Presenting a Public Education Model for Iranian Red Crescent Society: A Comprehensive and Systemic Approach

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Abstract

BACKGROUND: Public education is considered as one of the most important methods for preventing and coping with natural disasters. So, providing a model for designing and implementation of these trainings is of great importance. This study aimed to do this.

METHODS: This was an applied research with a combined method of gathering the data. In qualitative part of the survey, the research tools were organizational documentations and semi-structured interviews with focus groups while in quantitative part, it was a questionnaire. Research population consisted of experts in public education, administrators and population planners. Purposive sampling was used to reach theoretical saturation of the data. To validate the model, 17 participants answered the questionnaire. In qualitative part, validity was confirmed by the participants and in quantitative part, content validity method was used. The reliability was approved obtaining Cronbach's alpha of 0.98.

RESULTS: Public education was imperfect in terms of organization, regulations, structure and process. A public education model based on components such as need assessment, design, implementation, evaluation and motivational mechanisms in both aspects of conventional and distance training was provided. Using t-test showed validity of the model in both aspects of conventional ($t = 0.25; P < 0.05$) and distance ($t = -0.17; P < 0.05$) training.

CONCLUSION: Based on the results, a comprehensive, holistic and systematic public education model in both conventional and distance is presented. To make the education more effective, some subsystems such as needs assessment, design, implementation, evaluation and motivational mechanisms should be considered.

Keywords: Training; Comprehensive System of Public Education; Red Crescent Society; Iran


Introduction

Iran is among the 10 most disaster-prone (natural disasters) countries of the world (1). This has been confirmed by the annual report of the International Federation of Red Cross and Red Crescent Societies (IFRC), which has announced Iran among the 10 countries with the highest rate of mortality in natural disasters (33 thousand individuals from 1995 to 2004) (2). If the necessary measures in this regard are not taken, the present situation can result in a crisis in our society. Crisis is defined as unanticipated incidents which are the result of natural events and human activities, which impose suffering and hardship upon a human community or society, and their elimination requires emergency and immediate action (3). It must be noted that disasters alone are not considered as crises; these circumstances become crises and must be managed when they cause hardship for individuals. Crisis management is considered as one of the aspects that must be planned, designed, and implemented before the
occurrence of a crisis, so that it can be utilized during and after a crisis. In this respect, public education on how to manage natural and unnatural disasters is of great importance.

Public education consists of all activities related to the training of different groups of society regarding aid, rescue, and first aid (4). In fact, it is the general knowledge of individuals within a society which decreases the individual and collective vulnerability in case of threats and disasters. Public education is the attempt for initial needs assessment and evaluation of the present situation, and planning for and continuous effort for the creation, maintenance, and sustainability of the mutual understanding between the educator and society (5). This process of mutual understanding and empowerment of the society will enhance social capital and pave the way to achieving the desired goals. In other words, use of investments and realization of anticipated goals and programs depends entirely on competent, efficient, and motivated individuals with a comprehensive knowledge of objectives, policies, and strategies and who continuously increase their knowledge and skills through a comprehensive training system (6).

Education is an organized and structured process through which individuals acquire the necessary proficiency for certain responsibilities and activities (7). Another definition of education is a set of planned measures that prepare individuals for providing the required services professionally and obtaining the satisfaction of services recipients (8). Education necessitates the implementation of programs for the improvement of individuals’ ability and facilitation of access to knowledge, skills, and novel abilities for the improvement of performance. (9)

Education requires regular effort for the facilitation of learning of the required skills (10). Education is the establishing of the foundation for the continuous transformation and improvement of individuals’ behavior and planning for future behavior correction based on the results of measurement and evaluation of the satisfaction rate of service recipients and organizational performance (11).

Education consists of a wide range of measures and processes illustrating the map or path of education implementation and determining the cycle and sequencing of operation. Different models exist for the education system and numerous processes have been suggested for it. Education based on processes refers to cases such as being a phenomena, interrelated changes or approaches, being purposeful and dynamic. Some educational models will be briefly explained in this section (12). Mark, a scholar in the field of human resources management, believes education to consist of the 4 stages of needs assessment, designing, learning method selection, and learning results evaluation and 18 secondary measures (13).

