

Analysis of the Making Smart Concept in Order to Provide Appropriate Curriculum for Primary School of Iran

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Abstract The purpose of this study is analysis of the making smart concept in order to provide appropriate curriculum for primary school of Iran. The conceptual analysis method was used to reach this purpose. Then in order to present the desirable model of curriculum based on making smart of educational system of Iran, this model was surveyed in opinion of curriculum and making smart experts and based on that the result of research showed that desirable model for curriculum based on making smart compared to the quo status that is composed of two factors components of hardware and empowerment the manpower; has five components of management system, teaching and learning environment, empowerment the manpower, hardware and software factors.

Keywords: designing curriculum, making smart, educational system of Iran

Introduction

According to increasing technology development and affecting all aspects of life due to affecting technology, training nature has been affected because of achieving to smaller goals and always is changing, that according to intensity and speed of changes, inevitably has used the virtual potential of technology and by using electronic training facilities entitled smart schools in the event of correct and on time training try to not only satisfy its needs by combining the curriculum and technology but also can answer needs of its society (Siemens, 2014).

On the other hands, students will require this subject that improves their tasks, abilities and knowledge about informational technologies more than ever. In other words, for improvement and expansion of society, we need use of new technologies, which can change results of their research to useful services and products (Boud, 2000).

In this way, importance and necessity of leaving old methods and strategies in education and training and teaching will be clear according to new educational methods and strategies (Sorush, 2007).

Creating smart schools in country is gradual evolution of school architecture such as (structure, culture, roles) and move to organizational sublimation and learning (creating learner organization) (Samari & Atashak, 2009).

Final purpose of activating smart schools, is training work force equipped with computer tacks and informational knowledge that can satisfy the needs of living in new world (Anand et al., 2016).

The most important feature of smart schools is that students use their abilities with independent thinking and creativity tools and prevailing atmosphere causes using abilities of trainers, teachers and parents for improving the education and training and totally school becomes encouraging learning and causes creating Motivation and willingness in collection (Moednia, 2006).

Related to Content expressed, bottom purposes are followed by this research: 1. Identifying meaning and concept of curriculum based on making smart and main categories that shape it 2. Identifying features of curriculum based on making smart 3. Examining pundits' perspective

about elements of curriculum 4. Designing curriculum pattern based on making smart for elementary training system of Iran

Research methodology

According to we need examining the Coordination of making smart concept with religion-Iranian values for presenting the Favorable curriculum of Iran, is used from the method of assessment framework in this stage. In this method that is Supervisor on justified definition of Conceptual structures, works like investigating the curriculum components feature of Iran based on pundits' ideas were done (Mehrmohammadi, 2009).

Statistical community and sample: In first stage means the stage of Conceptualization all data and sources related to main elements of curriculum and features of curriculum based on making smart were examined.

For achieving to this importance, numbers of 50 and 130 objects identified as a book and article in searching of internet and library scientific research motors and footholds, informational footholds of universities all over the world, free available books and journals, with making smart concepts and curriculum based on making smart.

According to extensiveness of studding, results of this research examined more accurate and after global studding of

examined concept, numbers of Relevant and usable books and articles limited and then these documents determined as main examined documents and then concept of each article and book that were checked, the numbers of them were 50.

In second stage means Conceptual interpretation based on Purposive sampling method, communications which have had Claims of making smart and or govern by this system, choosing and elements of Curriculum in these countries were studied. About that what countries have smart schools, researcher has chosen three countries of Malaysia, Australia and Finland.

Also in third part for analyzing the conceptual structure, statistical communication is all of the Curriculum Pundits and making smart teachers of Iran that was contained 550 peoples. Then by the method of purposefully sampling, members who had a grade of MA and Ph.D. were chosen as a sample and questionnaire send for chosen members (about 300 people) and number of 250 complete questionnaires have been returned and have been analyzed.

