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Identification and Prioritizing the Instructional and Learning Issues in Technical-Vocational and work-based high schools of West Azerbaijan Province

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ABSTRACT

Technical-vocational& work-based high schools with their special mission have an important role in various parts of society. This study aimed to identify and prioritize the instructional and learning issues in these schools in West-Azerbaijan province through mixed sequential exploratory approach. The statistical population included all teachers, students and principals and the sample size was 21 and 14 for qualitative and quantitative parts respectively. On instructional issues there were derived 8 themes which are weighed based on the analysis in this regard: social-cultural issues N.W= 0.216; facilities 0.148; human resources 0.136; policy and curriculum 0.134; instructional courses deficiency 0.123, lack of participation by other organizations 0.097, time issues 0.095, & monitoring and evaluation 0.047. On the learning issues the themes were respectively: social-cultural issues N. W= 0.254; students 0.161; facilities 0.158; centralized education 0.145; teachers 0.114; family 0.112; & institutional issues 0.056. Since the inconsistency ratios have been less than 0.1 in both ranking, there is sufficient agreement between the experts

***Keywords**: Instructional issues, Learning issues, Technical-Vocational and Work-based high schools.*

INTRODUCTION

Since the 1970s, much attention has been paid to the integration of work and education, and various models such as internships, workshops, and workplace visits have been organized. The purpose of all these models is to prepare learners for the world of work. A review of the activities carried out to link industry and education over the past three decades reveals that four models have emerged under the headings: "teacher-centered", "student-centered", "program-oriented" and "market-oriented". There are advantages and disadvantages to using each of these patterns, and they may be used alone or in combination. Using them provides opportunities for both industry and school to build closer relationships (FatemiAqda, 2011). Teaching and learning patterns in education shape teaching and learning activities and determine the role of teacher and student in teaching and learning and are regarded as important elements of planning to achieve the goals of the program. Therefore, the task of the planner is to review and suggest appropriate teaching and learning patterns and methods for specific purposes (Mohammadi, 2017).

Reflecting on the concept and mission of technical and vocational skills training in the national and international perspectives and contemplating the situation of the graduates

of these trainings in the country's secondary education system, indicates a fundamental conflict and serious damages. More precisely, from a national point of view, the definition of technical and vocational skills training provides training that offers the conditions for developing the necessary skills and knowledge of individuals and realizing their latent talents, preparing people for a job or profession. Their abilities and skills to do things and draw goals such as raising the level of culture and public knowledge and cultivating moral qualities and attributes, political and social insight, better understanding the talents and interests of learners and creating a suitable environment to lead them to useful employment and achievement to continue their education in the fields of science and technology (Maleki, 2013); and in a global perspective, drawing a mission such as "Achieving the cultural goals of peace, sustainable development based on a healthy environment and social solidarity and social citizenship and human resources training".

The needs of different sections of society in the present age in proportion to the challenges ahead such as the explosion of knowledge, information and information technology revolution and plans such as helping to reduce poverty, increasing the food security and promoting social cohesion, mproving the skills and abilities and technical and interpersonal capacities of individuals, improving the relationship between education and the world of work (UNESCO, 2016), helping to "grow professions for the future" such as helping people find jobs, helping to make jobs more competitive and contributing to the success of communities by providing high-quality training and creating learning opportunities for the workforce (Henry, 2014) also, improving the incomes of individuals participating in technical and vocational training (Karmel, & Nguyen, 2017) requires that these trainings have a good position and status in the country's educational system and their outputs should be considered highly efficient and effective.

However, based on research findings, it seems that the graduates of these courses are not in a positions in line with the intended goals, for example Hassanpour (2017) concludes that the graduates' employment rate is 16.2%, (Ekrami 2015) with 21.2% and the rate of job satisfaction and satisfaction with technical and vocational training is low and low. On the other hand, Molavi, Moradi, & Esmailnejad (2016) evaluated the effect of ergonomics management of workshops on improving the performance of technical and skills training (case study of technical and vocational colleges in Miandoab) found that between the two variables of ergonomics principles and improving the performance of skills and technical training , with a correlation coefficient of 0.232 between the two variables and the level of credibility equal to P = 0.002, and also between the two variables of physical conditions of the workshop and improving the performance of skills and technical training, with a correlation coefficient of 0.836 and the level of credibility equal With P = 0.005 and also between the two variables of student physical condition and improving the performance of skills and technical

education, there is a significant correlation coefficient equal to 0.256 and the level of validity equal to P = 0.001. Also, according to the obtained results, there is a significant relationship between the two variables of workshop equipment and improving the performance of skills and technical training with a correlation coefficient equal to 0.788 and a validity level equal to P = 0.004. Abdeli, MirShah-Jaafari, Liaghatdar, & Zeinadini-Meimand (2015) in a study investigated the damages of teaching methods in the teaching and learning process in high schools of Isfahan; the results showed that the rate of damage to teaching methods was higher than average for teachers and students. According to the teachers, the most average damages are "teacher does not care about practical teaching skills" and "low level of teachers' academic and professional skills". students also find the highest average damages related to "teachers' excessive expectations of students" and "lack of attention to students' interests" as well as "disregard for students' spontaneous responses".

