

ITS Teaching ASP Dot Net

Msbah J. Mosa, Islam Albatish

Department of Information Technology, Faculty of Engineering & Information Technology
A,I-Azhar University, Gaza, Palestine

Abstract: *ASP dot net is one of the most widely used languages in web developing of its many advantages, so there are many lessons that explain its basics, so it should be an intelligent tutoring system that offers lessons and exercises for this language.why tutoring system? Simply because it is one-one teacher, adapts with all the individual differences of students, begins gradually with students from easier to harder level, save time for teacher and student, the student is not ashamed to make mistakes, and more.*

Therefore, in this paper, we describe the design of an Intelligent Tutoring System for teaching ASP dot net to help students learn ASP dot net easily and smoothly. Tutor provides beginner level in ASP dot net. Finally, we evaluated our tutor and the results were excellent by students and teacher.

Keywords— ASP; Net; Intelligent Tutoring System; Tutor

1. INTRODUCTION

ASP.NET is more than the following variant of Active Server Pages (ASP); it gives a bound together Web advancement demonstrate that incorporates the administrations important for designers to fabricate endeavor class Web applications. While ASP.NET is to a great extent sentence structure good with ASP, it likewise gives another programming model and framework for more versatile and stable applications that assistance gives more noteworthy security. You can don't hesitate to enlarge your current ASP applications by incrementally adding ASP.NET usefulness to them [1].

ASP.NET Web pages, referred to authoritatively as Web Forms, are the principle building hinders for application improvement in ASP.NET. There are two essential systems for Web Forms, a web application arrange, and a site format. Web applications should be aggregated before organization, while sites structures enable the client to duplicate the documents specifically to the server without earlier assemblage. Web shapes are contained in documents with an ".aspx" expansion; these records commonly contain static (X)HTML markup or part markup. The segment markup can incorporate server-side Web Controls and User Controls that have been characterized in the structure or the page. For instance, a textbox part can be characterized on a page as `<asp: textbox id='myid' runat='server'>`, which is rendered into a HTML input box. Also, dynamic code, which keeps running on the server, can be set in a page inside a piece `<% - dynamic code - %>`, which is like other Web improvement advances, for example, PHP, JSP, and ASP. With ASP.NET Framework, Microsoft presented another code-behind model that gives static content a chance to stay on the .aspx page, while dynamic code stays in an .aspx.vb or.aspx.cs or .aspx.fs record (contingent upon the programming dialect utilized) [2].

Intelligent Tutoring Systems are computer-based systems designed to teach students in a field, in other words, to play the role of a teacher to the fullest extent by introducing artificial intelligence [3].

ITSs have the shared objective of empowering learning in a significant and compelling way by using many technologies [4].

The main goal of the ASP.Net intelligent tutoring system was to make accessible the advantages of one-on-one educational in a cost-effective way to the students of ASP.Net [5].

2. LITERATURE REVIEW

The subject of the intelligent tutoring system has been addressed in many papers because of its importance in the field of education in addition to its positive result, such as An Intelligent Tutoring System Authoring Tool designed by Abu Naser teaches how to use java program [4], SQL-Tutor, teaches and explains to students the way of writing queries in relational database through several lessons in the basics of writing query [6], ITS for Health problems related to addiction of video game playing [7], TS for C# Language [8], effectiveness of the CPP-Tutor [9], teaching AI searching algorithms [10], teaching database [11], and ITS for Teaching the 7 Characteristics for Living Things [17], ITS for teaching the right letter pronunciation in reciting the Holy Quran [12], ITS for teaching advanced topics in information security [13], Oracle Intelligent Tutoring System (OITS) [14], ITS for learning Computer Theory[15], e-learning system [16], ADO-Tutor: Intelligent Tutoring System for leaning ADO.NET [18], ITS for Parameter Passing in Java Programming [22], and Predicting learners performance using NT and ITS [19], CPP-Tutor for C++ Programming Language [20], a comparative study between Animated Intelligent Tutoring Systems (AITS) and Video-based Intelligent Tutoring Systems (VITS) [21], ITS for stomach disease Intelligent Tutoring System [23], ITS for diabetes [24], Computer Networks [25], DSE Tutor for Teaching DES Information Security Algorithm [26].