Researchers have divided education into 5 main stages of analysis of needs, educational design, and program development, implementation, and evaluation. Stone divides the education process into 3 main stages of needs assessment, implementation, and evaluation. Hackett states that education consists of 7 major stages of educational needs determination, learning opportunities selection, educational design, educational material and equipment, education method determination, learning evaluation, and evaluation and revision of program (13).

Vaughn defines education as an organized or systematic process which must continuously revise activities and adjust its path and direction toward predetermined goals through receiving feedback. This education model has a number of distinguishing characteristics. First, this process focuses on the underlying factors of education planning and considers the three main elements of organizational context, learning characteristics, and education and improvement context as the inputs of the design and implementation system of organizational training. Second, for the determination of education needs, it considers individuals’ growth opportunities as a needs assessment factor. Third, it emphasizes the use of managers and administrators as teachers and a stage of the process has been dedicated to this. Finally, in the organizational training evaluation, the calculation of return on investment (ROI) has been highlighted.

Some experts in organizational education planning and management have emphasized teaching skill and teaching methods and tools in their education model or process. A well-known model in this regard is the Instructional Planning Model Development and Implementation Plan (IMPACT) model. This model, meaning effecting or impacting, has been designed by Richard Chang and, in spite of its simplicity, is very effective and beneficial. The title of this model consists of the acronyms 6 stages of
organizational training; needs assessment, education approaches design, learning tools production, use of appropriate teaching techniques, calculation or evaluation of results, learning path accuracy guarantee (13).

Among different education system models, the Goldstein model is of great importance, because it scrutinizes the education system in a systemic situation (through consideration of the input, process, output, and outcome). This can play an important role in the efficacy of education, because it emphasizes the clarification and precise determination of education goals, accurately designed and controlled learning experiences for the achievement of goals, and performance criteria and evaluation-based information (14). On the other hand, the international ISO standard for education (ISO10015), developed by the Quality Management and Quality Assurance Committee ISO/TC176 and the subcommittees (SC3) in 1999, presents solutions that assist organizations and human resources in training-related issues. The role of this standard is to develop guidelines for organizations for the identification and analysis of educational needs, designing and planning education, preparation for education, evaluation of education, control and improvement of the process, and higher efficacy. In addition, its goal is to assist organizations to transform their education into a more effective and efficient investment.

A planned and systematic education process can assist an organization in the development and improvement of its capabilities to reach qualitative goals. Education process in ISO standard has been discussed in 5 stages; determination of education needs, educational design and planning, training executive management, evaluation of training results, supervision (15).

The incorporation of the Goldstein model and quality management standard can provide a comprehensive education model with systematic approach and holistic approach. In the systematic approach, the researcher, through consideration of the definition of system (a collection of components and the correlation between them which are dependent upon or related to each other through certain characteristics and constitute a whole with their environment), considers the educational system as a system consisting of different elements and as a subsystem in a larger system (such as an organization). Considering a system as a subsystem means that the system itself in a macro view is considered as a component of the system. For example, education, as a system consisting of input, process, output, and outcome, is considered as a component of the human resources development system. The proposed model consists of different stages; assessment, training and improvement, and educational evaluation.

Assessment consists of two functions education needs assessment, and education goals determination. Education needs assessment: This stage of the education process provides the necessary information (input) for the designing of the program (16).

Education needs assessment entails organizational analysis and requirement (tasks) analysis, and analysis of individuals, which evaluates the weaknesses and strengths of the individual (17).

Education goals determination: The determined needs are the basis for the determination of the main objectives of education (18). These objectives are the main input and criteria of the designing of the education plan, and evaluation criteria. To perform this role, objectives must contain the expected behavior of learners after completion of education.

Training and improvement: In this stage, based on the information obtained from the first stage, a suitable program for the achievement of goals is developed and implemented. This stage also consists of two functions; educational design and education implementation.