Khalaghi (2014) in a study with the aim of preparing and compiling the principles, foundations and theoretical model of technical and vocational education, a model with 7 main components including philosophy, principles and rules, historical course, conceptual elements, environmental elements, strengths and weaknesses and in Finally, it has provided approaches to the implementation of technical and vocational education. Salimi (2012) in a study entitled "Technical and vocational education in the 21st century: UNESCO policies on technical and vocational education in the information age and a comparison of the position of technical and vocational education in Iran with those policies" extracted 12 policies and recommendations of UNESCO and Has been tested in the field of technical and vocational education in Iran. The results show that in 7 of the proposed policies (policies, planning and management, technical and vocational dimensions of general education, technical and vocational education as preparation for work and employment, technical and vocational education as continuing learning, guidance mechanism and Counseling, learning process, manpower and educational members of technical and vocational institutions) The situation is relatively favorable and in 5 of the proposed policies (definition and scope of technical and vocational education, technical and vocational education system, goals and objectives and content of training programs , Managerial and supervisory manpower in technical and vocational training programs, international cooperation) unfavorable situation.

Mirzayifar, Seraji, & Shams (2018) in a study examined the position of technical and professional disciplines and knowledge work from the perspective of ninth grade students in Hamadan province and concluded that only a few disciplines such as administration, accounting, building drawing, web design and game programming Computers are of interest to students, and most of these disciplines are also available in universities through theoretical disciplines, and therefore to some extent challenge the mission of the scientific, technical, and professional disciplines. Nemenzo (2019) in a study entitled Teachers' issues in the teaching-learning process examines teachers'

problems in preparing daily lesson plans, facilitating learning with innovative strategies, classroom organization and classroom management, as well as teachers' individual performance and commitment Has examined and measured these components based on these characteristics as well as work experience and level of education. The findings showed that teachers found daily curriculum preparation to be a tedious task. They also experienced wider problems with the use of innovations and access to physical equipment such as laptops and training software and space and facilities. Problems were also mentioned about the students, such as the illegality of the learners, the disinterested families, the bullying of some students, and the disinterest of others. The high volume of teachers' work has also been mentioned as another factor hindering the effective teaching and learning process. Teachers' individual performance and commitment have been assessed at an appropriate level, but a significant inverse relationship was observed between these characteristics of teachers and the development of daily lesson plans.

Dussault (2018) in a study entitled The Most Important Classroom Challenges 2018 from the perspective of teachers has concluded that the following are the most important challenges and problems of teachers in the classroom: 1) Lack of teamwork, empathy and mutual support among students 2) Many teachers' plans at the same time 3) Lack of time for rest or lunch and the like for teachers 4) Excessive responsibility of teachers 5) Lack of time to plan lessons 6) Bureaucracy and the need for paperwork and a lot of documentation for All work 7) High expectations of school principals and 8) Forcing to provide the same curriculum to all students. Armstrong (2017), reviewing more than 150 studies, lists effective strategies for addressing barriers to teaching and learning as follows: Setting clear learning objectives and negotiating them with students, and setting clear benchmarks for success, Teacher and student commitment to learning and providing the right mix of successes and challenges. Smiksha (2016) in an article entitled Problems Facing Today's Teachers in Technical and Vocational Schools (in India) points out that education is a dynamic process, and considers the most important disadvantages of teaching and learning: the inconsistency of training curricula Teacher with predetermined standards, insufficient ability of teachers to think critically and solve problems related to teaching methods, content, organization and so on. Therefore, he suggests that the teacher training letter needs to be fundamentally reviewed and adapted to the changing needs of society, and that province and governmental centers need to be involved in improving the quality of teacher training.

Considering the mentioned issues and the existence of numerous problems and damages in teaching and learning in technical and vocational schools, the present study intends to take a step towards providing a solution in pathology and prioritizing the issues of teaching and learning in technical and vocational schools, the background to this category of issues ahead. In this regard, four research questions have been raised as follows:

- What are the damages related to educational issues in technical and vocational schools of West Azerbaijan province from the perspective of principals, teachers and students?
- What are the damages related to learning issues in technical and vocational schools in West Azerbaijan province from the perspective of principals, teachers and students?
- How is the priority of damages related to educational issues in technical and vocational schools in West Azerbaijan province?
- How is the priority of damages related to learning issues in technical and vocational schools in West Azerbaijan province?

METHOD

This study applied terms of purpose and exploratory mixed in terms of data collection. Mixed research is a study that is done by combining two sets of quantitative and qualitative research methods. Creswell (2003) divides hybrid research into simultaneous and sequential groups. The method of the present study is a combination of sequential-exploratory design. In this project, first qualitative data are collected and analyzed, then in the second stage, quantitative data are collected and analyzed. In this plan, a measurement tool is usually developed through qualitative research. For this purpose, by collecting and analyzing qualitative data, the main aspects of the studied phenomenon are determined. These aspects are considered as the desired dimensions for the development of data collection tools. In the qualitative part of this research, a phenomenological approach was used in which the experiences, perceptions and feelings of individuals are studied and the main goal is a deep understanding of the phenomena in question. In the quantitative part, based on the cases and themes extracted from the qualitative part, a questionnaire was designed by the researcher and in order to determine the priority of possible harms affecting the educational and learning issues of technical and vocational colleges and knowledge work of West Azerbaijan province. In this part of the work, the technique of hierarchical analysis was used. The statistical population of the present study includes all principals, teachers and students of technical and vocational colleges and knowledge work in West Azerbaijan province. In the qualitative part, sampling was done purposefully with emphasis on more experienced principals and teachers and more knowledgeable students and continued until the data were saturated, thus interviewing a total of 21 people (12 teachers and principals and 9 students). In a small part, since the purpose of comparison and prioritization was based on an expert questionnaire, the statistical population of the study includes experts and specialists of technical and vocational schools in West Azerbaijan province. The snowball technique was used for sampling. Saati (1990) believes that ten experts are enough for studies based on pairwise comparisons. The pairwise comparison questionnaire is commonly referred to as the expert questionnaire because the respondents to the decision-making issues are experts, managers, and

professors who are experts in the field in question, so eligible people are inherently limited. In most cases, less than 10 experts are available and this is a conventional approach in solving multi-criteria decision-making problems (Habibi et al., 2014). The sample size in the present study was 14 people.

