

**IDENTIFICATION OF MODIFIABLE FACTORS THAT  
AFFECT THE CONTENT OF COURSES IN  
INDUSTRIAL MANAGEMENT TO LABOR MARKET  
NEEDS AND CUSTOMER**

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**Abstract**

With all the efforts to improve the curriculum of humanities courses in universities is done. It is still much to be seen and weaknesses of different. In recent years there has been such a mismatch students, graduates and the demand of industry and the labor market is. During this research needs of the labor market in the field of industrial management as one of the disciplines of the humanities group was. In this study the content thematic courses in industrial management from the perspective of 24 experts examined. A proposed solution was determined. Then what is and what should be the content of the existing industrial management curriculum to respond to the labor market, were studied in terms of 8 Strategy. After checking the effective factors on the adjustment of industrial management courses, these priorities were assigned by the network analyzer. Finally, the effect on each other was identified through analysis of DEMATEL.

**Keyword:** Industrial management, Labor Market, ANP, DEMATEL

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## Introduction

The current world effort towards progress and development in all fields is. Developed countries are still at the helm of affairs have been developed and the developing countries have increased their efforts.

One of the prerequisites for progress in various fields of business and application knowledge. Knowledge of the forms is possible. One way of acquiring and applying knowledge in the field of education is the scholar. Education in the country includes courses in elementary, high school and then university. Exploitation of youth and youth development in college is booming labor market. [1]

Today's job market is a lack of concern for what it is graduate job market needs. The first step to improve the current state of the labor market, improving the transfer of knowledge to young people at university. Factors influencing adjustment of industrial management, curriculum content, the job market is important because industrial management students after graduation job market will encounter closed doors. They can not meet market expectations.

Administration degree from the university's collection. Including sub-categories that are specific to each area. Under his management of the industry. The course has three main dimensions, the technical, financial, and behavioral and social. [2]

[2] Many of the technical requirements and skills needed in each country is provided by the output of the university community. The lack of attention to education in particular "the quality of the academic education, many problems can lead to damaging results simply will not improve. The chaos and confusion in many commercial and manufacturing establishments that generally "due to mismanagement or lack of management principles. According to the following four research questions were posed:

- 1-The current status of industrial management courses to meet market needs is desirable?
- 2.Factors influencing adjustment of educational content courses in industrial management in line with what the market needs?
- 3.Strong influence of these factors on each other right?
- 4.Their expert to meet the needs of the labor market are ranked relative to one another what?

Research aimed at identifying, ranking, and determining the impact of curriculum content factors affecting the adjustment of industrial management decisions according to market needs using the criteria of multiple (MADM) is. This study was exploratory and descriptive of the purpose, is applied. After collecting data from questionnaires and collect the related Using network analysis process (ANP) to category adjustment factors on the content of training courses in industrial management. And then use DEMATEL method to determine the severity of the impact of these factors was. Assistant Professor of Industrial Management, 60 research professionals and higher grade. At least 10 years of academic and continuing cooperation with the Department of Learning. And industry executives with at least a bachelor's degree and 15 years experience in the staffing industry.

The most difficult part of a function for curriculum planning, content selection. Professional training programs, standards and criteria for the selection of content they provide. Hilda Taba, validity and significance, consistent with the realities of social interaction in breadth and depth, providing a wide range of targets, Having the ability to learn, having the ability to adapt and fit the learner's previous experiences with the needs and interests of content selection criteria does the audience. [3]

The Silver, Alexander and Lewis, content features: The idea is to introduce a discipline and a clear understanding of the fundamental structure of the discipline's understanding. Using examples and case studies as well as methods, concepts and principles of universal selected to provide. Is there a balance between easy and difficult, with the opportunity to strengthen the global imagination in relation to the concrete and has adequate reliability and validity. Word in terms of content, information, events and issues in a scientific article is cited. Content, a summary of the facts, concepts, generalizations, principles, and theories of knowledge in the field is the same. [4] Education expert on how to choose the content and presentation of the basic principles are the following: [5] The content and purpose of the relationship, the relationship between content and reward-related content and potential students about the content and timing, content, and usefulness of the relationship, the relationship between the content and the content and relation between vertical and horizontal.

## Review and analysis of data

Analysis of Network Group (GANP) used in this study are as follows:

1. Define and draw the ANP network considering competing options and criteria.

2. Data collected through the matrix of paired comparisons
3. Compatibility rate (the rate at individual conflicts resulting matrices are calculated)
4. Analyze data (this step is consistent with the corresponding matrix is based on integrating geometric mean).
5. Calculate the relative weight of each matrix and the super-matrix
6. Add a can row full supermatrix until convergence
7. Obtain the rank of each of the options. [6]

Indicators and ways of creating and extracting the resulting ideas are appropriate to the structure of the organization was the direct and indirect communication. This structure can be used a variety of techniques. DEMATEL is one of them. Rate severity of this technique to examine the relationships, their importance of feedbacks associated with the investigation and the relationship is inalienable. [6] The steps of DEMATEL technique is as follows:

- 1: identify the components of the system with the existing approaches such as the Delphi method. The elements of each station or node create graphical diagrams. [7]
- 2: the vertices of a given element in the diagram and to determine the relationship of the communication between stations. [8]
- 3: Make the consensus judgment of experts for the relationship between any two elements A and B may be specified. [9]
- 4: consensus of the experts called to the elements. [10]
- 5: Final score, for the relations of the matrix M Diagram set for a show. [8]
- 6: Each entry of the matrix M in the most adverse position row ( $\alpha$ ) matrix multiply ( $M = \alpha \cdot M$ ) [11]

7: the sum of an infinite sequence of elements of direct and indirect effects on one another to form a geometric progression, based on existing law graphs, calculate: [12]

$$A \text{ sum of a geometric progression} = \sum_{1 \rightarrow \infty} M^1 + M^2 + M^3 + \dots + M^t = M \frac{(I - M^t)}{(I - M)}; \lim_{t \rightarrow \infty} M^t = 0$$

Ofalldirect and indirectrelationshipsbetweenthe intensitymaybe calculatedforagivenDiagraph.

8:The intensityof therelationshipmay beindirect (the elementsonone another) to calculate[12]

$$\hat{S}_{t \rightarrow \infty} = M^2 + M^3 + M^4 \dots + M^t = M^2(I - M)^{-1}$$

9: hierarchicalstructureofelements may bespecified.[7]

Dataanalysiswas carried outinfour steps:

**First stage:**To answerthe firstresearchquestion,sets ofcourses inindustrialmanagement In 24subject matterfrom theperspective ofexpertsreviewed andevaluated .After preliminaryassessmentdeterminedthat 35original problem.Resultswere used toevaluatetheproposedsolutions.Theevaluationgap between the existingindustrialmanagementcourses Andtheoptimal(according toexpertopinions) and determinewaystoelimatethegapslisted inTable 1were presented Therresultscan not beconsideredsatisfactorystatus ofindustrialmanagementtrainingcontent. Because somehowallrequiredcoursesaremodifiedto suit theTable 1.

Course	Experts agree		action proposed	ROW
	Industry	Teachers		
Industrialpsychology, management,organizational behavior, accounting, statistics, computing,human resource management, production management, statistical quality control, industrial protection	80	90	Updatingcontent	1
Industrialpsychology, organizationalbehavior management, financial management, production management	95	95	Aworkshop	2
Accounting,research, human resources, production management, statistical quality control, project control, andclockergo meter, plant management, systems, productivity	100	100	Project-orientedenvironment	3
Accounting, statistics, computing,financial management, operations research, statistical quality control, projectmanagement,	100	100	Educationsoftware	4

economic evaluation of projects, systems analysis, productivity				
Mathematics (interlaced reasonable mathematical topics in applied mathematics in engineering field), computers, human resource management, operations research, production management, statistical quality control, industrial protection	90	85	Development Issues	5
Mathematics, Statistics	80	90	Increase the number of units	6
Ergo meter and timing, plant management,	85	85	Visit the Industrial Environment	7
Statistical quality control, plant management,	85	90	Hand Working in factory	8

**Table 1 – outlines**

Step Two: For the second question after reviewing the lessons and strategies from experts in the field of industrial management factors on the adjustment of educational content and the Delphi method follows a three-step sequence was derived:

- strategic platform includes support for schools, approved by the Ministry of Science, clear and accurate understanding of the goals and benefit of mitigation and long-term strategic approach to educational content and modify the educational content
- tactical factors including cost analysis to modify the educational content, educational content is a bit out of adjustment, change management and detailed analysis of the adjustments.

Cultural factors include: overseeing the evaluation process of modifying content, effective mitigation plans - clear and transparent organizational culture analysis, adjusting for the effects of labor market and educational content to students, alumni and the industry demands, according to local of course

Third stage: The first network was built using ANP network analysis techniques. The paired comparison matrix of each expert and inconsistency rates were determined separately for each matrix. The matrix was a combination of such matrices. Vectors relative weights were then superpowers of a matrix of 37 times consecutive convergent result is:

1 - Prioritize main criteria: strategic 0.425, 0.227 cultural, social, tactical. 198 and 150.