3. ASP.NET ITS ARCHITECTURE

In this paper we used ITSB tool to build intelligent tutoring system for learning building websites using ASP.net, ITSB authoring tool is developed using Delphi Embarcadero XE8, 2015; ITSB authoring tool has two faces. The first, Admin can add materials and questions and answers etc. and the latter, students learn the course material and answer the exercises [4]. Intelligent Tutoring

System consists of four main components and can be listed as follows: domain module, teaching module, student module and user interfaces module [28].

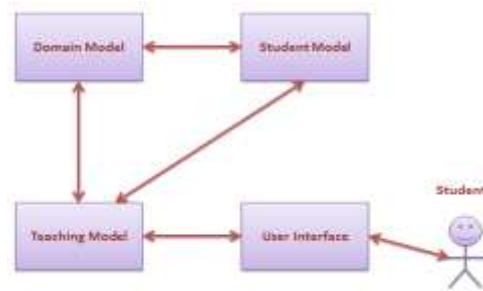


Figure 1: Overall System Architecture.

3.1 DOMAIN MODULE

In this section we talk about expert knowledge in ASP.net or how teachers do in this domain. The topics covered in our tutor are:

- General introduction about ASP.net and its components.
- ASP.NET - Environment Setup.
- ASP.NET - Life Cycle.
- ASP.NET - Event Handling.
- ASP.NET - Server Side.
- ASP.NET - Server Controls.
- ASP.NET - HTML Server.
- ASP.NET - Client Side.
- ASP.NET - Basic Controls.
- ASP.NET – Directives.
- ASP.NET - Managing State.
- ASP.NET – Validators.

3.2 STUDENT MODULE

Each student can access the system through his own account and then review the lessons from the beginner to the professional, the student also follows the examples of the lesson and then solve the exercises, the exercises are presented to the student is easy to difficult if the student responds to the new lesson or if you fail to return to the lesson again.

The system gives hints to the student if needed, as the system shows the student's degree.

3.3 TEACHING MODULE

This module as controller that controls operations in ITS, the student can answer questions if has good degree or more he can move to next level, but if he fails he back to exercises of the same level.

The degree of difficulty increases as the student moves from a lower level to a higher level and if the student obtains a higher degree than good.

3.4 USER INTERFACE MODULE

The user interface is divided into two sections for the teacher to add lessons, examples, exercises, modification and deletion, in addition to adding new users to the color adjustment and many settings. The student interface is the one through which lessons are reviewed, exercises are solved and the student's degree is determined.

Here some of screenshots of teacher interface and student interface. As shown in Fig2 – Fig9.

ITSE Language was created by Prof. Dr. Samy S. Abu Nazer

ASPNET Teacher

Student No: 0000-0000 /

Student Name:

Last Session was on:

Login Exit

Figure 2: Student Login Form.