Results

First question: analyzing the conceptual aspects of Curriculum based on making smart

Table . Curriculum components based on making smart in Iran

Main components	subcomponents
1. Management system	School govern, Student affairs, educational sources, external sources of informational foothold management, facilities, humanity sources, financial management, technology, security
2. Enviroment of teaching and learning	Formulating the educational program, the training sources management, providing training concept, training concept presentation, methods of teaching, choosing educational materials and equipments, analysing
3. Empowerment of Manpower	Training box management, training students, training parents and trainers, training courses, using the technical technicians, personnel of educational system, Smart School Operations Support Team, Coordinator and keeping track connector of Smart School affairs
4. Hardware factors	establishing the local networks at school, existence of enough numbers of computers for students, existence of appropriate number of laptop for teachers, tooling classes to smart boards, tooling classes to video projector, tooling school to digital microscope

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| 5. Software factors | Improvement of educational concept as a multimedia by students, using the multimedia educational concepts in presenting lessons by teachers, active membership in porotal of smart school, scientifiic Cooperation and interaction with other smart schools |
|---------------------|---|

Second question: analyzing the features of Iran making smart in curriculum elements of

Table 2. Curriculum elements based on making smart in Iran

ELEMENTS	FEATURES
purposes	1. Improving the Effectiveness and efficiency of formal teaching and training system 2. Extension and provision of teaching and training judgment 3. Training the thinker and familiar with technology humanity force 4. Creating the dynamic and attractive environment for Efflorescence of talents and Incidence of Individual and collective creativity of students 5. Promoting the experiential, research-centered and student-centered learning in educational processes 6. Training and improving the skills of teachers and students 7. Improving individual abilities and capabilities 8. Helping students to grow a comprehensive and balanced in intellectual - physical - emotional and mental dimensions 9. Preparing students for living in the age of information and communications 10. Equipping schools with minimum facilities needed for making smart 11. to continue learning outside of school
content	1. Electronic content 2. Prepared educational content as a multimedia 3. obtained Content from the Internet and cyberspace 4. Content provided by Education and training 5. Content provided by teacher 6. Content provided by student 7. Content generated by companies and educational institutions 8. Generated content by software and appropriate tools of content production 9. obtained Content from Educational assistance software 10. Obtained content from informational networks
Methods of teaching	1. to be Student-centered and engage more senses in them. 2. cause to do research activities as a team. 3. cause Enhances creativity, thinking, problem solving and a willingness to the group activities. 4. cause Encouraging students to reinforce the skills of working with computers and the Internet. 5. cause searching and finding the suitable electronic content on the Internet network. 6. cause Encouraging students to use the software to produce electronic content. 7. encourage Students to ask questions and do individual and group research. 8. increase Interaction between students, teachers and parents by help of IT . 9. cause all-round growing of talents and willingness to learn and improving their individual abilities. 10. to be Flexible and tailored to the needs, individual differences, abilities, aptitudes and learning styles of pupils. 11. - Learning better by deeper understanding of concepts instead of memorize lesson content by using the ICT.
assessment	1. system of monitoring and evaluation is as a Smart and electronic 2. in the evaluation of This approach computer affects alot. 3. In this approach, a variety of electronic , remote and online test were used. 4. Evaluation of students is doing constantly and every day instead of the end of season or semester. 5. Higher stages in the areas of cognitive, emotional and behavioral are considered. 6. The evaluation areas in this approach is comprehensive and in addition to final evaluation includes continuous and input. 7. Forms of assessment in this approach are as a class, school and focused evaluation . 8. In evaluating characteristics such as integrity, implemented in a variety of forms, timeliness, student-centered and continuess are respected. 9. Assessment in some lessons is doing as electronically and non-electronically in some other subjects. 10. Informing parents about their child's academic progress through school automation system and e-mail takes place.

Third question: analysis of curriculum elements from Experts' perspective

Description stage

In this stage, data and information were investigated and studied from different sources to describe the curriculum features based on making smart, according to the evidence and information obtained from various sources or direct observation and study of documents and others' reports .

Malaysia country: The Smart School plan was implemented in 1998 with cost of 78 million dollars (about 300 million ringgit of Malaysia). A plan that implementation of it began in 1999 with 90 schools. This plan was a part of the Malaysian government's reaction to the requirements of the process of "globalization". Malaysia has started to create a knowledge-based economy since the mid-1990s. Informational and communicational technologies form infrastructure and spine of knowledge-based economy of Malaysia.

Australia: ICT learning strategies had been an essential element of Australian schools in the past 20 years. The Australian educational system, comprehensive solutions in the areas of education, learning and management was not introduced in schools but also was designed separated program for each of them. The other is that Australian schools have gone toward privatization in recent decades. These private schools have designed their own specific strategies in the field of

information and communication technologies. Some of the private companies provide the students' equipment needed. The third point and most important subject is that lesson planning, curriculum development and program implementation in schools of Australia, are the responsibility of educational specialists.

