

Devising Academic Principals' Competencies Model by Concept Mapping Method

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ABSTRACT

University is an important section which broadly impacts on economic, social, cultural and political entities and sections of the society. Changes, innovations and efficiency improvements at universities would happen when the managerial system of universities and higher education institutions are also changed. Posing any change requires assigning managers with various competencies and skills in addition to their knowledge and scientific credit. In this line, present research is performed to identify core, major and minor competencies of academic principals and to provide a proper model. After studies on conducted researches regarding the research title in Iran and the world as well as analyzing academic principals' terms of references, their competencies were studied. Finally, academic principals' competency model was devised in three individual, managerial and social competencies, 11 major competencies and 38 mine competencies by applying iconography technique through concept system software and using the opinions of elites as well as the findings of analyzing statistical and casual data obtained from a questionnaire. Major competencies include: ethical – value competencies, personality traits, unique traits, decision-making competency, perceptual competency, leadership competency, administrative competency, student-orientation competency, team working competency, staff management competency and communicational competency.

KEYWORDS: Academic principals, manager's competencies, individual competency, managerial competency, Social competency.

INTRODUCTION

As the locus of breeding specialized forces in various social, political, cultural, economic and legal arenas, universities and high education play a vital role in society's excellence and improvement. In the meantime, academia's principals play the most critical role in achieving the aims of universities as high education leaders.

The complexity of societies as well as rapid and unpredictable changes in the nature of scientific organizations' operations demands effective managers to run academic affairs well. University's effective accountability to changes and spatial requirements needs principals' competencies beyond their experience and knowledge. More importantly, universities need knowledge, skills, insights and behaviors which make them as a culture-making and human-making entity fully compatible society's needs rather than a degree-making entity.

The problem is that fundamentally principals feel no need for their own training. They believe that traditional competency model is enough such as scientific credit, experience and knowledge. The basic question, however, is that "Is this concept on academic principals' leadership competencies a suitable accountability in today conditions?"

Undoubtedly, the answer is negative when we know that leading organizations such as training ones believe that a competitive advantage is vital for success in present area and competent workforce (from managers to staff) are introduced as a competitive advantage [2].

Tampo (1994) states that in recent years, the basic of organizational competitive advantage is changed from natural resources to human capital; therefore, effective usage of human capital in the format of managerial competency is too critical in competing ambience. Competent individuals are able to use personal knowledge, capabilities, skills, capacities and traits to achieve needed aims and standards of their roles and, as a result, to improve their organizations continuously. Put in one word, their competencies are necessary and unavoidable for organizational success [3].

Identifying the competencies and its modeling is unique in any organization; academic principals' competencies differ from industrial managers' ones. Hence, as the first step to improve the excellence of academic principals, it is too important to clarify their special competencies. In the second step, devising a model for academic principals' special competencies would pave the ground for a competency-based selecting and employing and, more importantly, successor-planning.

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Competency concept

In 1973, “competency” was coined and emerged in management literature by McClelland in his paper. Personal competencies or traits are identified as important predictors of employees’ performance and success. Their importance equals to educational talent and personal knowledge content identified by tests’ scores or results [7]. McClelland defines competencies as traits impact on superior performance [15]. Xuejun says that competency is a mixture of motivations, traits, self-images, insights or values, content knowledge and/or cognitive behavioral skills; any personal trait is measurable reliably and can be indicated to separate senior and middle staff [16].

McClelland started his research in 1950 (it rooted in psychology accompanied with emphasizing on motivation and success to use competencies) and then was considered by a high-ranked officer at USIA in late 1970s [9]. Through his cooperation with USIA, McClelland tried to improve selection stages. Introducing Harvard’s psychology by McClelland credited competency idea in HR literature [5].