The data collection tool in the qualitative section was a semi-structured interview. For the quantitative part, a researcher-made questionnaire derived from the items and themes extracted from the qualitative part was used. The questions of both the interview and the questionnaire were approved by professors in the field of education and technical and vocational colleges in order to observe their content validity. Regarding the reliability of the AHP questionnaire, it should be said that because the methods of data collection in AHP techniques are fixed and the method and framework of work in these techniques are specified, only changes can be made in the way of getting the answer and the structure changed the questionnaire. Also, considering that the incompatibility rate of the responses is calculated in the AHP method and the responses with a high incompatibility rate are excluded, it is a kind of indicator of the reliability of the responses.

RESULTS AND DISCUSSION

Question 1: What are the harms related to educational issues in technical and vocational colleges and knowledge work in West Azerbaijan province from the perspective of principals, teachers and students? In order to answer this question, interview data related to educational issues were extracted, which initially resulted in 221 open-source interviews. After removing duplicates, their number reached 154 codes; Then, these codes were coded as selective and axial codes, which finally resulted in 8 central themes or themes, which are: damages related to manpower, damages caused by the element of time, damages related to facilities and equipment, damages caused by policy and program Academic, cultural and social harms, harms due to non-cooperation of other organizations, failure of training courses and harms related to monitoring and evaluation. For example, in relation to manpower-related injuries, almost all participants, especially in the category of teachers and principals, believe that the lack of a full training manpower of teachers, supervisors and craftsmen can "increase the concerns of principals and teachers; prevent optimal educational activity" (teacher No. 9). The incompatibility of the trainings and the specialization of the teachers with the new textbooks are also among the cases that the teachers and the principals of the conservatory mention as among the harms related to the educational issues. For example, participant (7) believes: "The books have changed and this is very good; "But no face-to-face training is provided for the practical activities of these books, and the colleague really does not have the time and budget to take the course privately and personally." The teacher (11) considers monitoring and evaluation to be very effective in motivating, enhancing and benefiting from the experiences of colleagues and

believes that "educational groups should play the role of the right hand of principals and manpower of vocational schools and an important supervisory wing; "Because they really have a lot of knowledge and experience."

Question 2: What are the disadvantages related to learning issues in technical and vocational colleges and knowledge work in West Azerbaijan province from the perspective of principals, teachers and students? In order to answer this question, 265 codes were obtained by analyzing the interviewees' conversations in the first stage of open coding. After removing the duplicate codes, 166 codes remained and after classifying the mentioned codes, finally 7 pivotal codes were identified as learning damages in technical and vocational colleges of West Azerbaijan province, which are: damages related to teachers, damages related to Students, damages related to family, damages due to lack of facilities and equipment, damages to school, social and cultural damages and damages due to centralized education.

The teacher (10) says about the role of school agents in facilitating or limiting learning: "A sense of responsibility of colleagues, art director and professional technical experts of the province is also needed to improve the quality of the educational process and comprehensive support through all educational elements." The teacher (4) believes: "The lack of standard facilities and equipment appropriate to the educational topics (including full and live vehicles - two-column jacks, etc.) makes it difficult for both our colleagues and teachers to perform educational activities. "They should and may not learn the material in practice." The teacher (1) also states in this regard: "The lack of standard facilities and equipment appropriate to the field and the lack of standard space, which should be similar to the minimum workshop space in the labor market, is one of the main problems of vocational schools. "The lack of self-confidence in students due to the lack of standard technical work is mainly due to the lack of facilities and equipment to perform the practical work process." The teacher (6) considers the main reason for the problems related to learning in vocational schools to be due to socio-cultural issues and a wrong view of vocational schools, and adds: The conservatories are directed to move away from the "wide channel of experimental disciplines" which is an unprincipled and irrational work and ultimately leads to the problem of job creation and unemployment in society, and in this regard, more culture should be considered for entrepreneurship in society. To solve the idea of employment and sitting behind the desk, which has become part of the dominant culture of the country today and causes laziness of skilled and talented workers ", the teacher (3) also adds: "Medicine and the experimental field have doubly attracted students with very low academic qualifications to the province's vocational schools."

Students were also dissatisfied with the situation at home, school and in the community. For example, Student No. 1 told: "Our teachers do not treat us with respect at all, and they constantly humiliate us because of our field of study, and sometimes

even give us ugly titles." Student (5) stated: "I have never seen anyone study in a film or series in the conservatory; "That in itself makes everyone say, 'Do you have to be

Pairwise comparisons	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Expert 7	Expert 8	Expert 9	Expert 10	Expert 11	Expert 12	Expert 13	Expert 14

literate in a certain field?' Referring to the lack of facilities, the student (7) said: "We need practical activities for many courses, but we are not introduced to a suitable place for internship, and the school does not have the necessary workshop facilities and equipment that we can do practical work. "Let us learn well."

