ 471 billion (1, 2).

in Libya, even thought the aforementioned facts are well-recognized by health authority; implementing evidence-based interventions is difficult predominantly in the rural communities. People live in rural areas often encounter difficulties obtaining appropriate diabetic care. They live far from specialized diabetes centers with multispecialty teams. They also have financial limitations, cultural barriers, and high rates of health illiteracy. Additionally, primary care providers working in rural areas are relatively isolated from continuous medical education programs. They also have limited access to clinical information systems.

Currently, the studies that evaluate diabetes care in urban or rural Libyan regions are few. To the best of author's knowledge, the only one study evaluated diabetic care in urban Libyan areas was conducted in Benghazi, Libya in 2002.

We aimed in this paper to evaluate T2DM care in rural Libyan primary care centers .

Methods:

Study design and population:

This was a descriptive retrospective analysis of medical records of a sample of 32 T2DM patients who attended diabetes and hypertension clinic at Aolad Mhaumad's primary care center . Diabetes and hypertension clinic is a volunteer clinic established in June 2012 at Aolad Mhamaud primary care center. Aolad Mhamaud is a 2000 people town located in southwest of

Libya about 350 km from Libyan capital Tripoli. Diabetic and hypertension clinic runs every Monday and Thursday weekly.

Data for the study were retrieved from medical records created for each patient at the clinic. In addition to demographic features, medical records were designed based on components of diabetes care flowsheet. Six indictors were selected to evaluate diabetic care in our study. These indictors included Blood pressure measurement, glycated hemoglobin measurement, screening for diabetic retinopathy, screening for diabetic nephropathy , foot examination and testing and treatment of lipids

American diabetic association (ADA) as well as other diabetic management guidelines recommended that every diabetic patient should meet the following goals: 1-blood pressure less than 130/80 2-HBA1c less than 7%, 3- he or she also should have urine albumin –to- creatinine ratio (spot sample) to screen for microalbuminuria once per year 4- he or she should visit an ophthalmologist once or twice a year. 5- Any diabetic patient aged more than 45 should receive treatment for dyslipidmia despite lipid profile and those younger than 45 should be tested for dyslipidmia once or twice a year. 6-Monofilament and peripheral pulse examination annually or every visit to prevent lower extremities amputation. (3,4)

Statistical methods:

Statistical Package for Social Sciences (SPSS, version 15.0) was used for data analysis. Data were presented as means with (+-1) standard deviation (SD) and percentages.

Results:

The mean age study sample was 55 years (SD 11 years). Males comprised 63 % of the study population while females compromised the rest 37 %. 87% of subjects were originally from Aolad Mhamaud village and the rest 13 % were from neighboring towns. Table 1 displays the Socio demographic characteristics of study population.

Table 1: Socio-demographic characteristics of the study's sample

Variable			
Number of patients		**32**	**100%**
Age (mean+-SD)		**55 years+-11**	
Gender			
	Male	**20**	**63%**
	Female	**12**	**37%**
Education			
	Educated	**21**	**66%**
	Uneducated	**11**	**34%**
Town of Origin			
	Aolad Mhauamd	**28**	**87%**
	Neighboring towns	**4**	**13%**
Type of diabetes **medications**			
	Oral hypoglycemic agents	**9**	**28%**
	Insulin	**14**	**44%**
	Combined treatment	**4**	**13%**
	Unknown	**5**	**16%**

Study results show that only 9% of study population had achieved the target HbA1c <7%. HbA1c > 10% found in more than half of study participants (Fig1). Sub-optimal control of blood pressure (BP>130/80) found in about 69% of study participants. Blood pressure more than 160/90 was found in 50 % of those with high blood pressure (Fig 2) .

