

Development and Validation of Faculty Members' Efficacy Inventory in Higher Education

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Abstract

The purpose of this study was to provide an exploratory investigation of faculty member's efficacy inventory in higher education. Review of the literature showed a few studies about this subject and current instruments did not consider the theoretical foundations of faculty member efficacy. Moreover, most researches were limited to schools area and K-12. After an extensive review of the literature, first, a set of items to operationalize faculty perceptions and beliefs of efficacy in their tasks was developed. At second stage, higher education colleagues who were working in our university and other nearby universities examined the items for critique, and consulted with their colleagues about content and face validity. Third, a pilot study was initiated to map the domain of the construct and refined the measure and the meaning of faculty efficacy through the statistical methods. The instrument was field-tested and refined using a representative sample of universities faculty. Fourth, a factor analysis was utilized to identify factors related to efficacy scale of faculty members. Fifth, we reduced items and agreed about 18. Four factors were appeared in the factor analysis consisting of teaching competencies, research competencies, social competencies, and personal competencies. We insured all four sources of efficacy (mastery experiences, vicarious experiences, social persuasion, and emotional arousal) were represented in each efficacy components (teaching competencies, research competencies, social competencies and personal competencies). Cronbach's alpha coefficient was calculated for each factor and in overall the instrument was a reliable scale 0.83. Finally, differences between faculty members were studied based on some demographic variables such as gender and academic ranking. Results showed that there were not significant differences between all female and male faculty members efficacy and so based on academic ranking.

Keyword: Efficacy, Faculty members, Higher education, Inventory, Development and validation

1. Introduction

New progresses and extensive developments of world today have caused significant changes in social systems. Following these developments, education has also been subjected to extensive changes and has been especial attention to the universities. In fact, opening up new areas and expanding frontiers of knowledge, creativity, innovation and training of professionals has become a priority. Need for dynamic change and adaptation, quality growth has caused university officials' prime attention. As faculty members are factors affecting the quantitative and qualitative development of universities, therefore their perceptions, beliefs, behaviors and their working conditions and occupational environment can help achieve the research and educational objectives, and their personal development to be followed. On the other hand, "In a time when more and more students are coming to the university and concerns such as grade inflation, plagiarism, and academic dishonesty are becoming more salient, it seems pertinent that we begin to look at the motivations and beliefs of the professionals who guide the learning process at this level" (Fives and Looney, 2009, p.182). Of course "behavior in organizations is not simply a function of formal expectations and individual needs and motivation. The relationships among these elements are dynamic. Participants bring to the workplace a host of unique values, needs, goals, and beliefs. These individual characteristics mediate the rational aspects of organizational life. Moreover, a collective sense of identity emerges that transforms a simple aggregate of individuals into a distinctive workplace personality. This indigenous feel of the workplace has been analyzed and studied under a variety of labels, including organizational character, milieu, atmosphere, ideology, climate, culture, emergent system and informal organization" (Hoye and Miskel, 2003, p. 163). One of these feelings and beliefs includes efficacy.

If people have confidence in their capabilities, they will have a positive judgment about themselves, and this judgment would be led to efficacy. Two types of efficacy beliefs have been identified as integral to education; these are teacher-efficacy and collective-efficacy. "Teacher-efficacy has been identified as a crucial construct in the research on teachers and teaching" (Fives and Looney, 2009, p. 182), whereas, collective-efficacy has only recently begun to receive attention with regard to its role in educational setting (Goddard, 2001). Efficacy beliefs can affect goal setting, motivation, ability and persistence in confronting the existing challenges. We consider the role of university faculty members to be different from the role of school teachers who are associated with students. The material ahead includes a summary of the formation of efficacy and efficacy sources.

2. Conceptual Background

Efficacy, Teacher efficacy and their sources

After reviewing the theoretical background of efficacy, it has found that many studies have been limited to school area. Few studies are examined this important construction in the higher education. In fact, very few studies have investigated the influence of efficacy among the faculty members in college and the university level (e.g. Heppner, 1992; Preito and Meyers, 1999; Young and Kline, 1996; Loup, Clarke and Ellett, 1997; Fives and Looney, 2009).

2.1 Self-Efficacy

Efficacy is a psychological concept, and is associated with beliefs and attitudes of persons. Therefore, Bandura's social learning theory (1986) is suitable as an entry point. According to Bandura (1997) self efficacy is the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p.2). In other words, self-efficacy refers to people's judgments of their capabilities to organize and execute courses of action required to attain designed types of performances. Self-efficacy has been emerging in educational research primarily in the areas of career choices (Bandura, 1993; Bandura et al., 2001; Paulsen and Betz, 2004), instructional practices (Ashton, 1985; Gibson and Dembo, 1984; Rimm-Kaufman and Sawyer, 2004; Tucker and Herman, 2002), and motivation and performance (Bandura, Barbaranelli et al., 1996; Bong & Skaalvik, 2003; Bouffard & Couture, 2003; Marsh et al., 2005; Pajares and Miller, 1995). Self-efficacy is not a focus on one's experts or competence but rather on the belief about what can be accomplished (Bong and Skaalvik, 2003).

