

A Study of National Competitions of Technical and Vocational Skills in Iran and its Effectiveness in the Country's Place in the World Competitions

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Abstract: The present study is aimed at investigating the factors involved in the effectiveness of national competitions of skills in the 11th round of national skill competitions in July, 2010. The study was descriptive and data collection was administered through statistical sampling. Five hundred and eleven individuals chosen from among the elites of the province who were majoring in 26 different majors, 426 accompanying experts, and 26 proficient functionaries each for one of the existing majors participated in the study. Qualitative and quantitative questionnaires and face-to-face interviews with the functionaries in charge of holding the competitions were the tools used in the study. Based on Likert Scale, quantitative questions were categorized into three main groups: internal factors, external factors, and competition consequences. The obtained data were analyzed through SPSS 17.0 software. The results showed that the degree of enthusiasm in learning skills and the individual's ability, aptitude, and motivation were the most significant internal factors in achieving success. Educational equipment and facilities in technical and vocational training centers were recognized as the most important external factors affecting individuals' success. In addition, analyzing competition consequences showed that there was a high degree of accordance between provincial skill learning and national skill competitions. Moreover, experience transfer from experts who had taken part in the world competitions to the trainers and competitors in the past rounds was insignificant. [Azarchehr Sehat, Adeleh ebrahimi, **A Study of National Competitions of Technical and Vocational Skills in Iran and its Effectiveness in the Country's Place in the World Competitions**. *Life Sci J* 2013;10(1s):365-370] (ISSN: 1097-8135). <http://www.lifesciencesite.com>. 59

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1. Introduction

In recent years, Vocational and Technical Training Organization (VTTO) has made a great attempt to enhance the quality and quantity of its training so as to stay in line with its executive purposes and other countries. Among these useful attempts, holding national skill competitions and sending top individuals to the world competitions can be noted. These competitions are held annually in city, province, and nation levels. Holding these competitions is aimed at creating a healthy challenging environment among the nation's youths in fields of technical and vocational skills and finding talents, which makes it possible to evaluate trainees of technical and vocational system, compare them with the nation's craftsmen, and result in improving and enhancing national skill training (that was the charter of the 11th round of national skill competitions, 2010). One of the most outstanding benefits of technical and vocational training is that it enhances individuals' skills as a group of vocational and professional abilities at a national level (ILO's recommendation 195), expands their capacity, and prepares them to enter the market. Scholars (Colly, 2008) believe that by training skills, job creation can be achieved and employment opportunities can be

extended and enhanced because correspondence between technical and vocational training and the market's needs plays a significant role in a nation's prosperity in a universal scope (Mouzakitis, 2010) and industries (IŞgoren, 2009). These trainings; however, have not always been advantageous to meet the final goals and some factors have caused the trainees not to get employed in their favorite fields. Moreover, the owners of great industries believe that technical and vocational trainings are irrelevant to the existing industries and that trainees do not completely prepared to work because they lack sufficient work skills. These are among the most outstanding criticisms about such trainings (Ghorban-Hosseini, 1994). On the one hand, some have declared that, according to managers of technical schools, abusing is the most important reason for the private section to cooperate in technical and vocational trainings, and according to the managers of industries, the reason for that is the weakness of the private section (Abdollahpour, 2001). On the other hand, employers try to choose their employees based on some key abilities and capacities such as communication capability, command of English, information technology, technology expansion, and change in work style and innovation (Bagherzadeh, 2011). It

seems that different technical and vocational training centers do not provide the same trainings because facilities and equipment are not the same in all training centers, which in turn can affect the quality of training and learning. Scholars believe that correspondence between technical/vocational trainings and the labor market is a pathway for a country to succeed at universal level (Mouzakitis, 2010). Therefore, coordinating knowledge and industry in technical and vocational majors is a significant undertaking which can enhance the trainees' level of practical capacity as the owners of the industries expect.