Constants Data Entry

ITS Basic Data | Student Data | Classes

Enter Title of The ITS System (English) ASPNET Teacher

Enter Title of The ITS System (Arabic) نظام التعلم الإلكتروني باستخدام ASP.net

Enter location of the Data Base

Enter Name of creator of the ITS (English) Musbah Musa

Enter Name of creator of the ITS(Arabic) مصباح بلال موسى

Enter the meaning of @ symbol

Enter the meaning of # symbol

Enter the meaning of \$ symbol

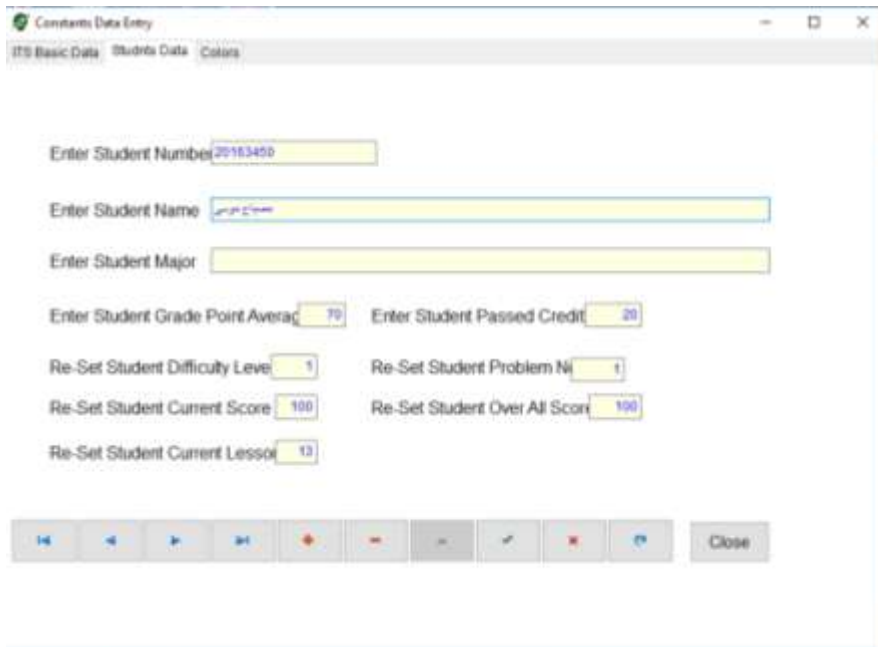
Enter the meaning of % symbol

Enter the meaning of ^ symbol

Enter User Interface Language English-العربي

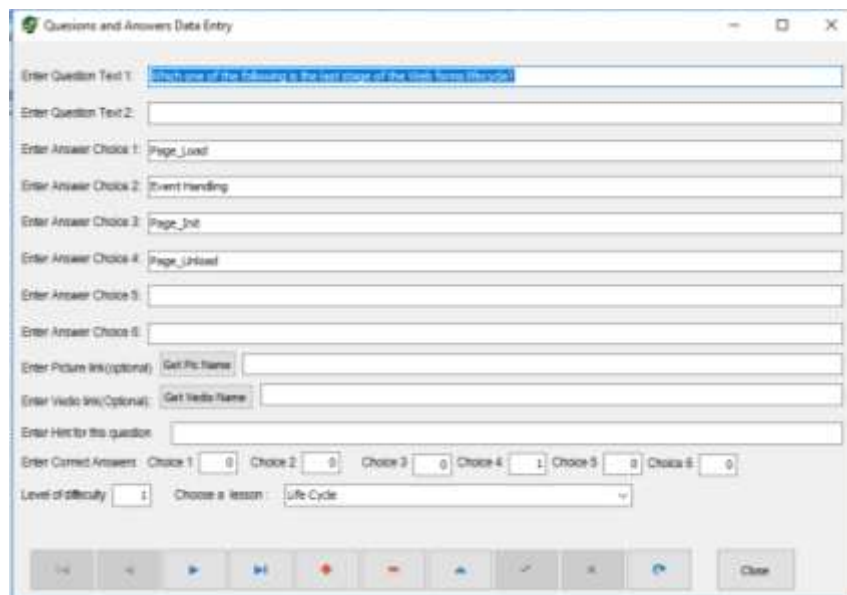
Save Close

Figure 3: Form for adding ITS Basic Data



The screenshot shows a software window titled "Constants Data Entry" with three tabs: "ITS Basic Data", "Students Data", and "Colors". The "Students Data" tab is active. The form contains several input fields for student information: "Enter Student Number" (with value 20183450), "Enter Student Name" (with Arabic text), "Enter Student Major", "Enter Student Grade Point Average" (with value 79), "Enter Student Passed Credit" (with value 20), "Re-Set Student Difficulty Level" (with value 1), "Re-Set Student Problem Number" (with value 1), "Re-Set Student Current Score" (with value 100), "Re-Set Student Over All Score" (with value 100), and "Re-Set Student Current Lesson" (with value 13). At the bottom, there is a navigation bar with various icons and a "Close" button.