Finland: Finland had been leading and ranked first among educational systems of the world for years. In other words, can be Finland's educational system considered as the most successful educational system in the world. Evidence of this superior is obtaining best grades in a variety of global test by students in Finnish. Students usually have free and fluid curriculum that has been developed according to their personal needs and interests. Games, fun and joy is an integral part of the Finnish Children's curriculum. Finnish schools have equipped with the most modern and most up to date educational technologies and use of coding, intellectual games, game programming and designing equipments and tools of Educational assistance were encouraged by government and are welcomed in schools.

The interpretation stage

This stage includes checking the information that researcher has described it in the first stage. At this stage, objective, real and regular description of educational systems specifications of each of these countries related to curriculum based on making smart has been done as below.

Malaysia

Elements	Features
purposes	physically, mentally, emotionally and psychologically development and training of students - training thoughtful and familiar with technology humanity resources- increasing the public participation in educational field (teachers, students, managers, school employers, parents and different community stages) - providing opportunities to improve the abilities and talents of students

content	Creation and strengthening of Challenging thinking and motivation learning in students - trainings based on network and electronic lesson materials - interactive story books - games and software of simulation - the self-tutorial module - a computer game of solving problem - artificial intelligence module - videos - online library - news bulletins - researchers
Methods of teaching	Providing a combination of learning strategies to ensure the Comprehensive growth of the talents and abilities of students To learning encourage and promoting creativity and student-centered activities and improving individual abilities- Providing status for a variety of teaching methods to improve classes with different strategies of teaching-learning
assessment	in Smart school, assessment is designed in different forms: assessment in the classroom, school evaluation, and focused assessment - Evaluation Class: during training and after training to determine the starting point of work for pupils, identifying strengths and weaknesses points of student, assessment of student improvement, determining effective teaching method and evaluating the rate of mental abilities - evaluation of teachers: at the end of each section of the course to determine the rate of output purposes achievements of each part of the training - focused evaluation: operating at the time of students' preparation to determine the attainment of needed goals for promotion to the next educational stage and determining mental abilities based on multiple numbers

Australia

ELEMNTS	FEATURES
PURPOSES	Preparing students for entry into society and employment in the future digital world- Training workforce for society based on technology - being responsive of the education to the changing needs of the workforce.
CONTENT	The curriculum is compiled by the Education Ministry, but teachers are allowed to modify the courses and propose them proportional to the interests and needs of students -Content is chosen and compiled proportional to the characteristics and individual needs of students - Teachers use electronic and digital contents- in electronic learning process the lesson subjects are accommodated flexibly and customizable and practice for students.
TEACHING METHODS	a variety of training methods is used in Australia such as student-centered learning, student research, group projects and presenting conference, video conferences, e-learning, interactive classes, using new tools of educational

	assistance and television, film, tape recorders and other facilities -They become aware of how to effectiveness the concepts and ideas by making information and informational productions and choose the most suitable media and transfer of especial ideas – students work individually and as a team group to reach intended targets.
EVALUATION	Evaluating methods are diverse and include individual research projects, group assignments, oral and visual presentations, using technologies such as PowerPoint, podcast and video cast and also more traditional methods of tests and class assignments.

Finland

ELEMNTS	FEATURES
PURPOSES	Connecting of all schools to internet network and different informing networks -Equip all schools with computers - Increasing the students skill in using technology and computer, having equal training opportunities for men and women - Creating training motivator in order to efflorescence the potential talents of children - Attention to individual students and trying to prevent dropouts
CONTENT	Each school has its own curriculum, emphasis on innovative programs and games in the school environment - Using content production of training courses - not giving pre-prepared lesson content to schools and giving a general frame to schools for teaching
TEACHING METHODS	Each teacher has its own way to teaching; using developed teaching methods- Utilization from new technology – Utilization from informational networks - paying attention to independence of children – network teaching – students have an active role in learning and planning.
EVALUATING	Not taking standard exams from children - Non-refoulement in giving score to students till eighth class – not giving a lot of assignments, lack of exam and competition between schools - Doing continuous and inseparable educational evaluation in home and school - promoting students to higher levels with appropriate performance in evaluation - specialty more teaching hours for weak students

Adjacency stage

In this stage with the purpose of adjacency, information and data have been collected

in different countries which in this research there are three countries of Malaysia, Australia and Finland in terms

of elements and obtained main indicators in pervious stage and based on similarities

between features of curriculum in different countries has been analyzed.