1.1. Statement of the Problem

One of the best methods to investigate these weaknesses is to find them among the qualified trainees through interviewing. It seems that provincial elites in each major who are more capable of learning, their accompanying experts, and responsible functionaries who formerly participated in the world competitions can be the best choices for that purpose. According to the records existing in the secretariat of the national skill competitions, eleven rounds of national competitions have been held up to now. Now this question should be posed, "Is holding such competitions in line with the target goals, and what factors are involved in the effectiveness of such goals?" In other words, "Has VTTO succeeded in achieving these goals by holding such competitions?" In this regard, the present study is aimed at investigating the effectiveness of vocational and technical training in 11th round of national skill competitions held in July, 2010. And there is an attempt to study the factors enhancing the trainees' skills and the effectiveness of the competitions which is usually considered as the established ability as a result of training (Soltani, 2006). It is noteworthy that for the first time after this round of competitions, the professional committee including five provincial managers in chief and four competitions experts decided to select 10 majors for London world competitions to be held in 2011. This decision was made based on three key criteria: first, avoiding participating in majors which some countries take the first place every year and considering the number of countries taking part in each major (foreign evaluation), second, considering majors in which we have succeeded in the past (local evaluation), and third, interviewing directly with experts of each major. Based on these factors, 10 majors out of 26 were selected to participate in London world competitions to be held in 2011.

The study was descriptive and data collection was administered through statistical sampling. Participants were 511 provincial elites majoring in 26 vocational and technical fields, 426

accompanying experts, and 26 responsible experts who had participated in the world competitions formerly. Qualitative and quantitative questionnaires and direct interviewing with competitions functionaries were used as the instruments of the study. Questionnaires were distributed among the participants of 26 majors including wood industry (cabinet making and fitting doors and windows), poly-mechanics (automation), manufacturing, mechatronics, mechanical engineering - computer-aided design and drafting (CADD), CNC turning, CNC milling, information technology – software applications, welding, wall and floor tiling, plumbing and heating, electronics, web designing, industrial control, brick setting, robotics, jewelry, dressmaking (fashion technology), bakery and confectionery, car technology, landscape design, cryogenics, information technology of personal computers–network support, graphics design technology, and electrical installations. And according to the elites, their accompanying experts, and responsible experts, the effectiveness of holding these competitions in the trainees' proficiency at city, province, and nation levels was investigated.

1.2. Review of the Literature

Khalaghi (1990) has conducted a comparative investigation on the effects of technical schools located near factories versus those far from factories on the trainees' success. He concluded that trainees' success in practical courses and technical skills is significantly higher at schools located near factories compared those far from factories. Hosseini (1994) has studied the factors involved with unemployment of the technical school graduates. The results of his study showed that employers believe that there is no relationship between vocational and technical trainings and industries and that the trainees are not quite prepared to work. In addition, they believe that graduates' weakness in practical skills is the main reason for the latter. It is also claimed that technical schools follow outdated syllabi which is not in accordance with the needs of modern industry. Moreover, employers believe that since there is no conversation between technical schools and industry employers, the trainees' efficiency has declined. Ezazadeh (2003) has conducted a study titled, "Vocational and technical trainings towards supplying industry and manufacturing section." The results of his study showed that trainers of technical schools did not use modern technology in training vocational and technical skills and that the effect of technical trainings on industry and manufacturing in cities was ignored. Azimi (2006) has investigated the effects of vocational and technical trainings on the expansion of employment. The results showed that the trainees are not dynamic enough to take

advantage of opportunities, create new ideas, take risk, and initiate a new job using their individual or collective abilities and capacities.

Nivoathkin (2002) study has conducted an investigation titled, "Do vocational and technical trainings help eradicate unemployment?" The results of his study proved that such trainings have positive bearing on the trainees' employment status. This study also showed that whether the country in question is industrial or not has a positive relationship with success or failure of vocational and technical trainings. Therefore, Bagherzadeh (2011) concluded that these trainings should be appropriate for the regional needs. Johansson (2003) has studied vocational and technical trainings in developed countries and the effects of such trainings. He claimed that in industrial countries vocational trainings are paid close attention; therefore, correspondence between these trainings and the market's needs is a necessity. Mured and Carol (2004) have conducted a study titled, "A comparative analysis of vocational and technical trainings among youths of North Ireland and Denmark." The findings of their study put emphasis on the importance of school trainings in local market (Bagherzadeh, 2011). IŞgoren (2009) refers to the effect of vocational and technical trainings on the success of industries. Mouzakitis (2010) in his study titles, "The role of vocational and technical trainings in economic growth of countries" claimed that accordance between vocational and technical trainings and the needs of the market is a pathway to succeed in a universal scope.