Question 3: How to prioritize damages related to educational issues in technical and vocational colleges and knowledge work in West Azerbaijan province? In this research, two-sentence distribution has been used to identify the factors and multi-criteria decision-making models and AHP model have been used to determine the priority of research indicators. In the first step, the main components are selected with criteria that are: The components of research related to educational issues with numerical index are listed in Table (1) and the components of research related to learning issues are also named in Table (5) so that it can be easily traced and studied during the research. In this research, hierarchical analysis technique has been used to determine the weight of model criteria and indicators. The hierarchical pattern of the model is plotted using the AHP technique in Figure (1).

Table (1). Indicators of educational issues

Main Criteria	Notations
Monitoring and evaluation damages	C1
Socio cultural damages	C2
Damages related to Time component	C3
Damages related to policy making and curriculum	C4
Damages related to manpower	C5
Damages related to lack of cooperation with other organizations	C6
Deficiency of educational courses	C7
Damages related to facilities and equipment	C8

1/6	1/6	1/6	1/9	1/9	1/9	1/5	1/7	1/9	1/6	1/7	1	1/9	8	C1-C2
1/6	1/5	1/5	1/9	1/5	1/7	1/5	1/5	6	1/6	1	2	1/9	6	C1-C3
1/3	1/4	1/4	8	1/5	1/9	1	1/7	1/8	4	1/3	1/7	1/9	8	C1-C4
1/4	5	1/9	1/8	1/8	1/9	1/9	1/6	1/7	1	1/3	1	1/8	6	C1-C5
1/3	1/7	1/8	8	1	1/7	1/3	1/5	1/9	6	1/7	7	1/7	7	C1-C6
1/2	1/7	1/8	9	1/3	1/5	1	1/5	1/5	1/6	5	1/3	1/8	8	C1-C7
1/6	1/5	1/5	0/9	1/5	1/7	1/5	1/5	7	1/6	1	1	1/9	7	C1-C8
6	1/7	1/7	1/8	5	9	1	6	7	7	7	1	1/8	7	C2-C3
3	1/7	8	8	5	8	3	6	1/6	4	5	1/6	1/9	1/8	C2-C4
6	1/7	8	8	7	9	1/9	4	8	1	5	1/7	1/7	8	C2-C5
4	1/8	8	8	1/7	9	1	1/7	1/7	6	3	7	9	8	C2-C6
3	1/8	8	9	7	9	1/3	1/5	6	1/8	7	7	9	8	C2-C7
1/4	1/8	1/8	1/8	8	9	1	1/5	1/6	4	1/3	6	9	8	C2-C8
3	1/5	5	1/8	1/5	1/9	1	1/6	1/8	1	1	1/7	1/9	1/8	C3-C4
5	1/6	1/6	8	7	1/9	1/5	1/7	1/6	9	1	1/6	7	8	C3-C5
3	1/8	1/8	8	7	1/9	1/5	1/5	1/7	1	1/7	6	7	8	C3-C6
1/3	1/8	1/8	9	1/8	1/9	1/3	1/7	1/6	1	5	7	7	8	C3-C7
5	2/6	1/6	7	8	1/9	1/5	1/7	1/6	8	1	1/6	6	9	C3-C8
1/4	1/8	1/8	1/8	1/7	9	1/9	1/5	5	1	1	7	9	8	C4-C5
1/4	1/8	1/8	1/8	8	9	1	1/5	1/6	4	1/3	6	9	8	C4-C6
1/4	1/8	1/8	9	1/7	9	1/5	1/7	6	1	3	7	9	8	C4-C7
6	1/7	8	8	7	9	1/9	4	6	1	4	2/7	3/7	8	C4-C8
1/2	1/8	1/8	1/9	7	9	9	5	1/6	4	1/3	6	7	8	C5-C6
1/2	1/8	1/8	8	7	9	9	1/5	6	1/4	3	7	1/7	8	C5-C7
1/4	1/8	3/8	1/8	1/7	7	2/9	1/5	4	1	1	6	9	9	C5-C8
1/4	1/8	1/8	1/9	7	9	1/3	8	1/6	1/8	7	5	1/7	8	C6-C7
1/4	1/8	1/8	1/8	1/7	9	1/9	1/5	5	3	1	5	8	9	C6-C8
1/6	1/5	1/5	3/9	1/5	1/7	1/5	1/5	7	1/6	1	1	1/9	4	C7-C8

Table (2). Pairwise comparisons matrix of main criteria

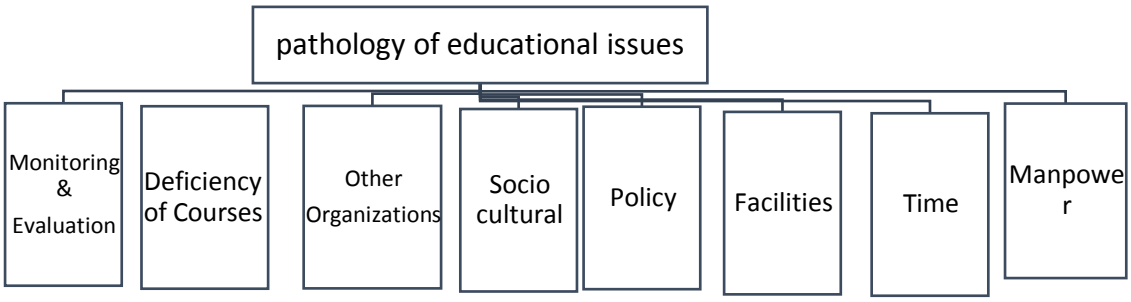

Figure (1). Hierarchal display of educational issues

To perform the first hierarchical analysis, the main criteria were compared based on the goal in pairs. The AHP technique is a ranking technique and the ranking in this technique is based on pairwise comparisons. Pair comparison is very simple and all elements of each cluster should be compared in pairs. Therefore, if there are n elements in a cluster (n (n-1)) / 2 comparisons will be made. Because there are eight indicators, the number of comparisons made is:

$$\frac{n(n-1)}{2} = \frac{8(8-1)}{2} = 28$$

Therefore, 28 pairs of comparisons were performed from the perspective of a group of experts and the views of experts were aggregated using the geometric mean technique. The pairwise comparison matrix resulting from the aggregation of experts' views is presented in Table (2).