Table 3. The status of curriculum in three countries of Malaysia, Australia and Finland in terms of similarities

Elements societies	Malaysia, Australia and Finland
purposes	1- Gaining key skills to meet the needs of the informational society 2- Considering to gain skill of answering problem by students 3- providing opportunities in order to improve the abilities and talents of students 4- right and suitable using from computer and digital tool in curriculum in direction of emergence of creativity 5- training thoughtful manpower and familiar with technology 6- meet the needs of society
Content	1- using electronic lesson materials 2- using the making smart as s tool for improve the learning of the curriculum content 3- synthesis of technologies in all lesson subjects 4-considering to knowledge and skill of using information technology and communications in curriculum content
Teaching methods	1- using visual and auditory media 2- using active and dynamic methods 3- using answering problem method and gaining skill 4- considering to individual differences 5- using information technology and communications in learning and teaching process 6- emphasize on learning in group 7- emphasize on personal innovations 8- considering to self- reliance and self-control 8- emphasize on student-centered approach
Evaluation	1- using proportional tools for awareness from realization of educational goals 2- using stage and final measuring 3- measuring from learning environments 4- using electronic tests 5- using technology in order to measuring abilities and skills of students

Comparing stage

In this stage with the purpose of comparing, information and data collected in different countries which in this research are three countries of Malaysia, Australia and Finland in terms of elements and main indicators obtained in pervious stage and based on differences among features of curriculum in different countries has been analyzed.

Table4. The status of curriculum in three countries of Malaysia, Australia and Finland in terms of differences

Elements societies	Malaysia, Australia and Finland
purposes	1- the student-centered is one of the purpose of the making smart in Malaysia which has not been considered to that in other countries 2- in Finland have mentioned to expected small skills and abilities due to using technologies in curriculum but in Malaysia and Australia have known sufficient to express generals 3- in smart curriculum of Malaysia the physical, subjective, emotional and mental training of students have been considered important but in Australia and Finland the skills have been considered important 4- training the thoughtful human is one of the important purpose of Malaysia but in Australia production of thought is important and in Finland they have not given any matter 5- the approach of Australia to technology and communications for schools, compared with centered pattern of plan of smart schools is completely non-centered. 6- Australia has more considered to online curriculum.
content	1- in the field of curriculum content in Australia and Finland the content of curriculum have been mentioned generally and tiny programs probably are formulated in regional and local programs but it isn't in the same way in Malaysia and used contents have been expressed. 2- In Australia more importance is given to effects of new technologies on society, culture, morals and policy than other two countries 3- in Malaysia, technology have been used for strengthening the challenging thought and learning with motivation in students. In Australia students are learned that technologies can affected people and their environment and in Finland emphasize on using technology as a tool. 4- in Malaysia contents including

	interaction book stories, simulation games and softwares, computer games of answering problem, online videos and libraries have been used but in Australia students choose by themselves the kind of hardware or software and organize their information and in Finland the content is include word processing, use of office software, multimedia applications and communications.
Teaching methods	1- Finland more than other countries has acted to synthesis the making smart in curriculum non-centered, in this country more authority has been given to schools and considering to population distribution the regional and local approaches are emphasized. 2- In Finland and Australia is emphasized on participatory works more than Malaysia. 3- In Finland the authorities are given to teachers in order to use technologies for helping to learning of educational content but in Australia they are students who choose the kind of tool and method. 4- in Australia students themselves choose the most suitable media for learning and evaluate the workmanship of informational technologies and mix the information visually and written and review the reaction of themselves and others to this information but there isn't this process in Malaysia and Australia.
evaluation	1- Australia has mentioned to all expected competencies and abilities from students at all educational levels because of combined education policy between centralization and decentralization. 2- In Malaysia at smart school the evaluation in different forms of evaluation are designed in lesson class, school evaluation and emphasize on doing continuous and inseparable educational evaluation

Fourth question: analyzing the aspects of curriculum model based on making smart in Iran

