UNIVERSITI PUTRA MALAYSIA

ARABIC GRAMMAR EDUCATIONAL SYSTEM (AGES)

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Arabic Grammar Educational System

(AGES)

By

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Abstract

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September 2001

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In last few years, the computer technologies developed in dramatically
At the same time new high-level languages appeared, and multimedia
development All of these factors take out new applications to appear and
solve our real life problems

One of these languages is Visual Basic, which uses the visual
environment to design and run our systems, which make the programming
easier and application's interface more attractive to the user and developers,
in addition to possibility of using multimedia tools in the applications

One category of these visualized applications is educational systems,
which been recommended in high degree from the educational crew more
than unvisualized applications

There is a lot of educational systems that already appeared and used by global but unfortunately rare of these system devoted to learning Arabic Language to non Arabian students, specially in Arabic Grammar, which is difficult to understand.

Because all of these factors I'm going to develop an educational application that will give any non Arabian student, who studying Arabic language in advanced level one of the most important lessons in Arabic grammar by discussing the topic in details with an examples, and at the last the system will examine the student by multiple choice exam, and after the student finish his exam the student will be given his result from the system.

The system will be developed Using Visual Basic 6, by using the language tools and features, such as multimedia tools, Visual Basic scripts.

Abstrak

Sistem Pembelajaran Nahu Arab

By

Mohammad Noor A. M. Injadat

September 2001

Beberapa tahun kebelakangan ını, pembangunan teknologı komputer adalah dramatık Pada masa yang sama, muncul bahasa paras tınggı dan pembangunan multımedıa yang baru Faktor-faktor ını telah menyebabkan munculnya aplıkası baru untuk menyelesaıkan masalah

Salah satu darıpada bahasa-bahasa tersebut ıalah Vısual Basıc yang menggunakan persekıtaran vısual untuk merekabentuk dan melarıkan system Ia memudahkan pengaturcaraan dan antaramuka aplıkası menjadı lebıh menarık kepada pengguna dan pembangun Tambahan pula kemungkınan penggunaan alatan multımedıa dı dalam aplıkası

Salah satu darıpada kategorı aplıkası vısual ını ıalah sıstem pembelajaran, dı mana ıa lebıh tınggı dıcadangkan oleh krew pembelajaran darıpada aplıkası tanpa vısual

Terdapat berbagaı sıstem pembelajaran telah wujud dan dıgunakan secara global tetapı jarang terdapat sıstem yang menyumbang kepada

pembelajaran Bahasa Arab kepada pelajar bukan Arab, terutama sekali nahu Arab yang sukar difahami.

Faktor-faktor ini menyebabkan saya membangunkan aplikasi sistem pembelajaran yang akan membantu pelajar bukan Arab dan penuntut Bahasa Arab pada tahap tinggi. Salah satu pembelajaran yang penting di dalam Bahasa Arab ialah nahu Arab melalui perbincangan pelbagai topik bersama contoh. Akhir sekali, system akan menilai pelajar dengan ujian pelbagai pilihan. Setelah itu sistem akan memberikan keputusan kepada pelajar.

Sistem ini akan dibangunakn dengan menggunakan Visual Basic 6, penggunaan alatan bahasa dan keistimewaannya seperti alatan multimedia dan skrip Visual Basic.

Acknowledgment

I would like to thank all of those who stand beside me to let this work appear in real life.

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I'd like to say to my brothers "Nidal, Mo'awieh, and Khaldoun" thanks a lot my brothers for charging me to study and working hard to get the master degree, really my thankfulness for all of you.