As can be seen, 14 experts compared the eight components in pairs. For example, in Table (2), Expert 2 has selected the number 1C and 2C criteria 1.9 in a pairwise comparison. According to the inverse condition, the meaning of the number 1.9 is that in the opinion of the second expert, the component 2C is completely preferable to the criterion 1C. After collecting the opinions of experts, the geometric mean technique was used to aggregate the opinions. To perform hierarchical analysis, first the principal components are compared in pairs based on the purpose. For this purpose, the opinion of a group of experts has been used and the special vector was calculated using the technique of geometric mean and normalization of the obtained values. The geometric mean of experts' opinions for comparing pairs of components is as follows:

$$\mu_g = \left(\prod_{i=1}^{n} a_i\right)^{1/n} = \sqrt[n]{a_1 . a_2 \ldots . a_n}$$

$$C1 - C2 = \sqrt[7]{8 * \frac{1}{9} * 1 * \frac{1}{7} * \frac{1}{6} * \frac{1}{9} * \frac{1}{7} * \frac{1}{5} * \frac{1}{9} * \frac{1}{9} * \frac{1}{9} * \frac{1}{6} * \frac{1}{6} * \frac{1}{6}} = 0.214$$

C1-C3 =0.37 C1-C4 = 0.443 C1-C5 = 0.327 C1-C6 = 0.596
C1-C7 = 0.387 C1-C8 = 0.327 C2-C3 = 1.624 C2-C4 = 1.467
C2-C5 = 1.956 C2-C6 = 1.990 C2-C7 = 2.317 C2-C8 = 1.052
C3-C4 = 0.397 C3-C5 = 0.927 C3-C6 = 0.959 C3-C7 = 0.559
C3-C8 = 0.927 C4-C5 = 0.883 C4-C6 = 1.052 C4-C7 = 1.019
C4-C8 = 1.956 C5-C6 = 1.698 C5-C7 = 1.270 C5-C8 = 0.883
C6-C7 = 0.771 C6-C8 = 0.883 C7-C8 = 0.327

The pairwise comparison matrix resulting from the aggregation of experts' views is presented in Table (3).

Table (3). Pairwise comparison matrix of main criteria

C8	C7	C6	C5	C4	C3	C2	C1	Criteria
0.327	0.387	0.596	0.327	0.443	0.376	0.214	1.000	C1
1.052	2.317	1.990	1.956	1.467	1.624	1.000	4.673	C2
0.927	0.559	0.959	0.927	0.397	1.000	0.616	2.660	C3
1.956	1.019	1.052	0.883	1.000	2.519	0.682	2.257	C4
0.883	1.270	1.698	1.000	1.133	1.079	0.511	3.058	C5
0.883	0.771	1.000	0.589	0.951	1.043	0.503	1.678	C6
0.327	1.000	1.297	0.787	0.981	1.789	0.432	2.584	C7
1.000	3.058	1.133	1.133	0.511	1.079	0.951	3.058	C8

The next step is to calculate the geometric mean of each row to determine the weight of the criteria:

$$\pi_1 = \sqrt[8]{1 * 0.214 * 0.376 * 0.443 * 0.327 * 0.596 * 0.387 * 0.327} = 0.429$$

In the same way, the geometric means of the other rows is calculated.

$\pi_2 = 1.932$ $\pi_3 = 0.851$ $\pi_4 = 1.204$ $\pi_5 = 1.224$

$\pi_6 = 0.871$ $\pi_7 = 1.104$ $\pi_8 = 1.324$

Then the sum of the geometric mean of all the rows is calculated as follows:

$$\sum_{i=1}^{m} \pi_i = 0.429 + 1.932 + 0.851 + 1.204 + 1.224 + 0.871 + 1.104 + 1.024 = 8.639$$

By dividing the geometric mean of each row by the sum of the geometric mean of the rows, the value of the normal weight is obtained, which is also called the special vector. A summary of the results is given in Table (4):

Table (4). Eigenvector

Eigenvector	Geometric Mean	C8	C7	C6	C5	C4	C3	C2	C1	معیارها
0.047	0.429	0.327	0.387	0.596	0.327	0.443	0.376	0.214	1.000	C1
0.216	1.932	1.052	2.317	1.990	1.956	1.467	1.624	1.000	4.673	C2
0.095	0.851	0.927	0.559	0.959	0.927	0.397	1.000	0.616	2.660	C3
0.134	1.204	1.956	1.019	1.052	0.883	1.000	2.519	0.682	2.257	C4
0.136	1.224	0.883	1.270	1.698	1.000	1.133	1.079	0.511	3.058	C5
0.097	0.871	0.883	0.771	1.000	0.589	0.951	1.043	0.503	1.678	C6
0.123	1.104	0.327	1.000	1.297	0.787	0.981	1.789	0.432	2.584	C7
0.148	1.324	1.000	3.058	1.133	1.133	0.511	1.079	0.951	3.058	C8

Based on the results of Table (4), the special vector will be the priority of the main components as follows.