Figure 4: Form for adding Students Data



The screenshot shows a software window titled "Questions and Answers Data Entry". The form is used for entering question and answer data. It includes fields for "Enter Question Text 1" (with a blue highlighted text), "Enter Question Text 2", and six "Enter Answer Choice" fields (with values like Page_Load, Event handling, Page_Init, Page_Unload). There are also fields for "Enter Picture link (optional)", "Enter Video link (Optional)", and "Enter Hint for this question". At the bottom, there are "Enter Correct Answers" fields for Choice 1 through Choice 6 (with values 0, 0, 0, 1, 0, 0), a "Level of difficulty" field (with value 1), and a "Choose a lesson" dropdown menu (with value Life Cycle). A navigation bar with icons and a "Close" button is at the bottom.

Figure 5: Interface for modifying Fonts of all screens of the system

The screenshot shows a 'Constants Data Entry' window with the following configuration table:

Element	Background Color	Font Name	Font Color	Font Size
Forms	clSkyBlue			
Labels		Arial	clBlack	12
Buttons		Arial	clBlack	11
Page Sheet		Arial	clMaroon	9
Richedit	clInfoBk	Arial	clBlue	9
List Box	clBtnFace	Arial	clBlue	9
Combo Box	clBtnFace	Arial	clBlue	9
Edit	clInfoBk	Arial	clBlue	9

Buttons: Save, Close

Figure 6: Form for adding questions and answers

The screenshot shows the 'Learn: ASP.NET Teacher' application with the following content:

ASP.NET - Basic Controls

In this chapter, we will discuss the basic controls available in ASP.NET.

Button Controls

ASP.NET provides three types of button control:

- Button** : It displays text within a rectangular area.
- Link Button** : It displays text that looks like a hyperlink.
- Image Button** : It displays an image.

When a user clicks a button, two events are raised: Click and Command.

Basic syntax of button control:

```
<asp:Button ID="Button1" runat="server" onclick="Button1_click" Text="click" / >
```

Common properties of the button control:

Property	Description
Text	The text displayed on the button. This is for button and link button controls only.
ImageUrl	For image button control only. The image to be displayed for the button.
AlternateText	For image button control only. The text to be displayed the browser cannot display the image.

Figure 7: Student lessons and examples form

Figure 8: Student Exercises form.

studentNo	ProblemNo	difficulty	CurrentScore	OverallScore	SessionDate	title
20163450	1	1	0	0	12/22/2017 11:18:00	Environment Setup

Figure 9: Student statistics form

4. ITS EVALUATION

We tested some students interested in the language of ASP.net using the intelligent tutoring system and the results were excellent and all of them showed a desire to use the system because it is the work of the human teacher to the fullest.

5. CONCLUSION

ITSs are seen as future's mentoring framework and many examinations fulfilled around there. When they are contrasted with customary classroom climate, ITSs are very effective and moderately having instructors' spot, they go up against supporting obligation for understudies. In customary showing condition, understudies' contrasts aren't considered. In this paper, we have designed intelligent tutoring system for student learning websites developing by ASP.net using ITSB tool. The system was created for students who need to think about ASP.net or increment their knowledge in this field easily. The evaluations of the system have been done by teachers and students.