At first, based on library study and adaptive evaluating the important factors in curriculum based on making smart was collected to analyze the aspects of curriculum model based on making smart in Iran. and based on that the questionnaire consisted of 99 questions was formulated and after evaluating the validity of the questionnaire through consultation with academic experts and analysis of the reliability of the questionnaire by using Cronbach's alpha in a preliminary study that was obtained equal to 96% the questionnaire is used to survey the aspects of the program model based on making smart in Iran. Then the factor analysis method and Friedman test has been used to analyze data. According to that the purpose of this research was recognizing the related factors with curriculum based on

making smart, the exploratory factor analysis was used for recognizing and was acted in the way that the factors be recognized that were very important in creating curriculum based on making smart.

the benefit of the correlation matrix for finding factor was used through KMO test and sphericity of Bartlett test before implementation of exploratory factor analysis which the amount of the KMO is equal to 0.827 that according to significant level of this test, the significant level is acceptable (Zare chahooki, 2010, page 4). The significant level of sphericity of Bartlett test was obtained less than 0.001. Overall, the results of both tests were satisfactory. The suitability amount of KMO indicator (0.82) endorsed the benefit of items for extraction of the factors. Also the significance of Bartlett test was the reason for inside correlation of variables and possibility to creating factors collection.

Table 5. Kaiser-Meyer and sphericity of Bartlett test

Kaiser-Meyer test		0.827
sphericity of Bartlett test	Chi-square	2458.418
	Degrees of freedom	249
	Significance level	0.001

The factors were chosen that special amount of them had been more than 3 order to indicate the number of related factors to quo status of curriculum based on making smart in Iran, that based on this in this analyze in quo status 2 factors have been extracted that in general have

covered 32 variables. The named extraction factors have been given in table (6). As it's seen in table in quo status, two factors of hardware and empowerment manpower have allocated the most correlation with total factors of curriculum based on making smart to them.

Table 6. Anatomical variance of key factors of quo status

factors	Hardware factors	empowerment manpower
Special value	4.62	4.02
Percentage of variance	16.925	16.113
cumulative variance	16.925	34.624

Table 7. Rating factors in the quo status based on Friedman test

factor	Average rank
Hardware factors	4.80
empowerment manpower	4.15

The factors were chosen that special amount of them has been more than 3 order to indicate the number of related factors to desirable status of curriculum based on making smart in Iran, that based on this in this analyze in desirable status five factors of 1- learning and teaching

environment 2- hardware factors 3- empowerment manpower 4- management system 5- software factors extracted that in general have been covered 99 variables. The named extraction factors have been given in table (8)

Table 8. Anatomical variance of key factors of desirable status

Factors	Teaching and learning environment	hardware factors	Empowerment of human resources	Management System	Software factors
Special value	4.41	3.89	3.23	2.62	2.53
Percentage of variance	15.89	15.15	14.66	12.39	12.28
Cumulative variance	15.89	32.06	46.71	59.34	74.62