- Cultural and social damages with a normalized weight of 0.216 are the first priority.
- Damages related to facilities and equipment with a normalized weight of 0.148 is in the second priority.
- Manpower related damages with a normalized weight of 0.136 are the third priority.
- Damages due to policy and curriculum with a normalized weight of 0.134 are in the fourth priority.

- Defectiveness of training courses with a normalized weight of 0.123 is in the fifth priority.
- Damages due to non-cooperation of other organizations with a normalized weight of 0.097 are in the sixth priority.
- Damages caused by the element of time with a normal weight of 0.095 are in the seventh priority.
- Damages related to monitoring and evaluation with a normal weight of 0.047 are in the eighth priority.

Calculation of the incompatibility rate

In the AHP method, the rate of incompatibility of the opinions of decision makers and experts must be calculated to ensure that there is agreement on the ranking. This test is performed based on comparative matrix compatibility ratios. CR is a pair of comparative matrices equal to the ratio of its degree of compatibility to the corresponding random value The incompatibility rate is defined as follows:

$$CI = \frac{\lambda \text{Max} - \text{n}}{\text{n} - 1}$$

$$CI = \frac{8.63-8}{7} = 0.09$$

The incompatibility rate of the comparisons is 0.09 which is less than 0.1 and therefore the comparisons can be trusted.

Question 4: How to prioritize injuries related to learning issues in technical and vocational colleges and knowledge work in West Azerbaijan province?

In order to answer this question, the steps related to the previous question were performed based on the pairwise comparison analysis method, which refuses to mention the explanations and suffices to report the findings.

The components related to this question, which have been obtained in response to the second research question, have been named with a numerical index in Table (5) so that they can be easily traced and studied during the research. In this research, hierarchical analysis technique has been used to determine the weight of criteria and indicators of the model. The hierarchical pattern of the model is plotted using the AHP technique in Figure (2).

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Table (5). Characteristics of learning issues

Notation	Main Criteria
C1	School Damages
C2	Socio-cultural Damages
C3	Family related Damages
C4	Damages due to Facilities Deficiency
C5	Damages related to students
C6	Damages related to teachers
C7	Damages due to centralized education

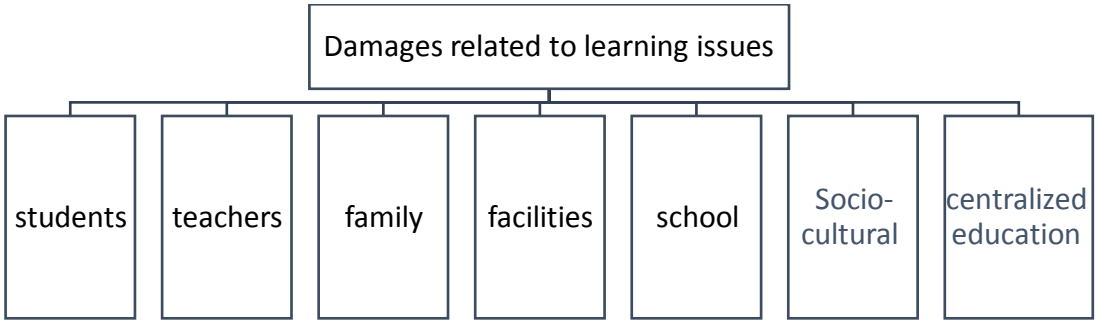

Figure (2). Hierarchal display of learning issues

As there are seven criteria, the number of comparisons made is:

$$\frac{n(n-1)}{2} = \frac{7(7-1)}{2} = 21$$

The pairwise comparison matrix resulting from the aggregation of experts' views is presented in Table (6). As can be seen, 14 experts compared the weekly components in pairs. After collecting the opinions of experts, the geometric mean technique was used to aggregate the opinions. To perform hierarchical analysis, first the principal components are compared in pairs based on the purpose.

Table (6): Paired comparison matrix of main criteria

Expert 14	Expert 13	Expert 12	Expert 11	Expert 10	Expert 9	Expert 8	Expert 7	Expert 6	Expert 5	Expert 4	Expert 3	Expert 2	Expert 1	Pairwise comparisons
1/6	1/6	1/6	1/9	1/9	1/9	1/5	1/7	1/9	1/6	1/7	1	1/9	8	C1-C2
1/6	1/5	1/5	1/9	1/5	1/7	1/5	1/5	6	1/6	1	2	1/9	6	C1-C3
1/3	1/4	1/4	8	1/5	1/9	1	1/7	1/8	4	1/3	1/7	1/9	8	C1-C4
1/4	5	1/9	1/8	1/8	1/9	1/9	1/6	1/7	1	1/3	1	1/8	6	C1-C5
1/3	1/7	1/8	8	1	1/7	1/3	1/5	1/9	6	1/7	7	1/7	7	C1-C6
1/2	1/7	1/8	9	1/3	1/5	1	1/5	1/5	1/6	5	1/3	1/8	8	C1-C7
6	1/7	1/7	1/8	5	9	1	6	7	7	7	1	1/8	7	C2-C3
3	1/7	8	8	5	8	3	6	1/6	4	5	1/6	1/9	1/8	C2-C4
6	1/7	8	8	7	9	1/9	4	8	1	5	1/7	1/7	8	C2-C5
4	1/8	8	8	1/7	9	1	1/7	1/7	6	3	7	9	8	C2-C6
3	1/8	8	9	7	9	1/3	1/5	6	1/8	7	7	9	8	C2-C7
3	1/5	5	1/8	1/5	1/9	1	1/6	1/8	1	1	1/7	1/9	1/8	C3-C4
5	1/6	1/6	8	7	1/9	1/5	1/7	1/6	9	1	1/6	7	8	C3-C5
3	1/8	1/8	8	7	1/9	1/5	1/5	1/7	1	1/7	6	7	8	C3-C6
1/3	1/8	1/8	9	1/8	1/9	1/3	1/7	1/6	1	5	7	7	8	C3-C7
1/4	1/8	1/8	1/8	1/7	9	1/9	1/5	5	1	1	7	9	8	C4-C5
1/4	1/8	1/8	1/8	8	9	1	1/5	1/6	4	1/3	6	9	8	C4-C6
1/4	1/8	1/8	9	1/7	9	1/5	1/7	6	1	3	7	9	8	C4-C7
1/2	1/8	1/8	1/9	7	9	9	5	1/6	4	1/3	6	7	8	C5-C6
1/2	1/8	1/8	8	7	9	9	1/5	6	1/4	3	7	1/7	8	C5-C7
1/4	1/8	1/8	1/9	7	9	1/3	8	1/6	1/8	7	5	1/7	8	C6-C7