2 - 15-fold the prioritization criteria as in Table 2.

prioritization of Factors		
$W_i$	Factors	Priority
0.245	Approved by the Ministry of Science	1
0.126	And long-term strategic approach to educational content adjustment	2
0.124	Developing an effective adjustment programs, clear	3
0.089	Change Management	4
0.087	Moderating effect on the labor market and educational content to students of Industrial Management	5
0.065	Having clear goals and vision adjustment	6
0.063	Supported universities	7
0.044	Monitoring and evaluation process of adjusting content	8
0.03	Demands of industry and society in industrial management graduates	9
0.027	Quantification of modified instructional content	10
0.026	Localization of courses tailored to community of IRAN	11
0.024	Clear and accurate understanding of the goals and interests of	12
0.02	Analysis of corporate culture	13
0.016	Detailed analysis of the adjustments	14
0.014	Analysis and adjustment costs associated with educational content	15

**Table 2 - Parameters Part B criteria**

3 -Prioritize the criteria for strategic decisions of the Ministry of 0.351, and long-term strategic approach to modify the educational content of 0.257, 0.197 and university support clear and accurate understanding of the goals and interests, 0.195

4 -Criteria for prioritizing cultural factor: 0.312, transparent and effective mitigation plans, monitoring and evaluation process to modify the content 0.294, industry and community demands and analyzing organizational culture 0.1570.237 graduates.

5 -Criteria for prioritizing social factors: modulating effects on the labor market and student educational content was 0.533, 0.302, and adjusting the goals and vision of the local community according to 0.165 Course

6 -Criteria for prioritizing tactical factor: 0.413 Change Management, a small adjustment to the educational content of 0.299, 0.168 and analyzed detailed analysis of the adjustment costs associated with modifying the educational content of 0.120

Step Four: In order to answer the fourth question DEMATEL technique results in Table 3 were obtained. After extraction of the main factors of success and paired comparisons matrix, the matrix X, M, and S were formed. The results of the calculations were done. Computing software «MATLAB» do and the values: (R), (J), (R + J), (RJ) was determined.

## Conclusions

Based on the results of the decisions of the difference between the relatively "high" compared to the rest of the weight gained by the experts are the first priority. After adjusting for factors and long-term strategic approach to educational content is located in the second priority. Development of a mitigation plan effectively, manage change, mitigate the effects on the labor market and student educational content, a clear vision and goals, and modulators... Order of priority in the third, fourth, fifth and... Have been. The remarkable things that it causes weight gain by weighing the first factor, the difference with the weights obtained by other factors, Also check the weights of sub-factors under each factor is characterized by the actors related to the strategic operating weights of most of the experts have obtained, it shows the importance of strategic factors in adjusting the content educational. Thus, it is proposed to modify the content of the education authorities and decision-makers in the field of industrial management options. Reflect the view of strategic choice. And consider these factors more. Obviously the main criteria and sub-criteria which must be considered together.

Weight adjustment factors for each of the learning content based on the amount of  $(R + J)$  is defined and  $(RJ)$ . The net effect of an agent on the others shows, so how much  $(RJ)$  is a positive factor, Managing the effects of other factors will be considered more effective and what is more negative factor is the more impressionable. Obviously due to the difference between the values of  $(R)$  strongly influence and  $(J)$  strongly interact, each agent is associated with higher levels of  $R$  or  $J$  vice versa, influence or interact exact cause will be determined definitively. In this section, according to data from the steps of DEMATEL and values  $(R)$ ,  $(J)$ ,  $(R + J)$ ,  $(RJ)$  and classified Diagram the corresponding matrix  $X$ , the factors that modify the educational content before this season, the weight of expert opinion and net impact has been ranked, is evaluated.



No .	Classification of priority	R+J	Type	No .	Classification of priority	R-J	Typ e	
1	Approved by the Ministry of Science	5.9274	Descending order of overall effectiveness and effects on R + J	1	Moderating effect on the labor market and student educational content	0.8396	Effective impact of the R-J > 0	
2	Supported universities	5.802		2	Analysis of corporate culture	0.7453		
3	Analysis and adjustment costs associated with educational content	5.6396		3	Supported universities	0.7062		
4	Analysis of corporate culture	5.4827		4	Quantification of modified instructional content	0.5606		
5	Monitoring and evaluation process of adjusting content	5.4434		5	Developing an effective adjustment programs, clear	0.4427		
6	Moderating effect on the labor market and student educational content	5.1286		6	Monitoring and evaluation process of adjusting content	0.3492		
7	Developing an effective adjustment programs, clear	5.0475		7	Localization of courses tailored to community of IRAN	0.2748		
8	Having clear goals and vision adjustment	4.7044		8	Analysis and adjustment costs associated with educational content	0.1532		
9	Localization of courses tailored to community of IRAN	4.566		9	Approved by the Ministry of Science	0.041		
10	Change management	4.1322		10	Having clear goals and vision adjustment	0.0324		
11	Clear and accurate understanding of the goals and interests of	4.1271		11	Change management	-0.0038		Impact factors are -J < 0
12	Detailed analysis of the adjustments	4.0682		12	Clear and accurate understanding of the goals and interests of	-0.1041		
13	Demands of industry and society graduates	4.0619		13	Demands of industry and society graduates	-0.3107		
14	long-term strategic approach to educational content adjustment	3.8692		14	Detailed analysis of the adjustments	-1.3504		
15	Quantification of modified instructional content	3.8522		15	long-term strategic approach to educational content adjustment	-1.5558		

**Table 3 - the final effect of each factor on the other factors, and thus the importance of factors in the system**

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