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بسم الله الرحمن الرحيم

(وما أوتيتم من العلم إلا قليلا)

صدق الله العظيم

الإهداء والشكر

أهدي هذا الجهد المتواضع إلى:

- إلى من حلم أن يراني أنهي هذه الدرجة، إلى من تاق لهذه اللحظة، إلى المشجع والمعاون، إلى معلمي وأستاذي، إلى أغلى الرجال علي في هذه الدنيا، إلى بيت الحكمة والموعظة، إلى من ألجأ إليه في فرحي وحزني، إلى من حبب إلي العلم والمعرفة، إلى من يجلس في الأردن يدعو لي بالتوفيق ...   *إلى أبي الحبيب*

- إلى من حملتني في بطنها جنينا، ورعتني طفلا، وربتني صبياً، وصنعت مني رجلاً، إلى من سهرت الليالي لرعياتي، إلى من حضنها يدفئني شتاءً وينعشني صيفاً، إلى من أتوق شوقاً لرؤيتها قريبا، إلى من أرى بسمتها الآن أمام عيني وأنا أكتب آخر كلماتي في هذا العمل المتواضع فرحة بي وكأنها هي من أنهت العمل، إلى مصنع الرجال إلى معهد الأبطال إلى ست الحبايب ...   *أمي الحبيبة*

- إلى الأسدين القويين، إلى من لاعبوني و أنا طفل صغير، وصادقوني و نصحوني وأنا شاب، إلى من شجعوني لأصل لهذه المرحلة، إلى أعز الأخوة وأعز الأصدقاء الأوفياء...   *إلى أخواي الحبيبين نضال و معاوية*

- إلى من أتمنى له أن يصل لهذه المرحلة وأن يتعداها، إلى من يسير خطواته نحو النجاح، إلى الحبيب والصديق...   *أخي العزيز الأصغر خلدون*

- إلى بهجة عائلتنا، إلى ست البنات وأحلى البنات، إلى الغالية على قلبي، إلى دمعتها يوم وداعي ما زالت تسيل على قلبي، وكانت دمعتها الدافع لي لأعمل بجد لأنهي بأسرع وقت، إلى أختي الغالية والوحيدة، إلى الأميرة والملاك الصغير...   *أختي الحبيبة مرام*

- إلى الورود التي نفتح، إلى أطفال اليوم ورواد الغد، إلى النموع المضيئه...

إلى الأطفال نادين، أيهم، حمادة، احمد

- إلى صديقي ورفيق دربي وعمري، إلى الأخ والحبيب... **الصديق رامي سحويل**
- إلى من احترت كيف أشكره، و إلى احر عمري أبجله... **الدكتور محمد صالح**
- إلى من سهر معي وساعدني خلال هذا العمل... **الصديق علاء عبد الرؤوف**
- إلى زملائي في السكن وأصدقائي جميعا في ماليزيا والأردن...
- إلى جميع الأقارب والأصدقاء والاحبه في كل مكان ...
- إلى كل من يحب العلم والمعرفة ...

إليكم جميعاً أهدي هذا العمل المتواضع

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CHAPTER I

INTRODUCTION

Even though the computers age are fifty years old, it has come along way and surpassed all expectations. In the past many complex computations used to take hours even days while in today's computer technology it might take few seconds or less. By the rapid advancement in the computer, many developers are looking to increase the utilization of the computer it its maximum extents in commercial, social, medical, economical, managerial, and especially in the educational field where it can be used as a self-teaching mean.

The computer is a very effective teaching method of interaction between the user and the machine because it removes the wall of shyness between the student and the teacher and even among the users themselves. Also, the computer is an interesting tool to develop programs that make the user feel the ease and interest in coming back to the screen of the computer. Having said that, the computer should not take the place of the human teacher but increase the value of the teacher and the ease of his or her role as a teacher.

Throughout the ages and through the experiences of diverse people all over the globe, the computer has proved to be the most effective method of teaching because of its friendly presentable ways. One of these ways is learning foreign language.

Learning foreign languages is a task that is difficult and time-consuming. While it is possible to learn a foreign language by simply picking up a book on the subject, there are many difficulties that confront the learner who would attempt to do so.

With this difficulties in learning foreign languages and the computer development, we see new educational systems comes out to be used from the globe, these systems find a high degree of acceptance from the users, who said that these systems make the learning easier and faster.

Beside this thing the appearance of new programming languages, which make the system more user friendly, more attractive also make the educational systems more recommended from the users.

Also the appearance of multimedia application and the programming languages which support the multimedia in developing the application make the educational systems more attractive and inquired from the educational crew.