As a McClelland’s colleague, Bayatzis focused on the nature of competencies as asked: “What does enable a person to provide ‘special initiatives’ which lead into certain results [1]?” Bayatzis defined competency as like Klemm. According to them, competency is a set of main personal traits impact on superior performance in an effective job. Bayatzis states that a model for effective performance is provided when such factors as organizational environment, job demands and personal competencies are homogenized. He focused on leading administrators’ traits and believed that need to more effective harmony is achieved by proper selection, promotion and incentives to people [12]. Spencer and Spencer provide a more detailed definition: “competency is an inner trait which relates to effective or superior criterion-referenced performance in a job or situation casually”[14].

Spencer and Spencer defined main trait as fully memorable part of personality. Casually relation means a competency which causes or predicts behavior and performance and effective or superior performance is criterion-referenced performance which shows that who performs a job well or poorly through a certain standard [11].

Lucia and Lespinger (1999) are, *inter alia*, effective authors who defined competency as a group of relevant knowledge, skill and insights which impacts on a major part of a person’s job and correlates with job performance [9].

In another definition, UK National Vocational Network for Vocational Qualification (1997) described competencies as performance standards and the ability to play job roles in a standard manner.

Competency based management (CBM)

It means a set of theories and processes with the aim of recognizing, ranking and managing competencies needed by people to perform certain jobs. Summarily, CBM is a tool to ensure that a right person is in right place and right time[4].

CBM is a research-oriented approach whose main aim is to define needed important behaviors for effective and excellent organizational and personal performance.

Competencies are always described as observable and measurable behaviors. However, they are tangible initiatives to be imitated easily. Instead, competencies can reveal some basic aims (created by personality, insight, values, self-perception or basic motivations). In such cases, CBM is an approach which confirms the fact that the most valuable asset is organizational members and their competencies [10].

CBM includes three major steps as follow:

1. Determining competencies model: the foremost and most important step in devising management development plans on the basis of CBM is to determine managers’ competencies. In fact, it is the cornerstone of development plans.
2. Recognizing training needs: Based on devised competency model in past step, needed competencies of each level of managers are identified. In fact, managers’ competencies show a favorable status to which managers should achieve and their distance from status quo is their training needs.
3. Identifying and executing management development plans: in fact, this step consists of three main steps:
 - (a) Identifying management development opportunities through training workshops, coaching, monitoring, etc;
 - (b) Developing managerial competencies via undertaking identified plans;
 - (c) Reevaluating managerial competencies to determine improvement rate [8].

Academic principals’ competencies model

During past twenty years, many public corporations and organizations resolved such problems as organizational structure changes, performance improvement, employees’ planning, successor planning, and so on by utilizing competency models plans[6]. Competency modeling was changed to a fashion in 1990s and it roots became more profound.

In fact, it is difficult to determine that which capabilities should be possessed by workforce to be successful. Needed behaviors for an effective performance differ organization by organization and role by role [13].

A competency model describes a mixture of knowledge, skills and traits needed to play a role in an organization effectively and is used as a tool to select, train, develop and evaluate successor planning. Determining and drawing such competencies are relatively complicated. A competency model consists of both inborn and acquired qualities. A job competency model determines the certain combination of competencies (knowledge, skills, qualities) needed to play a role in an organization (university) effectively [9].

Regarding the literature, one can define a major methodology to devise competency model which consists of six following steps:

(A) Studying the literature and internal documents: In this step, a research is conducted to identify current internal and external models which may be existed for different roles. In fact, is possible, connoisseurs' opinions are addressed in this step and their ideas on managerial competencies are obtained. When we evaluate competencies in connoisseurs' views, we can find which competencies are more mentioned by connoisseurs. So, one can identify paramount number of each competency and then to extract focused competencies.

(B) Interviews with academic successful principals: This step includes interviews with those people who are top performers. This is done to recognize their knowledge, skills and capabilities which have lead into their success.

(C) Studying terms of reference and competencies of academic principals.

(D) Devising initial list of competencies: In doing (C), a list of competencies is achieved which is in fact the initial list of competencies.

(E) Competencies credit: The list of competencies drawn in above step is, in fact, a raw list of competencies. So we should determine its credit [8].

Content credit method is a main method: Competencies initial list is changed to questionnaire format executed on a statistical sample. The question is that which competencies are and how much are vital and necessary for successful performance in universities. Each respondent can state his/her opinion via a continuum from "never necessary" to "fully necessary". After gathering questionnaires, the results are analyzed statistically to determine the credit of each competency. In present paper, concept mapping technique is used to determine the credit of the model.

(F) Setting competency model: after determining the credit of competencies, university principals' competencies model will be devised.

RESEARCH QUESTIONS

Major question:

Which model can be provided for the competencies of academic principals?

Minor questions:

- (1) What are central, major and minor competencies of academic principals?
- (2) Which model can be provided to devise central, major and minor competencies?

METHODOLOGY

In terms of data collection, this is a survey in descriptive (non empirical) one and in terms of aim, it is an applied one. The statistical population consists of academic senior managers. Our sample includes senior managers at Qom Public University, Hizrat Masoumeh Public University, Tehran – Qom Pardis Public University, Qom Industrial Public University, Islamic Azad University, and Applied – Scientific Comprehensive University and Payam Noor University.

Objective sampling method is used in present research. It means that subjects are selected in a manner to respond questionnaire properly. We mean senior managers, academic principals and training/research deputies. In some cases, senior managers refused responding. Totally, 16 senior managers cooperated with us in completing the questionnaire.

After determining the validity through experts' judgments and reliability through computing chronbach alpha ratio (94%), the questionnaires were distributed among 16 academic senior managers. Collected data were analyzed by using descriptive statistical method such as frequency, percentage, average and chi2.

To devise university principals' competency model, concept mapping method is used. By using concept mapping method and documented coding method, data regarding affecting factors on academic principals' competencies were collected and clustered in 38 main formats. Then, they were analyzed by concept system software as multivariable statistics. Managers' competency model was devised by using point maps, cluster maps, point cluster map and axis map. Stress value of multivariable statistical analysis was 0.23. So, since it is less than 0.35, one can trust achieved clusters and maps in confidence level 95%.

FINDINGS

To respond the first question (what are central, major and minor competencies of academic principals?). To identify central, major and minor competencies of academic principals, a 38-item questionnaire was devised. At the

first stage, respondents were asked to select academic principals' necessary competencies. At the second stage, they scored the importance rate of selected competencies from very low to very high. The results of statistical analysis indicated that three axis are important in managing universities. In terms of priority, they include:

1. Personal competency axis with the weight of 4.43;
2. Managerial competency axis with the weight of 4.33;
3. Social competency axis with the weight of 4.17.

Each above axis has its own criteria shown in table 1 (in terms of their importance).

Table 1. Central and major competencies in terms of their importance ratios

Row	Central competencies	Importance ratio	Major competencies	Importance ratio
1	Personal competencies	4.43	Moral and valued competencies	4.69
			Personality traits	4.31
			Unique traits	4.29
2	Managerial competencies	4.33	Decision-making competency	4.4
			Conceptual competency	4.38
			Leading competency	4.32
			Administrative competency	4.24
3	Social competencies	4.17	Student-oriented competency	4.53
			Team working competency	4.25
			Personnel management competency	3.97
			Communicational competency	3.92

To respond to the second question: (Which model can be provided to devise central, major and minor competencies?), concept mapping method was used and gathered data were analyzed by concept system software as multivariable statistics. In concept mapping, binary symmetric matrix was drawn for each expert and by using clustering and neighborhood techniques as well as statistical analyses and multidimensional scaling; proper maps were prepared in confidence level as 95%.

In present study, the steps of undertaking concept mapping were as follow:

1. Documented coding of competencies questionnaire data;
2. Competencies ranking;
3. Competencies categorization in the format of criteria;
4. Multivariable statistical analyses and computing stress value;
5. Point map drawing;
6. Cluster map drawing;
7. Point cluster map drawing;
8. Axis map drawing.

The first step: Coding questionnaire data

Here, each competency is uniquely coded and the competency was inserted into concept system software (CS). Totally, 38 competencies were inserted into mentioned software.

The second step: Competencies ranking

The weights given by experts to competencies were inserted into CS software in a 1 to 5 continuum. Such weights show the importance of competencies for university managers.

The third step: Competencies categorization

In this step, 38 competencies were inserted into the software and categorized in 11 clusters. Each cluster outlines the main competencies of academic managers.

The fourth step: Multivariable statistical analysis and computing stress value

Here, the results of competencies categorization were evaluated in multivariable statistical analysis by binary symmetric matrix for each expert. The results of this analysis along with multidimensional scaling indicate weaving rate. Weaving rate indicates the credit and confidence of previous steps and a base for maps analyzing in confidence

level of 95%. Computations and achieved maps would have necessary credit if computed weaving rate is less than 0.35. The weaving rate of present research is 0.23 which shows high credit of metrics, criteria and axis.

The fifth step: Point mapping

Based on computations in the fourth step, point map is drawn. This map indicates all needed academic principals' competencies in confidence level of 95 % (Figure 1).

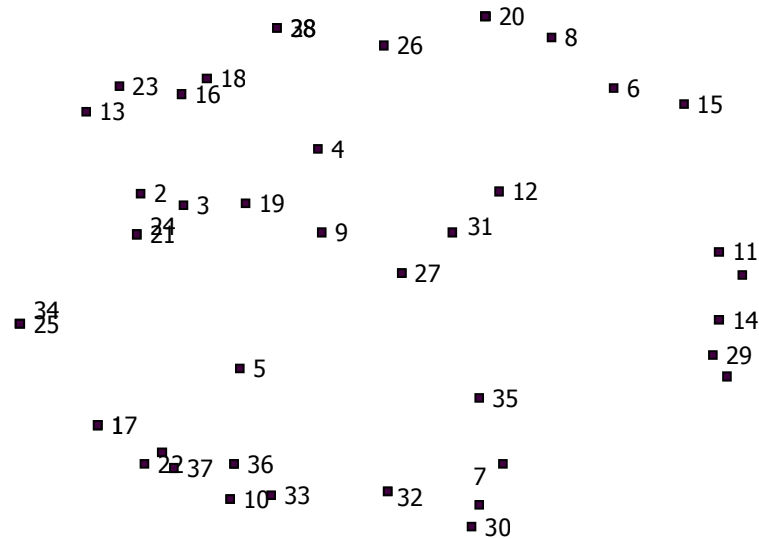


Figure 1. Point mapping to devise academic principals' competencies

The sixth step: Cluster mapping

In this step, cluster map is drawn based on computations in the fourth step and point mapping. This map shows main competencies which are highly important for university principals in 95% confidence level (figure 2).

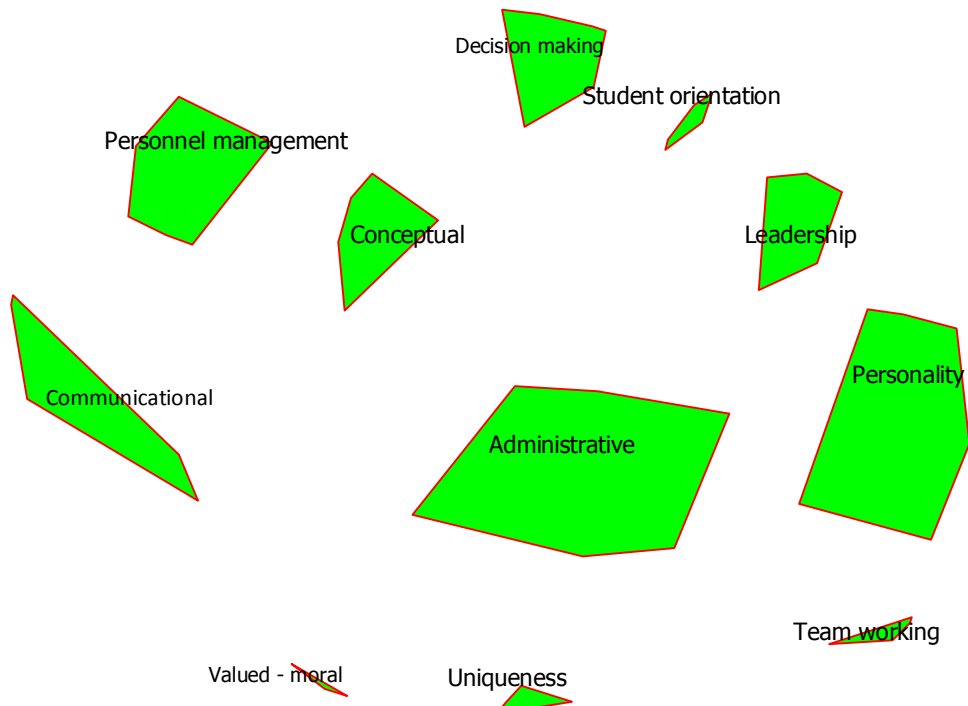


Figure 2. Cluster mapping to devise university principals' competencies

The seventh step: Point cluster mapping

In this step, point cluster mapping is drawn based on computations in previous steps. It shows the weight and importance of all main competencies which are important for university principals in 95% confidence level (figure 3).

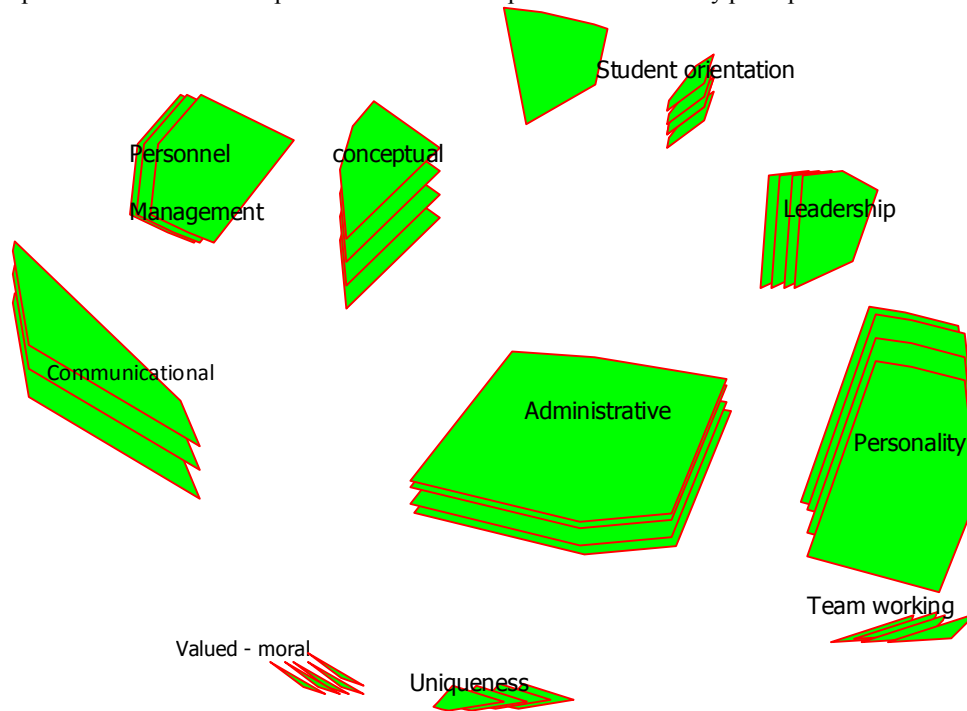


Figure 3. Point cluster mapping to devise university principals' competencies

The eighth step: Axis mapping

In this step, axis map is drawn based on computations in previous steps. It shows the weight and importance of all core competencies which are important for university principals in 95% confidence level (figure 4).

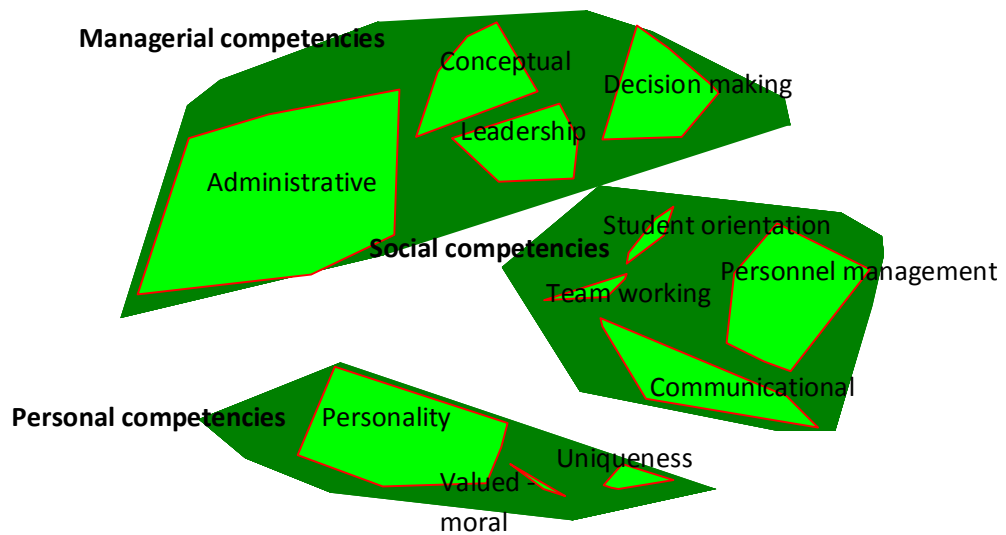


Figure 4. Axis mapping to devise university principals' competencies

CONCLUSION

As outlined in last figures, university principals’ competencies are shown in Table 2 in terms of importance. Figure 5 is the final model for university principals’ competencies.

According to the results, personal competency has the highest importance followed by managerial competency and social competency. The provided model is the final result of present study represented for the first time in Iran. It can be a proper base to select and appoint academic managers, to develop and to train academic managers and, more important, to plan university principals’ successor.

Table 2. Axis, aspects and factors of academic principals’ competencies by importance

Row	Central competencies	Main competencies	Minor competencies
1	Individual competencies	Valued – moral	(1) Compatibility with religious beliefs and Islamic morals
		Personality traits	(2) Organizational commitment
			(3) Responsibility and perseverance
			(4) Self-disciplined and well-appearance
			(5) Self-confidence
			(6) Ongoing learning
			(7) Pressure and stress endurance
			(8) Flexibility
			Unique traits
			(10) Knowledge
2	Managerial competencies	Decision making competency	(11) Stability
		Conceptual competency	(12) Problem recognition
			(13) Problem solving
			(14) Strategic thinking
		Leadership competency	(15) Systemic thinking
			(16) Creative thinking
			(17) Breeding others
		Administrative competency	(18) Penetration power
			(19) Networking
			(20) Time management
			(21) Planning and organizing
			(22) Legalized management
			(23) Experience
			(24) Resource management
(25) Monitoring and control			
(26) Financial and fund management			
3	Social competencies	Student-orientation competency	(27) Commitment to students
		Team working competency	(28) Trust building
			(29) Openness to advices
		Personnel management competency	(30) Team building
			(31) Conflict management
			(32) Empower
			(33) Contribution and authorizing
		Communicational competency	(34) Motivation creation
			(35) Effective listening
			(36) Negotiating and bargaining
(37) Verbal and nonverbal communications			
(38) Text communication			