Educational design: In this activity, based on the determined goals and considering the available conditions and resources, and learning principles, the education practices, procedures, content, material, and tools are selected and combined in an integrated design in a way to achieve the educational goals and incorporate the quantitative and qualitative characteristics of learners (19).

Education implementation: In this activity, the developed education plan is materialized. The factors in this stage are the learners and teachers. The support services also play an important role in the facilitation and improvement of the process and program implementation status. Researches have shown that, in the implementation of training courses, the consideration of the performance method of the education process and its implementation is of great importance (20).

Educational evaluation: Evaluation is defined as the process of systematic collection and interpretation of evidences that results in value
judgment (21). In this stage, the adequacy rate of the training plan is measured in terms of achievement of goals. The evaluation process is centered in three major axes; education goal-based evaluation criteria, assessment and evaluation of results using evaluation design and methods, and internal feedback (22).

On the other hand, public education is the collection of trainings aimed at increasing public knowledge on dealing with natural disasters and decreasing the damages of these disasters and occurrences (5).

The role of public education in the prevention of accidents emphasizes learning and behavior modification among members of the society because learning constitutes the foundation of human behavior. Behavior is the result of motivation and motivation arises out of needs. Therefore, a subject discussed in the field of behavior and its modification is the determination of factors that are effective on the creation and persistence of behavior (individual and social), the circumstance of their modification and influence, the strategies and tools that can interfere in this modification, and the degree of effectiveness of each strategy and tool. An important tool of causing change in individuals (for goals) is education. In the preparation for natural disasters, public education has a prominent position and improves disaster preparedness (in order to decrease the effects of natural and unnatural disaster). It also provides the grounds for public awareness of occurrences that can affect individuals’ life at a national or regional level. Moreover, it creates awareness of secondary hazards in disasters, identification of ways to decrease the effects of disasters using the forces available in society (members of society and executive agencies), the awareness and knowledge necessary for people to increase prevention force, preparation for and coping with disasters. It also establishes the grounds for the cooperation of the people with executive agencies and responsible institutions (23).

It should be noted that at the time of disasters, people are one of the first groups present at the scene of the disaster to help the injured. Therefore, their lack of knowledge and skill not only causes new problems, but also disrupts the aiding procedure. The prevention of such circumstance requires sufficient knowledge and skill on various disaster-related fields. Public education can prepare a society for encountering a disaster and can be effective in creating safety and security for its people. It is due to this that public education has increased in importance and gained a special status in recent decades, and its delivery method has been increasingly developed through the in-depth understanding of various sciences. This may result in the promotion of individuals’ abilities and knowledge. It must be noted that education in any field must be based on accurate planning and the latest education content and appropriate education technology, be able to discover methods which encourage public participation, and equip professional human resources with these techniques and skills. In this way, the processes of planning, organization, monitoring and evaluation, and educational goals and activities can be achieved through the participation of the community and other resources (6).

In this regard, and to achieve the determined goals and to coordinate professional decisions on public education with its implementation, aid and rescue team activities and public education (in line with the comprehensive aid and rescue plan of the country approved on 6/4/2003 by the board of ministers and based on Article 44 of the third economic plan law) was approved. They began their activity in accordance with Row 1 of Article 34 and Row 1 of Article 36 of this comprehensive plan toward aid and rescue and public education with the responsibility of the Iranian Red Crescent Society (IRCS).

Based on Article 40 of the comprehensive plan, the IRCS held joint meetings based on the agenda of the determination and approval meetings. Moreover, based on Clause 14 of Article 15 of the Executive Regulations of the National Disaster Management Organization approved on 12/12/2009, the activities of aid and rescue teams and public education were combined and conducted under the title of the Iranian Relief and Rescue and Public Education Committee (24).

In this respect, the IRCS held public education courses, rescue and first aid courses, voluntary foundation courses for students, and voluntary basic skills courses. Furthermore, the IRCS coordinated and held special occasion programs on dealing with accidents and disasters and public education, produced and distributed educational animations, planned for the prevention of and training of rescue and first aid at time of road accidents, performed nationwide earthquake drills
in schools, and compiled educational brochures on dealing with disasters (25).