Problem Statement

Many educational systems that already developed and used nowadays, but unfortunately rear of these systems are aimed to teach Arabic language to non Arabian students, also the Arabic language grammar is one of the most difficult part of language studying for Arabic language students in general specially the non Arabian students.

Project Objective

The objectives of this project is to develop an educational application that will give a non Arabian student, who studying Arabic language in advanced level one of the most important lessons in Arabic grammar, by discussing the topic in details with an examples, and the last the system will examine the student by multiple choice exam, and after the student finish his exam the student will be given his result from the system.

Project Scope

The Student who likes to study Arabic language grammar in advanced level usually he needs to find a teacher and a book to study certain topic in Arabic language grammar. But on the real this topics found as books and can't satisfy their needs.

And for this sense, this computerized system is implemented, which show the topic in details, using visual environment and multimedia tools such as, audio that provide information about the topic, and the system gives the user the ability to choose the part of the topic that he wants to learn first.

The facilities that MM application owns (Text, Graphics, Audio, Video, ...etc) that is able to solve the problem and create a suitable environment to satisfy the student needs.

CHAPTER II

LITRATURE REVIEW

Evolution of Programming Languages and Visual Languages

There must be, by now, more than hundred or thousand notations for software that have had some sort of publication, and perhaps well over a thousand if various methods developed inside organizations and universities are counted.

Early in the development of computers, in the late 1940's and up through 1960's, it was recognized that operation of software was the most important aspect. The wholly alphanumeric (often machine level) code did not allow the developers to visualize the operation of the software. Control flow was the newest and most exotic aspect of computers, and the most difficult to visualize. The earliest flow charts were an attempt to draw a picture of these processes, and were designed to show just executable processes and control flow (and decisions) that caused the processes to be executed (Canham, 1986).

But as software systems expanded to millions of lines of code, and had to be broken up to be worked on by hundreds or even thousands of people, developers recognized that the interfaces among these many pieces had to be worked out before code could be written So, in the 1970's, it became popular to draw diagrams that stressed the interfaces that is, the data that flowed between processes Control flow was believed to be of secondary

importance, often because business data processing applications had simpler or regular patterns of control flow. Later, in the 1980's, special auxiliary diagrams (or alphanumeric documents) containing control flow were reintroduced for "real-time" applications not so much because rapid response was needed, but because the applications were complex enough to make their behavior obscure (Chapman,1995).

Later in the 1980's, it was recognized that if the software were broken up or partitioned so that each part corresponded to some real-world entity, and had within it everything – data and operations- that pertained to that entity, then when the inevitable changes to those entities came along, each change would affect only one part of the software. Further more, these entities ere related in classes, which one can distill out both, and operation that applied to whole classes, and so not have to re-invent that software every time he applied it to a specific instance (Wills, 1996). So was born the idea of software "Object," in which the data and operations relating to a certain real-world entity or class would be encapsulated together and kept separate from the rest of the software. And with the software objects came diagrams, which stress this partitioning, and its advantages.

In all these shifts among both alphanumerical and graphical methods of visualizing software, new languages appears using the visual environment, and the first software that used all over the worlds was the windows system which appears at the first as an application in 1984, then we saw it as an operating system in 1995.

Between 1984 until now we faced a rapid languages developments, and new languages which came as improving the old languages problems, such as Visual basic, Delphi, C++ builder, Visual C++, Java etc (Morgan, 1996)

These languages came out with new idea of developing the applications, which called visual environment, also new term in computer applications appeared which is the Multimedia, so now we will se what is the multi media, which all languages include its objects in the language package

Computerized Educational System and Rules of Designing These Systems

This part is about roles of teachers, learners, and computers in highly interactive teaching and learning When most educators think about highly interactive computing, their first thought is about computer-assisted instruction But, there are many other situations in which one uses a computer in a highly interactive manner The development of a spreadsheet model, and the use of it in asking and answering "What if?" questions, provides a good example The interaction one does in editing a photograph provides another example This article explores various aspects of highly interactive computing and makes some suggestions about how to improve our educational system (Wills, 1996)