2. Methodology

Based on the question of the study, i.e. What factors influence the effectiveness of national skill competitions?, seven factors or specific questions given in Table 1 below have been considered and analyzed. These factors or questions include the internal factors (questions 1 and 2) which reflect how the competitions functionalities and the trainees affect their success, the external factors (questions 3, 4, and 5) which show the influence of the instruments and training methods on the quality of training the trainers and the trainees, and the competition consequences (questions 6 and 7) which indicate how past experiences can affect the trainers and the trainees' success. According to the results of the study about the effectiveness of the national skill competitions, the present investigation is an experimental study. The data collection; however, is descriptive. There has been an attempt to identify the factors involved with the effectiveness of the national

skill competitions through surveying the experts and functionaries

Table 1. The Questions of the Study

N	Question
1	To what extent do the individual capability, aptitude, and motivation affect the trainees' success in national skill competitions?
2	To what extent do the trainers' and training practitioners' capacity affect the trainees' success in national skill competitions?
3	To what extent do the equipment and learning materials in vocational and technical centers affect the trainees' success in national skill competitions?
4	To what extent do the physical and unworldly facilities affect the participants' motivation?
5	To what extent are the factors of project evaluation taken into consideration?
6	To what extent is there accordance between the provincial skill training and the national competitions?
7	To what extent is experience transfer from the experts who had participated in the world competitions to the present experts and competitors effective?

2.1. Participants and Sampling

Sampling was conducted through statistical census and the sample was taken as the participants of the study. The number of the provincial elites admitted to the national skill competitions of 1389 was 511 individuals in all majors, the accompanying experts were 426 individuals, and there were 26 responsible experts.

2.2. Instruments

Questionnaire and interview were used as the instruments of collecting data. At the beginning of the study, a questionnaire containing 20 questions was piloted; the reliability of that questionnaire was calculated through Cronbach's alpha which was $\alpha = 0/89$. Based on Likert Scale, the quantitative questions were categorized into five degrees. The questions given in Table 1 included 23 factors for the provincial elites, 38 criteria for the accompanying experts, and 21 yardsticks for the responsible experts.

The functionaries were interviewed. Data analysis was conducted using descriptive statistics like value mean and variance. Tables were drawn using SPSS 17.0 software.

3. Findings of the Study

Table 2 shows the mean scores gained from the elites, the expert trainers, and the responsible experts' views about the factors affecting the national skill competitions. In this table, specific factors such as internal factors, external ones, and competition consequences are categorized separately.

Table 2. The Mean Score of Elites, Expert Trainers, and Responsible Experts' Views

Type of Affecting Factor	Questions	Mean Score of Views		
		Elites	Expert Trainers	Responsible Experts
Internal	1	4.12	4.4	-
	2	3.57	3.71	3.79
External	3	3.39	3.92	3.1
	4	3.22	3.51	4.27
	5	3.78	3.65	4.25
Competitions	6	3.28	3.69	3.68
Consequences	7	-	2.83	-
Total Mean Score		3.56	3.67	3.82

3.1. Analyzing the Provincial Elites' Views about the Factors Affecting National Skill Competitions

As shown in Table 2 above the mean score of the provincial elites' views about factors affecting national skill competitions is 3.56 ($3 < 3.56 < 4$). Generally, it can be concluded according to the provincial elites, internal factors, external ones, and competition consequences greatly influence national skill competitions. The first question has the highest mean score of 4.12 ($4 < 4.12 < 5$) which proves that according to the provincial elites, individual capability, attitude, and the trainees' motivation have the most bearing on the success of national skill competition and the least mean score is 3.22 ($3 < 3.22 < 4$) related to the fourth question which shows that the organization's physical and unworldly facilities have significant effect on the competitors' motivation. Concerning the quality questions, the provincial elites have wanted the experts to be evaluated more precisely regarding their knowledge and practical skills so as to enhance the trainees' success chances and the quality of the competitions. Among the most significant issues which the elites put emphasis on were equalizing the quality of the

facilities in the training centers, improving facilities in deprived regions, raising provincial budget, reconsidering the facilities and training methodology in different centers to meet the final judgment process, supervising the correctness of judgment, extending the limits of the examination, modifying the order and of machines and work tables, setting the machines before the competition begins, justifying and clarifying the projects before the contest starts, informing technical faculties of all universities so that more students can participate and as a result the quality of the exams enhances, expanding the time allocated by the trainers to help the students before the competitions, paying more attention to the trainees' suggestions and criticism, introducing more of the advantages of the competitions, enhancing the quality of food and dormitories, and accomplishing the promises given by the functionaries to those trainees who take top places.

