An Expert System to Diagnose and Fix Common Car Breakdowns for Industrial Technical Education in Egypt

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 182
Number 7

Year of Publication: 2018

Authors:
Mohamed R. Alkotby, Elsaeed Elsaeed Mohamed Abd Elrazek, M. Z. Rashad

10.5120/ijca2018917648
{bibtex}2018917648.bib{/bibtex}

Abstract
As the specialization of cars is one of the specialties found in industrial technical education (ITE) schools and students suffer from many problems highlighted by the results of personal interviews with some experts and specialists in the field of repair and maintenance of cars as well as some teachers of ITE has become clear the need to design the proposed system to help students to improve their knowledge and then skills which makes them able to join the labor market and keep abreast of the rapid changes and developments in the automotive industry and the complexity of their breakdowns. The proposed system was designed according to the basic stages of expert system: Problem Identification-Conceptualization-Formalization-Application Implementation-Testing. Knowledge base was put on the cloud computing so that it can be accessed at any time and from any place. The proposed system was applied to a sample of students including 53 students from the specialization of cars divided into two groups; (experimental and standard). The results were analyzed and processed statistically according to the actual application of the proposed system on the research sample. It was found that there
were statistically significant differences at the level of (0.05) between the average scores of the students of the standard group (the traditional teaching style) and the experimental group in the knowledge and skills aspects of the experimental group, indicating the effective use of the proposed system and the need for ITE schools.

References

3. Mohammed, O. Learn the workmanship ".. Conference for the development of technical education at Assiut University". 2017 [cited 2018 23/3/2018]; Available from: http://www.masrawy.com/News/News_Regions/details/2017/2/23/1033320/-%D8%A7%D8%AA%D8%B9%D9%84%D9%85-%D8%B5%D9%86%D8%B9%D8%A9-%D9%85%D8%A4%D8%A8%D9%85%D8%B1-%D9%84%D8%AA%D8%B7%D9%88%D9%8A%D8%B1-%D8%A7%D9%84%D8%AA%D8%B9%D9%84%D9%8A%D9%85-%D8%A7%D9%84%D9%81%D9%86%D9%8A-%D8%A3%D8%B3%D9%8A%D9%88%D8%B7
7. Saeed, S.M., Design of Intelligent Database System for Vehicle Fault Diagnosis. 2011, Middle East University - Jordan: Faculty of information technology.
10. Jarida, S.E.M.D.M.A.-. Proposed strategy for industrial technical education in Egypt to meet the needs of the labor market. ASEP, 2014.
12. Mohammed, A.S.A.K., The Effectiveness of a program for developing the skills of cars maintenance course for the industrial secondary schools students in the light of the technological innovations, in Department of Curriculum and Teaching Methods. 2011, Helwan University: Faculty of Education.
17. Ibrahim, M.I.S., Effectiveness of a program based on expert systems to develop logical
thinking among high school students, in Department of Education Technology. 2012, Helwan University: Faculty of Education.


Index Terms

Computer Science  Artificial Intelligence

Keywords

Artificial Intelligence (AI) - Expert System (ES) - Industrial Technical Education (ITE) - Common Cars Breakdowns.