It must be acknowledged that fast-paced changes in all affairs, especially in advanced technology, and the specific complexities of modern societies have created a situation in which there is no option but to train individuals. Today, the government expenditure per student (GDP per capita) of different developed countries shows an increasing trend. Experts believe that the cost of education is an investment and the necessity of addressing the topic of education has gained a higher status and significance (26).

Due to the extent, importance, and status of public education and the widespread and diverse recipients of public education, the development of an inclusive and comprehensive public education system with the aim of improving awareness and skills of community members is of great significance.

Various researches have been conducted on the effect of public education, some of which will be discussed in this section.

In a study on the effect of public education on disasters, public education in this regard for students was found to be very effective on the reduction of its negative impacts (27). Furthermore, the results of another study showed that public education prevented hazards associated with occupational exposure (28). Another study reported that public education is the most important and effective strategy in managing the consequences of unpredicted disasters (29). It also indicated the presence of sufficient desire and motivation for learning rescue and aid skills among different social groups, which should be considered as an opportunity in natural disasters by disaster management administrators and authorities (29).

On the other hand, studies have shown that, in planning for preparation for and management of disasters, the role of people, as the most important and largest beneficiary group, has been overlooked. Thus, the damaging effects of disasters can be controlled through public education implementation before the occurrence of disasters, especially through public self-aid program which is one of the important pillars of disaster preparedness programs. This education program should be tailored to the educational needs of the people and factors such as age, gender, occupation, culture, social and economic characteristics, and religious beliefs should be taken into consideration (30).

Therefore, the present research attempted to determine the components and model of public education in the IRCS, based on its diverse recipients and its interaction with social groups regarding disasters and accidents, which would grantee its required efficacy.

### Materials and Methods

The present study, in terms of objectives, was an applied research and, in terms of data collection method, was an integrated study in which quantitative and qualitative methods were used consecutively. Initially, education damages were identified through the evaluation and analysis of organizational documents, interviews with experts, and focus groups. Subsequently, a desirable education model was designed based on the identified damages, and theoretical principles and background studies. Finally, the designed model was presented to experts and their views were used and analyzed for the validation of the model. In the qualitative section, the study population consisted of the available educational documents, managers, policy makers, planners, and education specialists of provincial headquarters and centers, and superior documents of the IRCS such as the IRCS strategic plan. In the quantitative section, the study population consisted of subjects studied in the qualitative section including interviewees and participants of focus groups. The research tool, in the qualitative section, was content analysis of organizational documents, semi-structured interviews, and focus group and, in the quantitative section, a questionnaire based on the results of the qualitative section (to validate the model). In the qualitative section, purposive sampling was conducted until theoretical saturation of data. In this section, 20 interviews were conducted and 5 focus groups were held. In the quantitative section, the sample volume was 17 individuals. The validity of the tool in the qualitative section was assessed through recheck by the participants and researcher check. The validity of the tool in the quantitative section (questionnaire) was assessed through content validity by experts and interviewees. Its reliability was assessed using Cronbach's alpha. The achieved Cronbach's alpha was 0.98 which shows the high reliability of the tool.

### Results

The mean age of the studied individuals was 38.5 years, and their mean occupational and
management experience was, respectively, 12.4 and 7.2 years. Moreover, 43.8% of the participants were men and 56.2% were women. Among them, 6.3%, 18.8%, and 74.9% had a PhD, master’s degree, and bachelor’s degree, respectively. The results of educational damages determination showed that these damages can be divided into 3 categories; organizational damages, laws and regulations, and structure, and finally, the training process (Table 1).

**Table 1. Damages of public education**

<table>
<thead>
<tr>
<th>Damages</th>
<th>Items related to each damage</th>
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<tbody>
<tr>
<td>Organizational</td>
<td>Lack of human resources skilled in training, lack of overall funds in education, lack of adequate allocation of funds to public education, lack of specific education space, lack of consideration of education as the first priority of organizations, resistance of provinces against the establishment of a standardized and regulated educational procedure, lack of long-term efficiency of education, issue of maintenance of trained forces in the IRCS (trained forces are not official personnel of the IRCS and their connection is discontinued after the training), poor organization of instructors, lack of accreditation of IRCS’ records by other organizations, lack of privatization of public education, lack of cooperation of qualified and experienced instructors due to low tuition rate, managers’ lack of faith in the status and importance of education, insufficient budget allocation to the crisis management headquarters, inappropriate approach to the topic of crisis management (Iran is in the opposition and restoration phase), lack of use of public education budgets on the determined Rows, lack of forward planning by managers and authorities and community members regarding crisis in the country, lack of sustainable investment on crisis management, lack of educational researches on activities of the IRCS, limited physical space and its poor management, negative attitudes toward education, poor development of self-aid culture and skills among community members, poor implementation of education programs for the reduction of the effects of disasters, poor cooperation of governmental and nongovernmental centers and institutions in public education development, poor organization of joint operational exercises with other related organizations, lack of modern educational facilities, the IRCS’ inattention to provincial education administrators’ opinions</td>
</tr>
<tr>
<td>Laws, regulations, and strategies of the organization</td>
<td>Constant variation of educational strategies, committee members’ lack of knowledge of the educational environment in the IRCS, incompatibility between regulations and guidelines and the real circumstances of provinces, to the goals of the IRCS especially aid-related issues in training, lack of preparation of a comprehensive education handbook, presence of unenforceable items on the executive education guideline, lack of provision of an educational handbook based on the circumstances of different areas, poor implementation of education regulations, flaws in guidelines, incompatibility of regulations regarding disasters and accidents</td>
</tr>
<tr>
<td>Education system structure</td>
<td>Inappropriate structure of the crisis management headquarters (each organization and ministry has a specific responsibility and cannot undertake a specialized issue such as crisis management), lack of cooperation of provinces with the IRCS, the ambiguous structure and framework of the IRCS’ education system, of personal preference-based actions of authorities especially in provinces, lack of delegation of authority to administrators especially provincial education administrators, lack of a suitable education structure in the center based on recipients (youth, volunteers, and etc.), excessive complexity of the IRCS’ educational system (considering the importance of the simplification of processes and procedures in the world), lack of procedural uniformity in in the admission and enrollment stages of educational courses, lack of experts in the field of crisis management, lack of full-time faculty members, parallel action of relief and aid-related organizations, lack of a single authority in crisis management, poor intersectoral collaboration regarding in-service training, overlapping of education and research responsibilities of the organization with that of other organizations in the country, poor organizational structure for holding joint courses with the International Federation and other countries</td>
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</table>
### Table 1. Damages of public education (continue)

<table>
<thead>
<tr>
<th>Damages</th>
<th>Items related to each damage</th>
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<tbody>
<tr>
<td>Education process</td>
<td>Neglection of needs assessment and lack of a documented model in this regard (poor scientific needs assessment in education), performance of needs assessment in the Organization and Methods Office and the Department of Education, poor scientific need assessment in public education, educational courses which have not been localized or are not tailored to the needs and disasters of the area, out-of-date education, incompatibility of educational courses with recipients’ needs (Educational needs are usually determined by administrators at the headquarters and provincial administrator and are not compatible with individuals’ needs and the circumstances of areas.), unscientific needs assessment performance.</td>
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<tr>
<td></td>
<td>Inattention to planning mechanisms (incompatibility of education form and content in some education models), inefficacy of some education courses, out-dated knowledge of teachers and instructors, lack of a database software for the participants of educational courses [This will result in a lack of classification and grading of educational courses for different social strata connected to the IRCS (high school students, university students, personnel, freelancers, and workers), lack of timely reporting of education programs to provinces, inappropriate educational allocation in different branches of the IRCS (youth organization, volunteers, and aid and relief), lack of a comprehensive education software, negligence of virtual education, inattention to educational restrictions in educational courses planning, lack of knowledge and training of personnel regarding aid courses, impracticability of topics of taught courses, lack of development of novel aid learning and training methods, lack of development and strengthening of aid and relief education standards, lack of development of distance learning programs, lack of re-inspection of the syllabus of courses, lack of scientific documentation of experiential skills of rescue workers, lack qualitative development of public education, lack of development of management distance learning courses on disaster and accident-related fields, poor preparation of favourable education texts, resources, and material, lack of education method training courses for teachers.</td>
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<td></td>
<td>Inappropriate implementation of education courses: inattention to age requirements of recipients in the implementation of courses, lack of use of up-to-date education tools and teaching aids, lack of regional supervisor, lack of experts and officials visits and evaluation of educational issues in provinces, lack of standard education environments and tools and aids in provincial branches, complication of the implementation process of education programs, poor announcement of short-term courses in the IRCS.</td>
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<td></td>
<td>Lack of systematic supervision and evaluation of educational courses: low efficacy of educational courses, emphasis on quantity rather than quality of provided courses, lack of accurate evaluation of public education courses, lack of adequate supervision on public education, inappropriate evaluation of recipients, incompatibility of evaluation method with the recipients’ level of education.</td>
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<td></td>
<td>Inattention to motivational mechanisms in the education process: lack of motivation for recipients in the educational courses.</td>
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</table>