3.2. Analyzing the Accompanying Experts' Views about the Factors Affecting National Skill Competitions

Table 2 shows that the mean score of the experts' views about factors affecting national skill competitions is 3.72 ($3 < 3.72 < 4$) so they believe that internal factors, external ones, and competition consequences greatly influence national skill competitions. The first question has the highest mean score of 4.4 ($4 < 4.4 < 5$) which indicates that according to the trainer experts, individual capability, attitude, and the trainees' motivation have the most bearing on the success of national skill competition. The least mean score is 2.83 ($2 < 2.83 < 3$) related to the seventh question which shows that experience transfer from the experts who had attended the world competitions to the current experts is very limited. In answering the quality questions, the accompanying experts have claimed that these competitions should be held every year so as to boost the quality of them and also to help trainees to succeed in the future world competitions. They also believe that trainees should be sent to the world competitions along with their accompanying experts and not with responsible experts because accompanying experts enhance the trainees' learning and success not the responsible experts. Moreover, they want the expert trainers whose trainees are successful to be praised by the officials which will be a type of advertisement and whereby it results in enhancing the quality of the competitions, increasing the number of the participants, and holding short- and long-term camps in foreign centers. On the other hand, accompanying experts believe that experience transfer from the responsible experts to them should be increased. Among other points that the accompanying experts

have referred to are: paying closer attention in dispatching the accompanying experts, assigning the expert trainers at least for 5 years, applying the private section to enhance the trainees' attitudes and capacities, praising trainees who place first to third, precise controlling the budget allocated to competition holding and the money spent by the host centers, holding introductory meetings for the trainers a month before the competitions to teach them how to score, holding regional competitions after provincial contests and before national ones, introducing the first trainees to the industrial centers of the country, and enhancing the experts' level of education at least to bachelor's. In addition, some experts believe that judging the practical projects is not appropriate; therefore, they have suggested using collective instead of individual judgment, applying precise gauging tools such as meter and digital scale, assigning official or contractual experts with at least five years of experience as the judges of the competitions. They also believe that the competitions should be videotaped in order to reconsider the judgment if necessary, replacing the judges annually to prevent them from making friends with the experts and its negative effects on judgment, applying outsider judges (outside of VTTO), using experienced and knowledgeable judges, using non-expert supervisors for the judges, announcing the results of the competition in the end of the same day to prevent possible tampering or misunderstanding, acquainting the experts with all the criteria and judgment items, and selecting the top judges according to the experts' views for next competitions which can enhance the judgment and the participants' satisfaction.

3.3. Analyzing the Responsible Experts' Views about the Factors Affecting National Skill Competitions

According to Table 2 the mean score of the responsible experts' views about factors affecting national skill competitions is 3.82 ($3 < 3.82 < 4$) so they believe that internal factors, external ones, and competition consequences greatly influence national skill competitions. The fourth question has the highest mean score of 4.27 ($4 < 4.27 < 5$) which indicates that according to the responsible experts, the physical and unworldly facilities have significant effect on the competitors' motivation. The least mean score is 3.1 ($3 < 3.1 < 4$) related to the third question which shows that facilities and materials have a mediocre effect on the trainees' success. Concerning the quality questions, most of the responsible experts have considered the methodology of training as the most significant factor in teams' success compared to the Iranian teams. According to these experts, some of the most important reasons for the Iranian teams in

the world competitions to enhance from the 35th place (2001) to the 16th place (2009) include: the officials of the organization have paid close attention to the competitions, competitions have been held at universal level, former experts who had attended the world competitions have transferred their experience to the current experts, software and hardware facilities have been updated in the foreign camps, experts have collected fresh experience and applied them in their trainings, and educational camps have been held more regularly compared to 2001 and the trainers and experts have recently been more knowledgeable. Moreover, all of the responsible experts have emphasized on this point that their trainees should be sent to world competitions which shows this reality that the trainees qualify to gain world medals.

4. Discussion and Conclusion

The results achieved through analysis of data collected from the participants who attended the 11th round of the national skill competitions (i.e. the provincial elites, the expert trainers, and the responsible experts) proved that factors such as the trainees' interest in skill learning and individual capability, aptitude, and motivation can greatly affect the competitors' success. The effect of these factors is introduced to be stronger than those related to the trainers and education practitioners. Therefore, these criteria need to be paid special attention so as to help the trainees succeed. Moreover, the results gained from the elites' views about the external factors showed that keenness in judging the projects by experienced experts is the most significant external criterion. The expert trainers also believe that the facilities of technical centers have remarkable effect on the trainees' success in the 11th round of national competitions. On the other hand, the responsible experts have claimed that the unworldly and physical facilities provided by the organization can be considered as an important factor in the trainees' success. The consequences of the competitions include two questions: (a) the extent to which the provincial skill training and the national competitions are in accordance and (b) effectiveness of experience transfer from the experts who have attended the world competitions to the current trainers and competitors. The first question was directed to all of the study participants including the elites, the accompanying experts, and the responsible experts. The second question; however, was asked of only the expert trainers. The results achieved from the analysis of the above factors indicated that the elites, expert trainers, and the responsible experts believed that there was a high degree of accordance between the provincial skill training and the national competitions. The expert trainers have claimed that