2.2 Teacher-Efficacy

Teacher-efficacy refers to how well teachers believe they can influence student learning. In the teaching context, teacher efficacy is expected to influence the goals teacher identity for the learning context as well as to guide the amounts of effort and persistence given to the task (Bandura, 1997; Tschannen-Moran, Woolfolk-Hoy and Hoy, 1998). "The efficacy of teachers has become an important area of the effective schools research" (Petersen, 2008, P. 35). Bandura (1993) suggested that when teachers feel confident and validated in their abilities to teach students, their teaching strategies, relationships with peers and students, and personal expectations for the student performance are similarly embedded with positive expectations.

Woolfolk-Hoy (2004 a) stated: "One of things that makes teachers' efficacy judgments so powerful is the cyclical

nature of the process. Greater efficacy leads to greater effort and persistence, which leads to better performance mastery, which in turn leads to greater efficacy. The reverse is also true. Lower efficacy leads to less effort and giving up easily, which leads to poor teaching outcomes, which then produces decreased efficacy" (P.7). Several studies indicated that teachers with a strong sense of confidence are less likely to refer students for special education services (Meijer & Foster, 1988; Soodak & podell, 1993 a, 1993b). Moreover, efficacious teachers also feel more prepared to teach culturally diverse students (Tucker et al., 2005). Tschannen-Moran and Woolfolk -Hoy (2007) suggest that experienced teachers also gain efficacy as they acquire successful teaching strategies along the way. Hoy & Woolfolk (1993) found: "... teachers who went to graduate school for further education were more likely to have a sense of personal teaching efficacy" (p. 367). In brief, "teacher - efficacy refers to the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context"(Tschannen- Moran, Woolfolk -Hoy, and Hoy, 1998, p. 233). Pajares (1992) contended that "beliefs are the best indicators of the decisions individuals make throughout their lives" (P. 307). Thus, it is an indicator of their future behaviors, decisions, and classroom organization.

2.3 Sources of Efficacy

There are four sources which develop people efficacy. These sources are: mastery experiences, vicarious experiences, social influence, and emotional stimulation (Bandura, 1977a, 1986, 2000c).

Successful performance of a task using personal skill and effort provides the most impact toward the growth of an individual's self-efficacy. Successes build strong beliefs in a faculty's sense of efficacy, while, repeated failure diminishes efficacy and causes one to expect failure in prospective attempts (Pajares, 2000; Tschannen-Moran and Woolfolk Hoy, 1998). If success, however, is frequent and easy, failure is likely to produce discouragement. A person continued success with a task also makes an occasional failure less of a barrier (Bandura, 1977a, 2000c). Success in task mastery is vital in developing strong personal efficacy. It not only gives the individual a sense of accomplishment, but also increases the probability of replication (Petersen, 2008).

Direct experiences is not the only way that staff can build its efficacy. "Vicarious experiences can increase efficacy beliefs, too" (Gage 2003, p. 69). Teachers listen to stories about the accomplishments of their colleagues as well as stories of other organizations. In this experience, the individuals gain efficacy through observing someone else model a task (Bandura, 1977a). Vicarious experience and modeling serves as an effective sources of personal efficacy.

The responses one gets from peers, family, co-worker, and other influentials can enhance or harm the individuals self efficacy progress. Gage (2003) suggested "the faculty can be changed and efficacy beliefs strengthened through a variety of different methods. Reporting successes to the group, attending professional development, pep talks, positive notes in mailboxes, and similar gestures can work to increase levels of collective-efficacy" (p. 70).

How well the individual feels about what can be accomplished makes an impact on the effort exerted and persistence employed. "Physiological and emotional orientation influences one's sense of proficiency, competence and accomplishment"(Petersen, 2008, P.19).The affective condition has a strong bearing on one's approach toward a task. It shapes how one interpret the task and, ultimately, impacts the individual's personal efficacy (Goddard, 1998; Goddard et al., 2004).

Achievement of the university mission depends on the intention and ability of faculties. Therefore focus on perceptions, beliefs and workplace of faculty members is an issue for further study and research. Faculty member beliefs about their capabilities, can prepare them for the main tasks of universities, including education, research and service, and helps students possessing creative and critical thinking and deep understanding about their scientific fields and obtaining tasks and jobs that are available in community. The findings of past researches in K-12 public schools have showed two different aspects of teacher-efficacy including personal and teaching efficacy (Gibson and Dembo, 1984; Guskey and Passaro, 1994).

Studies conducted in the schools have shown that there is a significant and positive relationship between student achievement and teacher efficacy (Ross et al., 2001; Moore and Esselman, 1992), but a few studies have examined efficacy among university level instructors. