

## The Effect of the Idea of Education Content Knowledge on the Planning and Development of Faculty Members in Farhangian University, Region 2 of the Country

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### Abstract

**Purpose:** The impact of content knowledge idea instruction on teaching quality of Farhangian University faculty members of Region 9 of Iran.

**Method:** This applied study was conducted with a mixed approach using a qualitative and quantitative approach. In the qualitative section, the statistical population included 20 professors of Farhangian University in Region 9, 10 of who were selected by purposive sampling method based on saturation law, and 263 faculty members, professors and visiting lecturers of Farhangian University in Region 9 of the country. Including (Semnan, Mazandaran and Golestan) were in the quantitative section that 156 of them were selected as a sample using random sampling method classified according to Cochran's formula. To collect data, two content knowledge education questionnaires (researcher-made) with 82 questions and the development of faculty members of Qoroneh et al. With 93 questions were used. The validity and validity of the instruments were confirmed by the supervisors and consultants and the combined reliability and Cronbach's alpha were calculated higher than 0.7. SPSS21 and PLS3.2 software and structural equations were used for data analysis.

**Findings:** The results of structural equation test showed that the effect of content knowledge of education and training on the development of faculty members in Farhangian University, Region 9 was positive and significant.

**Conclusion:** The results showed that the effect of content knowledge of education on the development of faculty members in Farhangian University in 9 countries has been significant.

**Keywords:** Idea of Knowledge, Education, Maturity, Educators, Planning

## Introduction

In academic literature, education and maturity are two very common words which have sometimes been replaced by improvement and development. Faculty development programs have also been more in the field of teaching and teaching skills. Due to the wide range of activities of university lecturers, one of the valuable and interesting changes in higher education is the continuous development of faculty members for reasons such as increasing the complexity of higher education, increasing demand from domestic and foreign institutions and it is necessary to balance teaching, research, services and personal responsibilities (Ababaf, 2019). The concept of content-educational knowledge was first introduced to the education community by Lee Shulman (1986) at the annual conference of the American Association for Educational Research, influenced by Dewey's view of the difference between scientists 'knowledge and teachers' knowledge (Shulman, 1986). Understanding the types of knowledge mentioned in Schulman, and in particular educational content knowledge, can be a great help in explaining the professional competencies of teachers, if the first step is to answer the question of whether the existence of this knowledge as educational content knowledge legitimacy is mandatory. As an independent science or not, and secondly, are the roots of Schulman's view of this type of knowledge among the theories of other teaching thinkers? Knowledge of content pedagogy (knowledge of educational content) General pedagogical or educational knowledge provides the necessary theoretical infrastructure to enter the teaching profession and is such knowledge as the basis for the production of other more basic knowledge such as content pedagogy, or practical knowledge of teaching (Lawler et al., 2018).

From this perspective, content knowledge is related to the maturity of faculty members, which is an essential and vital component of the success of faculty members as well as universities, because faculty members as an essential element of universities and higher education centers and as the executive arm of the three mission of universities. (Education, research and service delivery) and paying attention to them means paying attention to human capital in higher education and in order to achieve this mission (Dong et al., 2019) to retain faculty members, consider the program Development is considered as one of the most important university programs. The education system is the key to the future, and the progress of any country depends on the efficiency, effectiveness and capability of that country's education system; Therefore, higher education centers and universities play a vital role in the development process of a country at the national and international levels; Because the university is one of the main institutions of any country (Payumo, et al., 2019). Various factors affect the importance of the issue of faculty development . Factors such as the development of science and the emergence of different scientific trends and disciplines and subjects, student populations and their increasing diversity that make things more complex, changes in social and economic conditions and increasing competitive conditions that require more responsiveness of the university.

Requires a higher level, of change and development in faculty members. Faculty development refers to the wide range of activities that higher education institutions use to retrain and assist faculty members in fulfilling their roles. These activities are designed to improve and enhance continuous effectiveness at all levels of education (Rezaian, et al., 2014). One of the major challenges currently facing higher education globally is the qualitative and comprehensive development of university faculty members. As a result, most universities are looking for factors that affect the development of faculty members. The need for faculty development is undeniable for four main reasons. The most important reason is to help faculty members to teach, research and provide services. Students are the second reason for the need for faculty development. The third reason is society; That is, the context in which higher education institutions continues to live and provide the services required by that platform. The fourth reason is technological advances that make the development of faculty members even more necessary (Abdollahi, et al., 2017).

Bandali et al. (2018) in a study entitled "Pathology of faculty development programs of Shahid Beheshti University" in general, based on the research findings, it can be said that faculty development programs in all four groups of purpose, content, teaching-learning methods and evaluation methods need a major overhaul. Mohammadi Tabar (2018) in a study entitled "Faculty Maturity of Universities and Higher Education Institutions with Emphasis on Systematic Approach" Faculty Maturity should be approached

with a systematic and comprehensive approach in the form of contextual and environmental factors and components. And the outcomes, taking into account the various goals and needs of universities and faculty members, are planned and evaluated at all stages. Seif, et al. (2017) in a study entitled "Presenting a causal model of the role of factors affecting teachers' content knowledge education technology" Research findings showed that there is a positive and significant correlation between all areas of technology content knowledge education and content knowledge, educational knowledge Technology content knowledge, technology educational knowledge, educational content knowledge have a direct effect on technology educational content knowledge. In addition, technology knowledge, content knowledge and educational knowledge have an indirect effect on technology content knowledge education and the largest total effect is related to content knowledge. Homayeni Demirchi (2016) in a study entitled "Assessing the maturity of faculty members and providing desirable strategies for its promotion: a military university" confirmed the results of factor analysis of the fit pattern of faculty members, and showed that the components discussed in the study evaluate the maturity of faculty members well. Payumo, et al (2019) in a study entitled "Mapping and plotting the benefits of faculty development in relation to international research contributions" using a combination of evaluation methods (bibliography and surveys) provide evidence of the positive impact of global professional development programs on members The faculty indicated that it may be used as a reference for other universities and research organizations to develop and evaluate similar programs for faculty development.

Eiselein (2019) in a study entitled "Design, implementation and sustainability of faculty development: a model for large and diverse programs" regarding the development of faculty members concluded that members should improve the effectiveness of teaching and apply their new knowledge in Classes should be motivated and confident in doing so. Eiselein, et al (2019) in a study entitled "Late Academic Members: A Study of the Affairs of Faculty Members and Faculty Leadership Leaders in US Medical Schools" concluded that a variety of factors such as burnout, budget cuts, and changes in The need for productivity affects the development of faculty members. Also, these data show a striking gap between the demographic needs of late faculty members and the priorities of their beneficiary institutions. Faculty / Adult Development Offices Faculty members need to meet these growing needs. De Golia, et al (2019) in a study entitled "Development and development of faculty members for teaching in the School of Psychiatry: Where we are and what we need" concluded that despite the increasing efforts of the school in psychiatric wards and institutions, the real and significant needs for faculty development remain. A certain period of time is a significant need for the compilation and development of knowledge of faculty members that requires careful attention to leadership and management. According to the above, it is understood that one of the most important sectors in which organizational development is of strategic importance and position is universities and faculty members.

Universities and higher education centers are considered as the center of science, thinking and innovation, in which most of the elites, thinkers and specialists are active and are the most effective sector in providing specialized human resources in the country, and this is one of the important necessities. Come on. Today, with the expansion of new horizons of higher education, content-educational knowledge is introduced as the heart of teaching-learning scholarship, the nature of which is still unclear in higher education. Therefore, considering the presented materials, the present study seeks to answer the following question: "What is the effect of the idea of content knowledge of education on the development of faculty members in Farhangian University, Region 2 of the country?"

## **Method**

In terms of purpose, the present study is an application that was conducted with a mixed approach (qualitative and quantitative) with the exploratory design. In the qualitative approach, the Delphi method and in the quantitative approach, because it examined the current situation, the descriptive survey method was used. At this stage, in order to achieve the dimensions of the content knowledge of education through in-depth and exploratory interviews individually with scientifically selected experts, the necessary qualitative data were collected and analyzed using the analysis method. Content was identified and analyzed as a

research technique, concepts, and categories. In the qualitative section of the professors of Farhangian universities in region 3 of the country (Semnan, Mazandaran and Golestan) who are experts in the subject of research, 20 people were identified and their opinions were used. Using the law of saturation, the interview and information gathering continued until the theoretical saturation was reached. Using purposive sampling method and considering the law of saturation, the researcher was faced with data saturation after the ninth interview, but to ensure the adequacy of the data, the interview process continued until the tenth person, so the statistical sample in this section is 10 people. In a small part of the faculty, visiting professors and lecturers of Farhangian University in region 3 of the country, including (Semnan, Mazandaran and Golestan) in the year 1389-99, 263 people, whose opinions were used in a small part, based on Cochran's formula in 95% confidence level and measurement error  $\alpha = 5\%$ , 156 people were selected as a statistical sample by stratified random sampling based on university unit and gender as described in Table 1.

**Table1.** Number of statistical samples by university unit and gender

University	Gender	Number	Total
semnan	Man	24	29
	Female	5	
Mazandaran	Man	68	96
	Female	28	
Golestan	Man	21	31
	Female	10	
Total	Man	114	156
	Female	42	

To collect data from the researcher-made content knowledge education questionnaire (PCK) which has 82 questions and themes of effective teaching knowledge, teacher or pedagogical knowledge, specialization in scientific content, knowledge of student-teacher interaction, PCK-based actions in Farhangian University, in a 7-point Likert scale (strongly agree = 7, agree = 6, somewhat agree = 5, have no opinion = 4, somewhat disagree = 3, disagree = 2, strongly disagree = 1) and Qoroneh et al. (2014) which had 5 dimensions including (educational maturity, research maturity, maturity of specialized services, individual maturity, organizational maturity) with 93 questions in a 5-point Likert scale (very low, low, medium, high and very high) was used. In the quantitative phase of the research, in order to determine the reliability of the internal consistency calculation of the measuring instrument, a feature of the Cronbach's alpha test was used. The results of Table 2 show that the questionnaires used are reliable or in other words have the required reliability.

**Table2.** Reliability of data collection tools

Row	Hidden variables	Cronbach's alpha	Combined reliability
1	Theme of effective teaching knowledge	0.912	0.938
2	The content of content knowledge and pedagogical knowledge	0.933	0.940
3	Theme of expertise in scientific content	0.926	0.938
4	Theme of knowledge interaction with student-teachers	0.937	0.945
5	Theme of PCK-based measures in Farhangian University	0.934	0.942
6	Educational maturity	0.958	0.962
7	Research maturity	0.961	0.965
8	Maturity of specialized services	0.919	0.931
9	Individual maturity	0.865	0.888
10	Organizational maturity	0.898	0.914

As can be seen in Table 2, for all components, Cronbach's alpha is higher than 0.7 and the combined reliability values are higher than 0.7, so the measurement model is reliable. It should be noted that content analysis was used to analyze the qualitative data of the research. In this project, the steps of analyzing the collected qualitative data have been done in two stages of open coding and axial coding, which includes an analytical process through which concepts are identified and their features and dimensions are discovered from within. In the open coding stage, the researcher identifies the concepts and expands them according to their characteristics and dimensions. In the axial coding stage, the researcher puts one of the categories at the center of the process under study and exploration (main dimension) and then the other categories. (Agents) relate to it. In this regard, in this study, the main dimensions and related components have been identified. In the quantitative phase of the research, using factor analysis, it was determined whether the questionnaire measures the desired factors or not. Therefore, all the questions of this questionnaire, which were designed based on the factors identified by background and interview, were analyzed by confirmatory factor for significance. To analyze the data, descriptive statistics, inferential statistics, Kolmogorov-Smirnov test and exploratory factor analysis, confirmatory factor analysis and Friedman test were used using SPSS 21 software.

### Findings

Kolmogorov-Smirnov test was used to evaluate the normality of data distribution, the results of which are presented in Table 3.

**Table3.** Analysis of the normality of data distribution

One-Sample Kolmogorov-Smirnov Test			Content knowledge of education	Maturity of faculty members
Number			156	156
Normal Parameters <sup>ab</sup>				
Average			3.5732	3.5791
Standard deviation			0.542	0.49134
Most Differences	Extreme	Absolute	0/119	0.094
Positive			0.068	0.062
Negative			-0.119	-0.094
Kolmogorov-Smirnov Z			1.481	1.171
Asymp. Sig. (2-tailed)			0.025	0.129

Based on the data in Table 3, because at the 95% confidence level and measurement error = 5%, a significant level for the research variables  $\text{Sig} > 0/05$ , Is larger than the specified limit, ie for the variable of knowledge and education (1.481) and the maturity of faculty members (0.1171) was calculated above the significance level, so the distribution of data is normal and for inferential analysis of data, use Parametric statistical tests are allowed to investigate the effect of the idea of education content knowledge on the maturity of faculty members in Farhangian University, Region 9, based on the relationships between variables, pls software was used, the results of which are presented in the following tables.

**Table4.** Results of path analysis findings

Variables	SD	The level	significance	Amarat	Standard coefficient
The effect of education content knowledge on faculty development	0.19	0.000		48.586	0.892

According to the results of the path analysis in Table 4, between the latent variable of exogenous (content knowledge of education) and the latent variable endogenous (maturity of faculty members), based on the path coefficients, the factor load is 0.892, also Due to the fact that the value of t-value (48.586) is outside

the range (2.58 and 2-58), so the effect of content knowledge of education on the development of faculty members in Farhangian University in region 9 has been significant. Then, to show the degree of correlation and the effect of education content knowledge on the development of faculty members in Farhangian University, region 9, Pearson correlation formula and members' matrix were used to show the effect.

**Table5.** Pearson table on the correlation of two variables

		Impact rate
The effect of education content knowledge on faculty development	Pearson Correlation	0.892**
	Sig. (2-tailed)	0.000
	number	156

The output of Pearson table shows that the relationship between education content knowledge on faculty maturity is at an error level of less than 0.05 and this issue shows the significance of the effect of education content knowledge on faculty maturity in a positive way. Give. Also, the table of members' matrices shows the very high factor load of the effect of the content knowledge of education on the maturity of faculty members.

**Table6.** Correlation coefficient between two variables

Reliability Statistics		
Cronbach's alpha	Cronbach's alpha for standard items	Number
.940	.943	2

The results of Table 6 show that there was a very high correlation between the content knowledge of education and the development of faculty members and its rate is equal to 0.940.

## Discussion

The results showed that the effect of content knowledge of education on the development of faculty members in Farhangian University in 9 countries has been significant. The results of the present study are in line with the results of the research of Bandali et al. (2018) and Payumo et al. (2019) in terms of attention to university faculty development programs in all four groups: purpose, content, teaching-learning methods and assessment methods. Also, the results of the present study are not in line with the results of the research of Qoroneh et al. (2016) in two dimensions, namely the development of specialized services and organizational development. As the effect of content knowledge on maturity has become significant, this result is consistent with the conclusion of Homayeni Demirchi (2016) that the components discussed in the study evaluate the maturity of faculty members well. Also, the results with the research results of Mohammadi Tabar (2018), Eiselein (2019), Eiselein & et al. (2019) and De Golia & et al. (2109) on the issue that the development of faculty members should be in a systematic and comprehensive approach in the form of Underlying factors, environmental factors and consequences, and taking into account the various goals and needs of universities and faculty members in terms of real and demographic needs and the application of new knowledge, are planned and carried out at all stages of evaluation, in agreement. Is. The key question in determining the content of faculty development programs is what qualifications professors should have.

A review of the research literature shows that many models have been developed for the competence of university faculty members. According to the AOME Professional Standard, the five main competency groups of faculty members are: "Designing and planning learning activities", "Teaching and supporting learners", "Assessing and providing feedback to learners", "Teaching leadership" and "Research". Therefore, in this study, we sought to investigate the idea of content knowledge of education on the maturity of faculty members in order to present a model in Farhangian University, Region 2 of the country; Therefore, the immediate and future benefits of the present study are identifying the dimensions of the idea of content knowledge of education on faculty members in order to present a model in Farhangian

University, creating relative awareness of the concept and presenting a model of content knowledge of education on faculty members in Farhangian University. It was the region of the country. Identifying barriers and facilitating factors as well as short-term planning in the university, based on research findings to promote the main components of research in Farhangian University, region 3 of the country and helping officials and managers of Farhangian University centers to develop long-term strategies to improve education content knowledge. The development of faculty members was one of the practical consequences of this research. In the present study, the aim of familiarizing the leaders and managers of the education system with the paradigm of content knowledge of education, producing hypotheses, summarizing new materials and findings and critical evaluation. It is hoped that the results of the present study can make university administrators aware of the importance of this issue so that they can take effective and practical steps towards the success and implementation of the present study. The results of the present study showed that the content knowledge of education had 5 dimensions and in terms of impact, it was found that the effect of the content knowledge of education on the development of faculty members was positive and significant.

Among the limitations of the research was the statistical population of the research which was limited only to the professors of Farhangian universities of region 2 including (Semnan, Mazandaran and Golestan) and the geographical scope of the research was limited to Farhangian universities of region 3 including (Semnan, Mazandaran & Golestan). Also, the accuracy of some subjects in studying the questions and answering them was low. In line with the research objectives, it is suggested that the dimensions of development programs be prioritized and the necessary action be taken for each of the priorities. Also, training courses should be held in order to improve the competencies and specialized skills of university managers regarding social development. The performance of the explained indicators of content knowledge of education and development programs for academics should be monitored and evaluated, and the approach of universities should be changed from traditional and current activities to content knowledge activities of education and development programs.

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#### Ethical endorsement and code of ethics

The material and intellectual rights and do's and don'ts of intellectual property of researchers are protected by copyright law and citing sources. These questionnaires were anonymous and did not have to be completed.

#### Conflict of interest

The results of this study do not conflict with the interests of any organization or individual.

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