For this purpose, the opinion of a group of experts was used and the special vector was calculated using the technique of geometric mean and normalization of the obtained values. The geometric mean of experts' opinions for comparing pairs of components is as follows:

$$\mu_g = \left(\prod_{i=1}^{n} a_i\right)^{1/n} = \sqrt[n]{a_1 . a_2 \ldots . a_n}$$

$$C1 - C2 = \sqrt[7]{8 * \frac{1}{9} * 1 * \frac{1}{7} * \frac{1}{6} * \frac{1}{9} * \frac{1}{7} * \frac{1}{5} * \frac{1}{9} * \frac{1}{9} * \frac{1}{9} * \frac{1}{6} * \frac{1}{6} * \frac{1}{6}} = 0.214$$

C1-C3 =0.376 C1-C4 = 0.443 C1-C5 = 0.327 C1-C6 = 0.596
C1-C7 = 0.387 C2-C3 = 1.624 C2-C4 = 1.467 C2-C5 = 1.956
C2-C6 = 1.990 C2-C7 = 2.317 C3-C4 = 0.397 C3-C5 = 0.927
C3-C6 = 0.959 C3-C7 = 0.559 C4-C5 = 0.88 C4-C6 = 1.052
C4-C7 = 1.019 C5-C6 = 1.698 C5-C7 = 1.27 C6-C7 = 0.771

The pairwise comparison matrix resulting from the aggregation of experts' views is presented in Table (7).

Table (7): Paired comparison matrix of main criteria

C7	C6	C5	C4	C3	C2	C1	Criteria
0.387	0.596	0.327	0.443	0.376	0.21	1.000	C1
2.317	1.990	1.956	1.467	1.624	1.000	4.673	C2
0.559	0.959	0.927	0.397	1.000	0.616	2.660	C3
1.019	1.052	0.883	1.000	2.519	0.682	2.257	C4
1.270	1.698	1.000	1.133	1.079	0.511	3.058	C5
0.771	1.000	0.589	0.951	1.043	0.503	1.678	C6
1.000	1.297	0.787	0.981	1.789	0.432	2.584	C7

The next step is to calculate the geometric mean of each row to determine the weight of the criteria:

$$\pi_1 = \sqrt[7]{1 * 0.214 * 0.376 * 0.443 * 0.327 * 0.596 * 0.387} = 0.429$$

In the same way, the geometric mean of the other rows is calculated:

$\pi_2 = 1.932$ $\pi_3 = 0.851$ $\pi_4 = 1.204$

$\pi_5 = 1.224$ $\pi_6 = 0.871$ $\pi_7 = 1.104$

Then the sum of the geometric mean of all the rows is calculated:

$$\sum_{i=1}^{m} \pi_i = 0.429 + 1.932 + 0.851 + 1.204 + 1.224 + 0.871 + 1.104 = 7.615$$

The eigenvector is calculated as in the previous question, the results of which are summarized in Table (8):

Table (8). Eigenvector

Eigenvector	Geometric Mean	C7	C6	C5	C4	C3	C2	C1	Criteria
0.056	0.429	0.38	0.59	0.32	0.44	0.37	0.21	1.00	C1
0.254	1.932	2.31	1.99	1.95	1.46	1.62	1.00	4.	C2
0.112	0.851	0.55	0.95	0.92	0.39	1.00	0.	2.	C3
0.158	1.204	1.01	1.05	0.88	1.00	2.	0.	2.	C4
0.161	1.224	1.27	1.69	1.00	1.	1.	0.	3.	C5
0.114	0.871	0.77	1.00	0.	0.	1.	0.	1.	C6
0.145	1.104	1.00	1.	0.	0.	1.	0.	2.	C7

Based on the results of Table (8), the special vector priority of the principal components will be as follows:

- Socio-cultural damages with a normalized weight of 0.254 are the first priority.
- Damages related to students with a normalized weight of 0.161 are the second priority.
- Damages due to lack of facilities and equipment with a normalized weight of 0.158 are in the third priority.
- Damages from centralized education with a normalized weight of 0.145 are the fourth priority.
- Damages related to teachers with a normalized weight of 0.114 are in the fifth priority.
- Family-related damages with a normalized weight of 0.112 are the sixth priority.
- Damages due to school with a normal weight of 0.056 are in the seventh priority.