REFERENCES

1. Almasri, A., et al. (2019). "Intelligent Tutoring Systems Survey for the Period 2000-2018." *International Journal of Academic Engineering Research (IJAER)* 3(5): 21-37.
2. Almurshidi, S. H. and S. S. Abu Naser (2017). "Design and Development of Diabetes Intelligent Tutoring System." *European Academic Research* 6(9): 8117-8128.
3. Almurshidi, S. H. and S. S. Abu Naser (2017). "Stomach disease intelligent tutoring system." *International Journal of Advanced Research and Development* 2(1): 26-30.
4. Al-Nakhal, M. A. and S. S. Abu Naser (2017). "Adaptive Intelligent Tutoring System for learning Computer Theory." *European Academic Research* 6(10): 8770-8782.
5. Alshawwa, I. A., et al. (2019). "An Intelligent Tutoring System for Learning Computer Network CCNA." *International Journal of Engineering and Information Systems (IJEAIS)* 3(2).
6. Al-Shawwa, M., et al. (2019). "An Intelligent Tutoring System for Learning Java." *International Journal of Academic Information Systems Research (IJAISR)* 3(1): 1-6.
7. Anderson, J., et al. (2005). "Adaptation of Problem Presentation and Feedback in an Intelligent Mathematics Tutor." *Information Technology Journal* 5(5): 167-207.
8. Bakeer, H. M. S. and S. S. Abu-Naser (2019). "An Intelligent Tutoring System for Learning TOEFL." *International Journal of Academic Pedagogical Research (IJAPR)* 2(12): 9-15.
9. Baker, J., et al. (1996). "Information Visualization." *Information Technology Journal* 7(2).
10. Baker, J., et al. (1996). "Information Visualization." *Information Technology Journal* 7(2): pp: 403-404.
11. Buhisi, N. I. and S. S. Abu Naser (2009). "Dynamic programming as a tool of decision supporting." *Journal of Applied Sciences Research*; www.aensiweb.com/JASR/ 5(6): 671-676.
12. El Agha, M. I., et al. (2018). "SQL Tutor for Novice Students." *International Journal of Academic Information Systems Research (IJAISR)* 2(2): 1-7.
13. El Haddad, I. A. and S. S. Abu Naser (2017). "ADO-Tutor: Intelligent Tutoring System for learning ADO. NET." *European Academic Research* 6(10): 8810-8821.
14. Elnajjar, A. E. A. and S. S. Abu Naser (2017). "DES-Tutor: An Intelligent Tutoring System for Teaching DES Information Security Algorithm." *International Journal of Advanced Research and Development* 2(1): 69-73.
15. Elreesh, J. Y. A. and S. S. Abu-Naser (2019). "Cloud Network Security Based on Biometrics Cryptography Intelligent Tutoring System." *International Journal of Academic Information Systems Research (IJAISR)* 3(3): 37-70.
16. Ghali, M. J. A. and S. S. Abu-Naser (2019). "ITS for Data Manipulation Language (DML) Commands Using SQLite." *International Journal of Engineering and Information Systems (IJEAIS)* 3(3): 57-92.
17. Hamed, M. A. and S. S. Abu Naser (2017). "An intelligent tutoring system for teaching the 7 characteristics for living things." *International Journal of Advanced Research and Development* 2(1): 31-45.
18. Hamed, M. A., et al. (2018). "Intelligent Tutoring System Effectiveness for Water Knowledge and Awareness." *International Journal of Academic Information Systems Research (IJAISR)* 2(4): 18-34.
19. Abu Ghali, M. J., et al. (2018). "An Intelligent Tutoring System for Teaching English Grammar."
20. Abu Hasanein, H. A. and S. S. Abu Naser (2017). "An intelligent tutoring system for cloud computing." *International Journal of Academic Research and Development* 2(1): 76-80.
21. Abu Naser, S. (2008). "An Agent Based Intelligent Tutoring System For Parameter Passing In Java Programming." *Journal of Theoretical & Applied Information Technology* 4(7).
22. Abu Naser, S. S. (2001). "A comparative study between animated intelligent tutoring systems AITS and video-based intelligent tutoring systems VITS." *Al-Aqsa Univ. J* 5(1): 72-96.
23. Abu Naser, S. S. (2006). "Intelligent tutoring system for teaching database to sophomore students in Gaza and its effect on their performance." *Information Technology Journal* 5(5): 916-922.
24. Abu Naser, S. S. (2008). "Developing an intelligent tutoring system for students learning to program in C++." *Information Technology Journal* 7(7): 1055-1060.