IRCS: Iranian Red Crescent Society

Based on the analysis of the determined damages and results of interviews with education experts, favorable IRCS public education status has been designed based the two characteristics of integrity (consideration of all elements of education) and systematic (education system element in a way that the system input begins with needs assessment and is continued with the education process from design to implementation and evaluation is the output and motivation mechanisms as feedback).

In the designed system, education is considered as a part of the organization and the elements, goals, and long-term strategic programs of the IRCS are considered as the input of the education system. In this model, education has been designed as a system and all elements of the system, including input, process, output, outcome, have been considered. In the education section, all components, including needs assessment, design, implementation, evaluation, and motivational mechanisms, were also considered.
Furthermore, based on the analysis of interviews, the public education model can be presented in the form of traditional education (educational courses with instructor) and distance education (educational courses through media and mainly promotional).

In the designed model, education system elements consist of educational needs assessment, educational design, and implementation of educational courses, educational evaluation, and motivational mechanism (Figure 1).

The model designed for traditional and distance public education follows a conceptual model (Figure 2).

Each of the elements of education in its three categories consists of components which are presented in table 2 and explained in the form of results of models validation.

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**Figure 1. Public education process model**

**Figure 2. Elements and components of public education in the Iranian Red Crescent Society**
Elements of the implementation subsection
- 1-analysis of education budget (pre-implementation measure), 2-development of education calendar (pre-implementation measure), 3-announcement and registration (pre-implementation measure), 4-provision of facilities and tool (pre-implementation measure), 5-teacher implementation (pre-implementation measure), 6-coordination (pre-implementation measure), 7-course implementation (implementation measure), 8-supervision on course implementation (implementation measure), 9-feedback obtained from supervision for the improvement of course implementation (implementation measure), 10-evaluation of learners (implementation measure), 11-evaluation of courses (implementation measure), 12-certification (post-implementation measure), 13-documentation of courses (post-implementation measure)

Elements of the needs assessment subsection
- 1-analysis of available disasters in the development of the optimal situation, 2-analysis of international courses in the development of the optimal situation, 3-analysis of scholars and experts’ views in the development of the optimal situation, 4-use of community members’ opinions for the improvement of the present situation, 5-study of the available and possible statistics of disasters divided by area for the improvement of the present situation, 6-implementation of courses for the improvement of the present situation, 7-determination of educational needs (titles of educational courses), 8-prioritization of educational needs, 9-documentation of educational needs

Elements of the design subsection
- 1-determination of learning fields, 2-determination of learners’ characteristics, 3-development of general goals, 4-development of special goals, 5-development of behavioral goals, 6-selection and development of content, 7-determination of teaching methods, 8-determination of educational media, 9-determination of initial evaluation methods, 10-determination of developmental evaluation methods, 11-determination of final evaluation methods, 12-feedback on the results of three evaluations in a new model (if necessary)

Elements of the motivational mechanisms subsection
- 1-use of appropriate and compatible education methods in external motivation (within the classroom), 2-use of appropriate and compatible education technologies in external motivation (within the classroom), 3-course attendance certification (outside the classroom), 4-material rewards in external motivation (outside the classroom), 5-use of advertisement methods in education in external motivation (outside the classroom), 6-emphasis of otherworldly rewards, 7-helping others, 8-the motivation of higher knowledge for better performance, 9-participation of learners in the education process

The results presented in Table 2 shows that all elements of the public education model in the traditional and distance education models provided 80% of expert opinions. In other words, the lack of significance of one sample t-test results demonstrates the lack of difference of these indices with comparable values which is 4 (80% desirability); this approves the model.