Here, too, the incompatibility rate is as follows:

$$CI = \frac{\lambda \text{Max} - \text{n}}{\text{n} - 1}$$

$$CI = \frac{7.33 - 7}{6} = 0.05$$

The inconsistency rate of the comparisons is 0.05, which is less than 0.1, so the comparisons can be trusted.

Discussion and conclusion

Vocational education is one of the most important priorities in the country's curriculum and should be given more attention than before. In this regard, in addition to the structure of vocational schools and the need to employ efficient and specialized personnel in them and have a coherent and integrated curriculum, cultural and family factors and contexts also play a significant role in the implementation and efficiency or ineffectiveness of the implemented trainings. Supporting this type of education and encouraging top students to continue their studies in such fields, has a constructive role or by incorrect culture and providing information and negative attitudes about this important and necessary branch of the second year of high school, the motivation and interest of students and reduce The effectiveness of these training centers. In the present study, as observed in both educational and learning issues, socio-cultural harms were the first case of prioritization in relation to these issues and therefore it is worth paying special attention to these cases that can themselves harm Another, including the apathy and lack of motivation of teachers, especially students. Khalaghi (2014) in a study with the aim of preparing and compiling the principles, foundations and theoretical model of technical and vocational education, a model with 7 main components including philosophy, principles and rules, historical course, conceptual elements, environmental elements, strengths and weaknesses and in Has provided the latest approaches to the implementation of technical and vocational education; According to this model, cultural factors and environmental and social contexts play a very important role in the success or failure of technical and vocational education. Poza-Vilches, López-Alcarria, & Mazuecos-Ciarra (2019) in a study entitled "Identification of professional competencies in education for sustainable development" have studied the case study of the educational guidance service in Spain. This research has been done with an exploratory approach and based on it, teachers include components such as familiarity with participatory methodology, familiarity with the culture and values of society, having general teacher competencies and the ability to develop and select appropriate curricula as effective factors in the education process. Learning commensurate with sustainable development is enumerated. Ofei-Manu, & Didham (2018) in a study have identified the factors affecting effective learning in technical and professional fields. According to him, educational innovations at the international level require a new approach to the process of education and learning and

educational achievements based on progressiveness and a qualitative approach to education and training, and it is necessary to propose practical solutions in this field. This study presents the important elements of learning and their corresponding characteristics by emphasizing the effective learning approach and appropriate educational performance; For this purpose, an action-reflection cycle has been used and examples and examples of learning performance have been reviewed, along with review of teaching and learning theories. Based on the findings of this study, factors such as teachers' links with educational policy makers, full understanding of community culture, constructive cooperation of mass media, importance of technical education in the local community and strengthening and encouraging the teaching and learning process in line with community development and the principle of sustainability in effective learning outcomes get the main priorities. According to Rutland, & Hall (2019) it is necessary for parents to participate in all aspects of curriculum development, implementation and evaluation as consumers, informants, stakeholders and supporters of education and solutions for this type of intervention and participation, according to the values and type of system. Think of common education in any place and time. However, the results of studies such as AqaMohamadi, & Khorsandi-Yamchi (2015) indicate that the level of attention to the concept of family in the curriculum has been evaluated in the educational, training and management aspects; However, in the legal, obligatory and emotional dimensions, there is enough attention to the role of the family. Olibie (2014) in a study examined the views of principals on parental involvement in the implementation of curricula and concluded that regardless of gender, principals paid very little attention to the role of parents in the implementation of school curricula and improving this process requires more awareness. Teachers and administrators are important to this type of participation and also support their efforts to attract parental involvement. In view of the above, it can be seen that both cultural and social contexts and family contexts and contexts have played an important role in education and have been effective in its effectiveness. However, a noteworthy point in the interviews related to this study was that both groups of interviewees in this study (teachers and principals and students of technical and vocational colleges and knowledge work) believed that what is in the success of training, especially practical training in vocational schools. Technical, professional and knowledge work are of fundamental importance, a positive view of this type of training and the responsibility of all actors and stakeholders in this field; Relevant ministries, departments and organizations by providing workshop and laboratory facilities and equipment, appropriate training space, hardware and software facilities and employing experienced personnel in accordance with the organizational chart, local community and existing

organizations by providing some specialized training and providing Bringing an opportunity for local visits, internships and internships, art directors with compassion and cooperation and empathy with teachers and students, teachers with respect for human personality, students' spirits and abilities and efforts to improve and promote them, motivated students, interest, effort And perseverance and community and family, only by encouraging and having a positive view of vocational education can take positive steps in this direction.

On the other hand, centralized education, which is dominated in Iran, has created problems for all types of education in the general education course, and teaching and learning in technical and vocational colleges and knowledge work are no exception; Among them is the need to change the hours and even chapters of education in accordance with the titles of textbooks and to allocate more time in proportion to the subjects and the importance of general and specialized courses, which has created many problems for teaching and learning in vocational schools. On the other hand, the centralized presentation of the courses has caused that in most cities, the courses do not fit with the existing capabilities, facilities and needs of that city, and consequently, there are no suitable and standard places for internships and internships for students; This in itself will play a significant role in discouraging and discouraging teachers and students. Therefore, it is necessary to define and limit specific disciplines and polarize the disciplines in each city according to its needs and facilities with accurate and appropriate planning and analysis, so that the necessary facilities and equipment are concentrated in that city and the problem of lack of facilities is Teachers, both principals and students are very dissatisfied with it, it will be greatly improved and the process of internship and internship will be facilitated and more interest and motivation will be created in teachers and students for practical activities.

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