the experience transfer from the experts who have attended the world competitions to the current trainers and competitors is highly limited. Based on the interviews with the functionaries on the competitions, it can be concluded that the elected trainees' camp abroad should be given to the private section. Suggestions have shown that the responsible experts should have a good command of one of the foreign languages such as English, French, or German and that the key purpose of attending the world competitions is to have experience and equip both the trainers and the trainees with good ideas how to teach in the future. It is also predicted that the technical committee can play a significant role in the Iranian trainees' success in the future.

According to the quality questions posed in the questionnaire, most of the provincial elites and the experts believe that the third grade of high school is the best stage to identify the gifted students and support them to attend the world competitions. According to most of the provincial elites, experiencing is the best policy of the organization in sending the trainees to the world competitions. On the contrary, the experts believe that winning medals is the best policy. The best time to hold the competitions was suggested by the elites in this way: April and May for city competitions, May and July for provincial contests, and August and September for national competitions. The experts; however, suggested that competitions should be held annually and the best time is: May for city competitions, June and July for provincial contests, and August and September for national competitions. Most experts believe that holding educational camps in foreign center is the most effective method to prepare the trainees. And most responsible experts claimed that the methodology of training is the most important factor in the trainees' success. According to the findings of the study, the following points are suggested in order to enhance the trainees' chances to succeed.

4.1. Recommendations

- 1) Applying up-to-date facilities in training: Differences between the capital (Tehran) and other cities and towns regarding the existent facilities should be reduced.
- 2) Holding inter-province and international competitions.
- 3) Directing the elites' praise: There should be this possibility for the elites to be admitted to university without taking entrance examination so as to promote their knowledge, to be employed, to be provided with entrepreneurship loans and training chances in form of scholarship.

References

1. Abdollahpour, A. R. (2001). Investigation the chances of the private section to participate in technical training according to the principals of the technical schools in Kerman province (MA Thesis). Training and Psychology Faculty, Tarbiyat Moalem University.
2. Azimi, A. C. (2006). The effects of vocational and technical trainings on the expansion of employment. The Head Office of Technical and Vocational Training in West Azerbaijan Province. Research Proposal Report. Recorded in: VTTO, Tehran.
3. Colly, jhon h (2008) key considerations when designing vocational models and curriculums intended.
4. Hosseini, M. G. (1994). Factors involved with unemployment of the technical school graduates (MA Thesis). Accounting and Management Faculty, Alame Tabatabaei University, p. 127.
5. I\$goren, nuriye cevik,.(2009) The importance of cooperation between vocational schools and industry, Goztepe Campus, 34722- turkey.
6. ILO's recommendation 195. Recommendation of extending formal, informal, and consistent training.
7. Johansson, R. (2003), Implication of Globalization and Economic Restructuring for skills Development in sub-sahara Africa, ILO.P-78
8. Khalaghi, A. A. (1990). A comparative investigation on the effects of technical schools located near factories versus those far from factories on the trainees' success (MA Thesis). Training Sciences Faculty, Tehran University.
9. Mouzakitis, G.S. (2010). The role of vocational education and training curricula in economic development. Social and Behavioral Sciences 2: 3914-3920
10. Parsa, A.; Nakhoda, T. & Morashi, S. M. (2009). Investigating the role of active festivals of training in enhancing the quality of teaching and the students' educational progress (studying the high school teachers' views of Khuzestan province). The Journal of Training and Psychology. Spring, 2009, pp. 79-102.
11. Rezazadeh, G. (2003). Applying technical and vocational training in supplying the need of the manufacturing and industrial sections. The Head Office of Technical and Vocational Training in West Azerbaijan Province. Research Proposal Report. Recorded in: VTTO, Tehran.
12. The office of the national skill competitions (2009) the principle of the 11th round of the national competitions.

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