Table 9. Rating factors in the desirable status based on Friedman test

Factor	Average rating
Teaching and learning environment	4.70

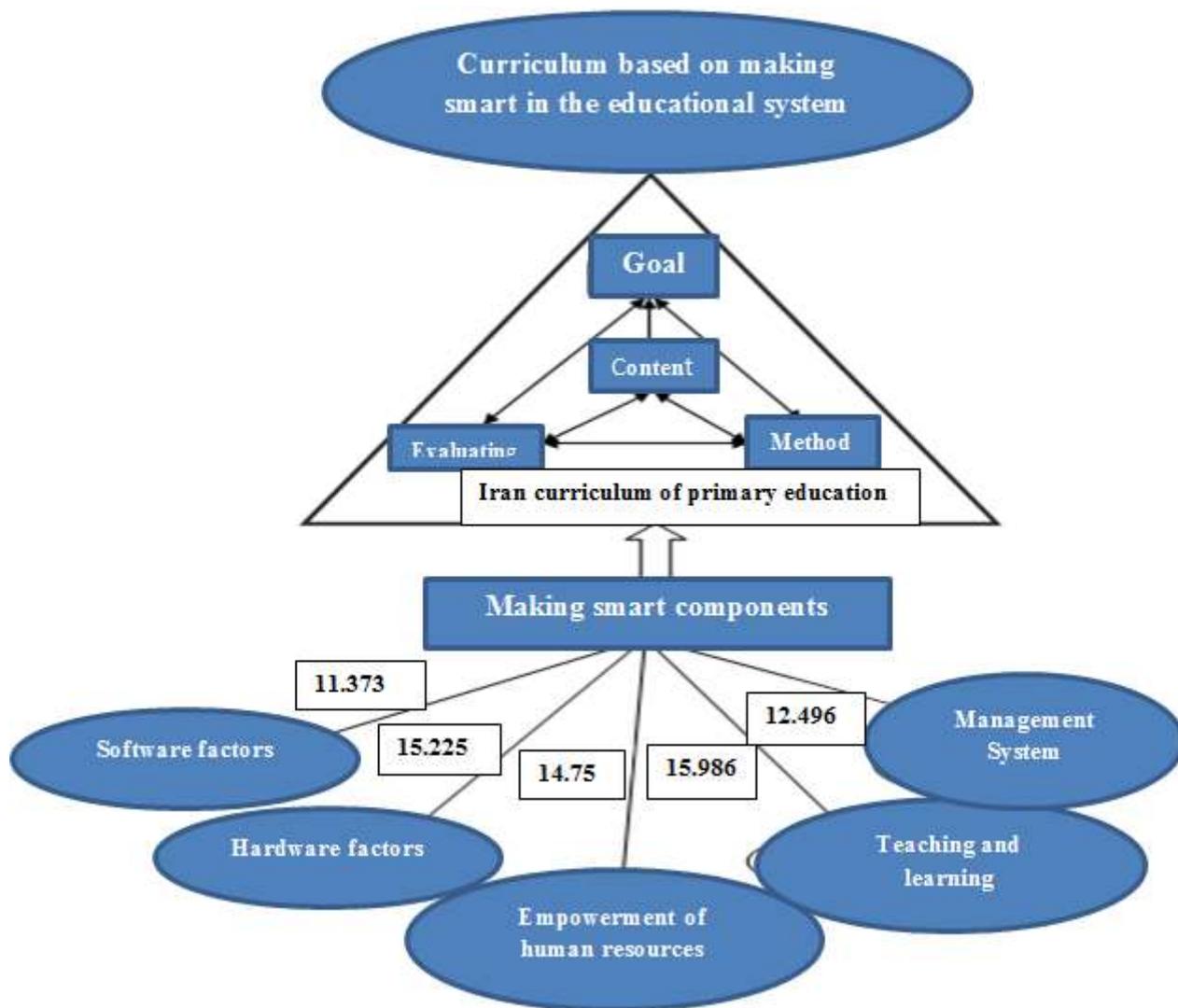
Factors hardware	3.91
Empowerment of human resources	3.30
Management System	2.72
Software factors	2.60

Discussion and conclusion

In this research, the researcher has evaluated the quo status of curriculum based on making smart in Iran with an exact and meticulous look and by doing necessary analyses has determined the

portion of each different aspects of curriculum based on making smart for educational system of Iran to present a pattern for curriculum based on making smart in Iran throw this way.

CURRICULUM MODEL BASED ON MAKING SMART



The results of this model is consistent with the results of some researches; including the research of Davoudnia (2014) which has evaluated as adaptive of smart second period high schools in Australia, Malaysia and Iran also by research of Kashan (Emamjome, 2007) which has evaluated as adaptive of ICT integration in curriculum of education of Finland, the UK, Australia, South Korea and Singapore in order to present the suitable plan for Iran.

Research suggestions

From sum of the findings, analyzing them, adjustment and interpretation of obtained data can be presented the following suggestions in order to clear the path of future researches and to operate the curriculum based on making smart:

Research suggestions for educational policymakers in applying the model

- A) It is suggested to create a section in order to this; means doing adaptive studies in centers such as office of International Cooperation to be applied the study and adjustment and become update the native curriculum during the year and continually
- B) Cooperation of Education Ministry with the Communications Ministry aim to telecommunications infrastructure in field of quick and easy access to the Internet
- C) More participation with private sector in the matter of making smart the schools in providing services in the field of technology equipment

Research proposals for upbringing the trainers

- A) It is suggested that the Educational Ministry to do the widespread survey from status of country's teachers about the process of curriculum based on making smart and to evaluate the willingness of teachers about creating the plan of

curriculum based on making smart due to inputs and outputs of educational system.

- B) Holding the proportional trainings, including training beside work, training groups, meetings of specialists association of curriculum , parents and trainers association for teachers and more freedom of teachers in accepting participation of implementation of curriculum based on making smart is suggested in order to increase the effectiveness of educational matters.

Research suggestions for curriculum researchers

It is suggested that interested and competent researchers to do this research in different educational periods and by this matter cause to pave the way of implementing the curriculum based on making smart in different aspects of educational system.

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