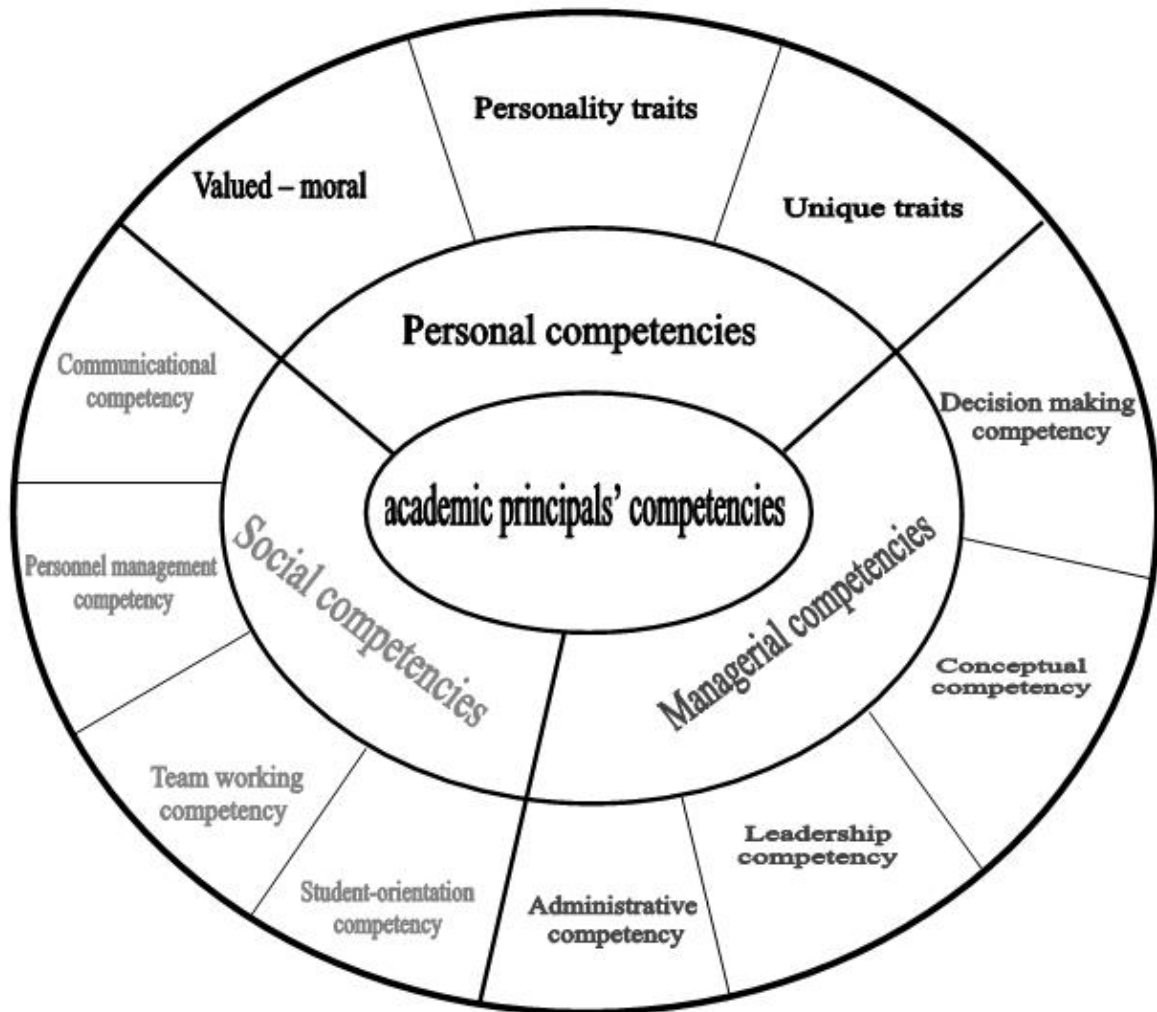


Figure 5. Academic principals' competencies model

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