Figure (1) –Patients distribution according to the glycated hemoglobin (HbA1c)

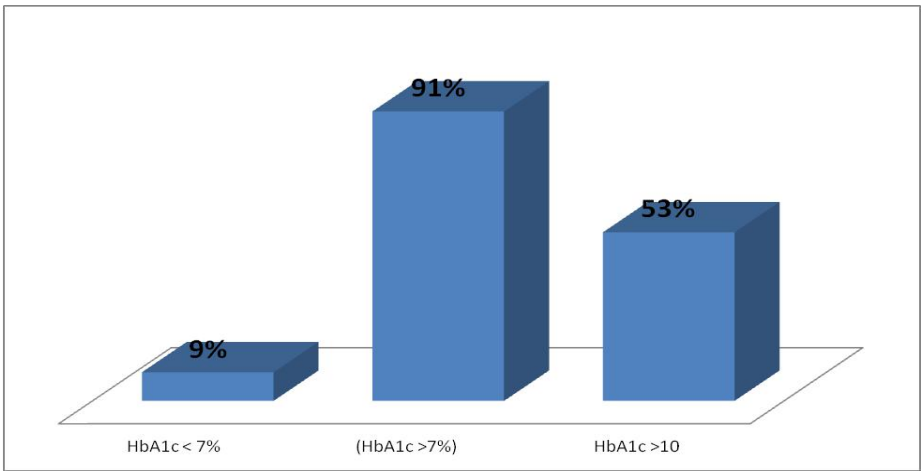

Figure (3): Patients distribution according to blood pressure(Bp)

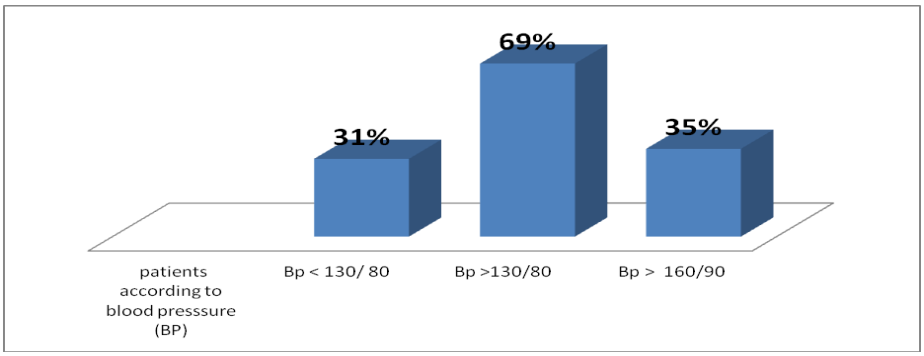

Table 2 summarizes the descriptive statistics (Mean and SD) of the HbA1c and blood pressure . the mean HbA1c was 10% (SD 2%) .The mean systolic blood pressure (SBP) was 137 (SD 22) while the mean diastolic blood pressure (DBP) was 80 mm Hg (SD 8).

Table(2): Descriptive statistics of glycated hemoglobin and blood pressure of study's sample

parameter	Target Goal	Sample range	Mean Value	SD
HbA1c	**<7%**	**6.4%-12.8%**	**10%**	**2%**
Systolic Blood Pressure (SBP)	**<130 mmHg**	**110-190 mmHg**	**138 mmHg**	**23mmHg**
Diastolic Blood Pressure(DBP)	**<80 mmHg**	**70-100 mm Hg**	**80mm Hg**	**7mmHg**

A study result also shows that screening for diabetic retinopathy, nephropathy, and lipids profile performing as well as foot examination were not
recommended to any study participants within last year. Before establishing the diabetic clinic at Aolad Mhumad primary care center, All diabetic patients refill their medications without neither regular check –up for their glycemic control nor recommended to any preventive services.

Discussion:

This study revealed inadequate care of diabetic patients in rural Libyan communities. It showed obviously that > 90% of study population had Hb1Ac > 7%. It also shows that inadequate SBP and DBP were found in 50% and 30% of participants respectively. Additionally, other preventive measures were not recommended to any participants.