25. Abu Naser, S. S. (2008). "Developing visualization tool for teaching AI searching algorithms." *Information Technology Journal, Scialert* 7(2): 350-355.
26. Abu Naser, S. S. (2012). "A Qualitative Study of LP-ITS: Linear Programming Intelligent Tutoring System." *International Journal of Computer Science & Information Technology* 4(1): 209.
27. Abu Naser, S., et al. (2011). "Human Computer Interaction Design of the LP-ITS: Linear Programming Intelligent Tutoring Systems." *International Journal of Artificial Intelligence & Applications (IJAAIA)* 2(3).
28. Abu-Nasser, Bassem. "Medical Expert Systems Survey." *International Journal of Engineering and Information Systems (IJEAIS)* 1, no. 7 (2017): 218-224.
29. Abu-Nasser, Bassem S., and Samy S. Abu-Naser. "Cognitive System for Helping Farmers in Diagnosing Watermelon Diseases." *International Journal of Academic Information Systems Research (IJAISR)* 2, no. 7 (2018): 1-7.
30. Abu-Nasser, Bassem S., and Samy S. Abu Naser. "Rule-Based System for Watermelon Diseases and Treatment." *International Journal of Academic Information Systems Research (IJAISR)* 2, no. 7 (2018): 1-7.
31. AbuEloun, N. N. and S. S. Abu Naser (2017). "Mathematics intelligent tutoring system." *International Journal of Advanced Scientific Research* 2(1): 11-16.
32. AbuEl-Reesh, J. Y. and S. S. Abu-Naser (2018). "An Intelligent Tutoring System for Learning Classical Cryptography Algorithms (CCAITS)." *International Journal of Academic and Applied Research (IJAAR)* 2(2): 1-11.
33. Abu-Naser, S. S. (2008). "JEE-Tutor: An Intelligent Tutoring System for Java Expression Evaluation."
34. Abu-Naser, S. S. (2016). "ITSB: An Intelligent Tutoring System Authoring Tool." *Journal of Scientific and Engineering Research* 3(5): 63-71.
35. Abu-Naser, S., et al. (2011). "An intelligent tutoring system for learning java objects." *International Journal of Artificial Intelligence and Applications (IJAAIA)* 2(2).
36. Akkila, A. E.-D. N. and S. S. Abu Naser (2018). ITS-Tutor for Teaching Rules of Tajweed the Holy Quran, Al-Azhar University, Gaza, Palestine.
37. Akkila, A. N. and S. S. Abu Naser (2017). "Teaching the right letter pronunciation in reciting the holy Quran using intelligent tutoring system." *International Journal of Advanced Research and Development* 2(1): 64-68.
38. Akkila, A. N. and S. S. Abu-Naser (2018). "Rules of Tajweed the Holy Quran Intelligent Tutoring System." *International Journal of Academic Pedagogical Research (IJAPR)* 2(3): 7-20.
39. Akkila, A. N., et al. (2019). "Survey of Intelligent Tutoring Systems up to the end of 2017." *International Journal of Academic Information Systems Research (IJAISR)* 3(4): 36-49.
40. Al Rekhawi, H. A. and S. Abu Naser (2018). "An Intelligent Tutoring System for Learning Android Applications Ui Development." *International Journal of Engineering and Information Systems (IJEAIS)* 2(1): 1-14.
41. Al Rekhawi, H. A. and S. S. Abu-Naser (2018). "Android Applications UI Development Intelligent Tutoring System." *International Journal of Engineering and Information Systems (IJEAIS)* 2(1): 1-14.
42. Alawar, M. W. and S. S. Abu Naser (2017). "CSS-Tutor: An intelligent tutoring system for CSS and HTML." *International Journal of Academic Research and Development* 2(1): 94-98.
43. Al-Bastami, B. G. and S. S. Abu Naser (2017). "Design and Development of an Intelligent Tutoring System for C# Language." *EUROPEAN ACADEMIC RESEARCH* 6(10): 8795.
44. Albatish, I., et al. (2018). "ARDUINO Tutor: An Intelligent Tutoring System for Training on ARDUINO." *International Journal of Engineering and Information Systems (IJEAIS)* 2(1): 236-245.
45. Al-Bayed, M. H. and S. S. Abu Naser (2017). "An intelligent tutoring system for health problems related to addiction of video game playing." *International Journal of Advanced Scientific Research* 2(1): 4-10.
46. Al-Bayed, M. H. and S. S. Abu-Naser (2018). "Intelligent Multi-Language Plagiarism Detection System." *International Journal of Academic Information Systems Research (IJAISR)* 2(3): 19-34.