Computer-Assisted Instruction

We all know that a computer can be a powerful aid to learning We know about "drill and practice" and tutorial computer-assisted instruction (CAI), and we know about simulations used to train airplane and spaceship pilots In all of these teaching/learning situations, there is interactivity between the computer system and the learner

In the pilot training simulations, the learner is involved in a highly interactive simulation of a real world environment The simulation is attention grabbing and realistic, and usually there is a high intrinsic motivation to learn These characteristics contribute significantly to the learning process (Canham,1986)

Drill and practice or tutorial CAI tends to lack the real world flavor of pilot-training simulations A standard attempt to overcome this difficulty is to embed the CAI in a game-like, entertainment environment The game-like environment may prove both attentions grabbing and intrinsically motivating On the other hand, it is possible that it contributes little to the desired learning outcomes This is because there may be little transfer from the learn environment to situations in which the learning is to be applied

Transfer of Learning

Transfer of learning is closely related to the CAI ideas given above The computer simulations used in pilot training are so realistic that there is a high level of transfer of learning real world piloting situations Flying the training simulator is less expensive and less dangerous than flying a real airplane or rocket ship Moreover, the computer simulation also allows the pilot to gain experience in dealing with dangerous emergency situation that are not apt to occur very frequently in the real world (Chapman,1995) All things considered, such CAI simulations have many advantages over emerging a trainee in a real world-training environment

On the other hand, the learning that occurs in more traditional CAI environments faces two transfer of learning difficulties First, there is the transfer from the computer environment to the non-computer environment Second, there is the transfer from the non-computer environment to the real world To illustrate, a child may become adept at quickly doing certain mental arithmetic feats in a highly interactive and entertaining game environment (Chapman, 1995) Will the child be able to display the same level of skill in the non-game environment of a traditional classroom or on a traditional pencil and paper test? And, will such traditional classroom knowledge and skill transfer to recognizing and solving somewhat similar problems that the student encounters outside the classroom?

It is known how to use computers to make highly interactive simulations that are so real world-like so that there is a high level of transfer of

this learning to the real world This provides us with a target to aim at as there are some organizations develop other types of CAI for use in our schools We have not come very far in this endeavor

Learning and "Attention" in the Human Mind

The body/brain receives input from the five senses aural, taste, touch, visual, and smell (For simplicity, in the remainder of this part I will use the term mind in place of the term brain/body) Learning takes place inside the mind This learning is influenced by what the mind consciously does to promote learning, as well as what it unconsciously does (Morgan, 1996) Thus, it can be think about improving learning by improving the external stimulus (what is provided from outside the mind) and by training the mind to learn better from the stimuli that it receives and from what it has stored in the past

The mind's various input systems are easily overwhelmed by the amount of input that is or can be available Thus, the mind is designed to not pay attention to most of the input That is, there is a continual filtering mechanism being applied The mind only pays attention to a very small part of the input It pays special attention to life threatening and other dangerous situations (Morgan, 1996)

The mind can consciously decide to focus its attention on certain internal and external components of its environment That is, the conscious

mind can focus its attention of stored data, information, knowledge, and wisdom, and it can also decide to pay attention to external stimuli (Morgan, 1996)

This selective attention mechanism presents a major challenge to teachers As a teacher, you want students to pay attention to what is going on in the classroom But, you are competing against built-in mechanisms that are designed to have the mind only pay attention to really important things Many students automatically filter out (that is, do not pay attention to) what is going on in the classroom After all, classrooms are designed to be safe places, so there is little chance of life-threatening events occurring, such as an attack from a tiger or a poisonous snake In a classroom, a student's mind can safely consider events of past days or possible events in the future These events may be far more attention grabbing than the current events within the classroom (Wills, 1996) The student pays attention to and learns about these past and possible future events, rather than what the teacher would like the student to be learning

From a teacher point of view, there is a competition going on for the attention of a student's mind The good teacher is able to create an interactive learning environment that helps to focus student attention on important curriculum topics (Wills,1996) A good teacher and a good educational environment can grab the attention of the students in a class Highly interactive computer environments can add significantly to such a learning environment