A study of some Expert Systems Methods and Aids Extention

Agricultural Expert Systems (AES) are considered one of the promising facilities available to help farmers' progress. Nevertheless, this option is missing among all extension methods and aides used by Extension Service in Egypt, and the information about planning and using processes, pros and cons or justifications to use them at the field level are very rare. In spite of the money and technical efforts already spent on developing AESs, the process of "Knowledge Generation, Exchange and Utilization" stopped before the diffusion stage. Among other reasons, the unclear sharing of extension experts and focusing mainly on system's validation and verification by developers contributed considerably to that problem. Hence, this study was conducted to clarify the extension's functional aspects related to the AESs by investigating experts and farmers' opinions about the system especially after packaged with multimedia. The objectives of the study were to: 1.Standardize the AES viability through the following groups of criteria/ characteristics from the viewpoint of experts: - Criteria of AESs function and characteristics as performance aids.- Performance-centered design criteria for AESs. - Balanced interactive rate between AES and the user. 2.Identify the degree to which the studied AESs meet the following groups of criteria/ characteristics from the viewpoint of experts: - Criteria of AESs function and characteristics as performanceaids. - Performance-centered design criteria for AESs. - Balanced interactive rate between AES and the user. - Interactivity effectiveness criteria between AES and the user. - Usability testing criteria. 1 3.Identify the degree to which learning component of LIMEX and I the experimental learning component meet the educational software choosing criteria from the viewpoint of experts. 4.Determine the difference between the degree to which learning component of LIMEX and the experimental learning component meet the educational software choosing criteria from the viewpoint of experts. 5.Identify the experts' opinion about classifying the basic AESs and AESs supported by learning components in the frame of extension methods and aids. 6.Identify experts' opinions about the problems facing AESs diffusion at the field level and their suggestions to solve it. 7.Identify the points of agreement between the studied AES's recommendations and leaders' information and practices. 8.Identify the reasons of disagreement between the studied AES's recommendations and leaders' information and practices from the viewpoint of respondent leaders. 9.Identify leaders' opinion about the sufficiency of AES's information and multimedia. . 10.Identify leaders' opinion about the suitability of AESs.11.Identify leaders' opinion about the importance of AESs 12.Identify leaders' opinion about the efficiency of AESs13.Identify leaders' opinion about AES's educational ability. 14.Identify the change in leaders' information after exposing to the studied AES. 15.Identify leaders' attitudes toward computers and AES after exposing to the studied AES. In order to fulfill the first 6 objectives, 21 of extension experts and knowledge engineers was selected. Experts were chosen havingPh.Ds or Ms.D. and experienced in computer and AESs use or development. To achieve the rest of the objectives regarding the field study, Qualubia governorate was selected as the third ranked governorate in growing or producing Citrus. Kafr El-Gemal and Kafr Aabed villages of Toukh district were selected as their Citrus-planted area amounts to 42% of the district's. With the help of informants, a random sample of about 25% of the villages' leaders were selected amounting to 32 leaders (18 and 14 leaders of the two villages sequentially0. Three AESs were subjected to study, CITEX 2.2, LIMEX 1.0, and a subject from the learning component of

CITEX 4.0 (under development) concerning ”The Mediterranean Sea Fruit Fly”. Data were collected by interviewing respondents using two questionnaires during January and February 2000. The first questionnaire of expert respondents composed of 7 parts aiming to standardize the AES viability through the criteria of AESs function and characteristics as performance aids, performance-centered design criteria for AESs, and the balanced interactive rate between AES and the user. The other parts were developed to identify the experts’ opinion about the studied systems meeting those criteria and each of the criteria of effective interactivity, usability, and choosing educational software, as well as identifying experts opinion about AESs diffusion problems at the field level and their suggestions to solve it. The second questionnaire of farmers included five parts covering the presentation and questions of CITEX 2.2, the presentation and questions of LIMEX, the presentation and questions of the learning component based upon CITEX 4.0, some items to identify farmers attitudes toward computers and AES, and farmers attainment test regarding the learning component based upon CITEX 4.0. Frequency, percentage, average, Standard Deviation, Coefficient of Skewness, Pearson’s product moment, Chi Square Goodness of fit with continuity correction factor and Factor Analysis were used to analyze the data statistically. SPSS 8.0, Microstate computer programswere used in data analysis.