47. Aldaadooh, R. and S. S. Abu Naser (2017). "Development and Evaluation of the Oracle Intelligent Tutoring System (OITS)." *European Academic Research* 6(10): 8711-8721.
48. Alhabbash, M. I., et al. (2016). "An Intelligent Tutoring System for Teaching Grammar English Tenses." *European Academic Research* 6(9): 7743-7757.
49. Al-Hanjori, M. M., et al. (2017). "Learning computer networks using intelligent tutoring system." *International Journal of Advanced Research and Development* 2(1): 1.
50. Hasanein, H. A. A. and S. S. Abu-Naser (2018). "Developing Education in Israa University Using Intelligent Tutoring System." *International Journal of Academic Pedagogical Research (IJAPR)* 2(5): 1-16.
51. Hilles, M. M. and S. S. Abu Naser (2017). "Knowledge-based Intelligent Tutoring System for Teaching Mongo Database." *EUROPEAN ACADEMIC RESEARCH* 6(10): 8783-8794.
52. Mahdi, A. O., et al. (2016). "An intelligent tutoring system for teaching advanced topics in information security." *World Wide Journal of Multidisciplinary Research and Development* 2(12): 1-9.
53. Marouf, A. and S. S. Abu-Naser (2019). "Intelligent Tutoring System for Teaching Computer Science I in Al-Azhar University, Gaza." *International Journal of Academic and Applied Research (IJAAR)* 3(3).
54. Marouf, A., et al. (2018). "An Intelligent Tutoring System for Learning Introduction to Computer Science." *International Journal of Academic Multidisciplinary Research (IJAMR)* 2(2): 1-8.
55. Mosa, M. J., et al. (2018). "ASP. NET-Tutor: Intelligent Tutoring System for learning ASP. NET." *International Journal of Academic Pedagogical Research (IJAPR)* 2(2): 1-8.
56. Naser, S. (2009). "Evaluating the effectiveness of the CPP-Tutor an intelligent tutoring system for students learning to program in C++." *Journal of Applied Sciences Research* 5(1): 109-114.
57. Nassr, M. S. and S. S. Abu-Naser (2019). "ITS for Enhancing Training Methodology for Students Majoring in Electricity." *International Journal of Academic Pedagogical Research (IJAPR)* 3(3): 16-30.
58. Ng, S., et al. (2010). "Ad hoc networks based on rough set distance learning method." *Information Technology Journal* 10(9): 239-251.
59. Owaied, H. H., et al. (2009). "Using rules to support case-based reasoning for harmonizing melodies." *Journal of Applied Sciences* 11(14): pp: 31-41.
60. Qwaider, S. R. and S. S. Abu-Naser (2018). "Excel Intelligent Tutoring System." *International Journal of Academic Information Systems Research (IJAISR)* 2(2): 8-18.
61. Shaath, M. Z., et al. (2017). "Photoshop (CS6) intelligent tutoring system." *International Journal of Academic Research and Development* 2(1): 81-87.
62. Sulisel, O., et al. (2005). "Growth and Maturity of Intelligent Tutoring Systems." *Information Technology Journal* 7(7): 9-37.
63. Azaab, S., et al. (2000). "A proposed expert system for selecting exploratory factor analysis procedures." *Journal of the College of Education* 4(2): 9-26.
64. Abu Naser, S. S. and S. H. Almurshidi (2016). "A Knowledge Based System for Neck Pain Diagnosis." *World Wide Journal of Multidisciplinary Research and Development (WWJMRD)* 2(4): 12-18.
65. Abu Naser, S. S., et al. (2008). "A Proposed Expert System For Guiding Freshman Students In Selecting A Major In Al-Azhar University, Gaza." *Journal of Theoretical & Applied Information Technology* 4(9).
66. Abu-Naser, S., et al. (1995). "& Beattie, GA (2000). "Expert system methodologies and applications-a decade review from: 9-26.
67. Hissi, H. E.-., et al. (2008). "Medical Informatics: Computer Applications in Health Care and Biomedicine." *Journal of Artificial Intelligence* 3(4).
68. Khella, R. A. and S. S. Abu-Naser (2018). "An Intelligent Tutoring System for Teaching French." *International Journal of Academic Multidisciplinary Research (IJAMR)* 2(2): 9-13.
69. Li, L., et al. (2011). "Hybrid Quantum-inspired genetic algorithm for extracting association rule in data mining." *Information Technology Journal* 12(4).
70. Chen, R.-S., et al. (2008). "Evaluating structural equation models with unobservable variables and measurement error." *Information Technology Journal*.