Diabetes care still challenges both developing and developed countries. Many studies have showed inadequate care of diabetic patients. Study by Spann et al showed that the only 40.5% of study population had achieved the target glycolated hemoglobin (HbA1c) level (<7%) and only 35.3% of patients had controlled blood pressure (<130/85 mm Hg), whereas low-density lipoprotein cholesterol (LDL-C) levels <100 mg/dL only achieved in 43.7%. in different study by Saydah et al, only 37% of

participants achieved target of HbA1c < 7.0%, and only 35.8% had blood pressure ≤130/80 mmHg(5,6).The study findings are also similar to that conducted in urban Libyan regions. Roiaed and Kablan found that that almost half of the study participant never checked their blood pressure and none of study participants had Hb1Ac test (7).

Poor management of T2DM in rural Libyan primary care centers could be resulted from one or more of the following factors:1- most of rural primary care centers are operated by overseas health care providers who are relatively isolated from continuous medical education programs and have language barriers. For example, None of the patients who included in the study had been asked to check their Hb1Ac. Additionally, most of them were inadequately treated by Anti –diabetic drugs. 2-most of essential tests for diabetes are not available in rural primary care centers. Indeed, all patients included in the study required to travel more than 40 km in order to be tested for Hb1Ac. On the other hand, testing for dyslipidemia was impossible especially for LDL and HDL. 3-The high rate of health illiteracy in rural communities is another important factor. . For example, in our study, only one participant had knowledge about HbA1c before establishing the clinic .

Limitations:

. This study encountered some limitations. First, it carried out at only one institution and requires replication in other rural settings. Second, lack of any previous similar studies or national data for comparison. Lastly, numbers of participants were few to make good statistical inference.

Conclusion and recommendations:

In conclusion, diabetes mellitus in particular type 2 is a looming epidemic in the near future and rural inhabitants would be on the top-victims of this epidemic. This study showed clearly that T2 DM care in rural Libyan communities is sub- optimal from standards of care of diabetic patients. Therefore, urgent national diabetes program is crucial to prevent diabetes in the high risk groups. Also, it is essential to establish specialized diabetic clinic in all primary care centers and provide primary health care providers with all up-dates in management of diabetes.

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REFERNCES

1-International Diabetes Federation. *IDF Diabetes Atlas, 6th edn.* Brussels, Belgium: International Diabetes Federation, 2013

2-Shaw, J. E., R. A. Sicree, and P. Z. Zimmet. "Global estimates of the prevalence of diabetes for 2010 and 2030." Diabetes research and clinical practice 87, no. 1 (2010): 4-14.

3- Coon, Patricia, and Karen Zulkowski. "Adherence to American Diabetes Association standards of care by rural health care providers" Diabetes Care 25.12 (2002): 2224-2229.

4- Massey, Cynthia N., et al. "Improving diabetes care in rural communities: an overview of current initiatives and a call for renewed efforts." Clinical Diabetes 28.1 (2010): 20-27-

5-Spann, Stephen J., et al. "Management of type 2 diabetes in the primary care setting: a practice-based research network study." The Annals of Family Medicine 4.1 (2006): 23-31.

6- Saydah SH, Fradkin J, Cowie CC. Poor Control of Risk Factors for Vascular Disease Among Adults With Previously Diagnosed Diabetes. JAMA. 2004;291(3):335-342. doi:10.1001/jama.291.3.335

7-Roaeid, R. B., and A. HA Kablan. "Profile of diabetes health care at Benghazi Diabetes Centre, Libyan Arab Jamahiriya." (2007).

8- Dagogo-Jack, Samuel. "Primary prevention of type-2 diabetes in developing countries" Journal of the National Medical Association 98.3 (2006): 415..

9-Ko, Jocelyn, Rebecca Delafield, Jim Davis, and Marjorie K. Mau. "Characteristics of Patients with Type 2 Diabetes Mellitus in Two Rural,

Medically Underserved Communities." Hawai'i Journal of Medicine & Public Health 72, no. 6 (2013): 191

10-Johnson, Elizabeth A., Wanda L. Webb, Janet M. McDowall, Linda L. Chasson, Carrie S. Oser, Joseph R. Grandpre, Madhavi I. Marasinghe et al. "A field-based approach to support improved diabetes care in rural states." Preventing chronic disease 2, no. 4 (2005): A08-A08.