The subcomponents of this model are presented in a schematic figure (Figure 3).

Table 2. One sample t-test for the determination of the importance of elements of public education

<table>
<thead>
<tr>
<th>Model elements</th>
<th>Comparable values (4 or 80%)</th>
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<tr>
<td></td>
<td>Mean</td>
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<tr>
<td>Public education (distance education)</td>
<td>Educational needs assessment</td>
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<td></td>
<td>Educational design</td>
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<td>Educational implementation management</td>
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<td></td>
<td>Educational evaluation</td>
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<td></td>
<td>Motivational mechanism</td>
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<td></td>
<td>Total model</td>
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<tr>
<td>Public education (traditional education)</td>
<td>Educational needs assessment</td>
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<tr>
<td></td>
<td>Educational design</td>
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<td>Educational implementation management</td>
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<td>Motivational mechanism</td>
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<td>Total model</td>
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Discussion

Public education is of great importance in the IRCS and its effect on the reduction of possible damages of disasters has been demonstrated in numerous researches (27-30).

Therefore, the designing of model for this education is important and necessary. The approach used in this study and the public education model design was the concomitant use of systematic (18) and holistic approaches and consideration of the standards in the field of education (19).

In the model design, education damage determination, and organizational context and processes evaluation were taken into consideration. This model revealed that the consideration of public traditional and distance education is necessary. The designed model begins with superior documents of the country and IRCS, considers the education system as an organizational element, and presents the education process as systemic and process-centered. The education process in this model consists of elements which correspond with the results of researches and views of experts in the field of education. These elements consist of needs assessment, educational design, implementation of educational courses, educational evaluation which is in agreement with views of experts (15-20), and feedback which corresponds with research results and views of experts (26).

The education process in this model was designed with conforming to the general principles of existing approaches and their combination. In addition, the important element of motivational mechanism in education, which had not been considered in conventional educational models, was taken into consideration in this model, because education does not have positive results when it does not motivate the individual. The needs assessment subsystem, procurement of the support of senior managers of the organization, use of different needs assessment resources, adjustment of the desired and existing education status, gap analysis, prioritization of needs, and documentation of the needs assessment process were also considered in the model. Regarding education design, subsystems were designed and educational planning was conducted based on modern-day scientific models. However, models were performed and motivational mechanisms were mainly extracted based on operational models, and using academic and professional experiences of experts, specialists, and focus group participants, and interviews and expert opinion. The education effectiveness evaluation model was developed based on the Kirkpatrick Four-Level Training Evaluation Model and through its fitting to public education. Another point that must be considered in this form of education is that, due to the diversity and wide distribution of recipients of public education, this form of education must be divided into traditional education (presence in a classroom with a teacher) and distance education (using educational media and technology).

In conclusion it must be stated that the model designed for IRCS education is both a conceptual and operational model which has considered the scientific language in this field and has approved the scientific nature of the implementation of the existing model in the IRCS through qualitative research and collection of in-depth data on the existing situation and IRCS circumstances.

It is suggested that, as a first step, the IRCS education system be based on the general education model presented with a systematic and holistic approach. After the establishment of the designed model, it is proposed that education be initiated with needs assessment and ended with effectiveness evaluation. Possible feedback for the modification of each process should not be forgotten. The motivational mechanism model presented in this study is an operation model and its establishment requires the approval of high-ranking IRCS officials. Finally, it must be noted that the presented model cannot be flawless. It is the responsibility of education officials of the IRCS to eliminate any flaws through obtaining feedback at the execution level.

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Conflict of Interests

Authors have no conflict of interests.

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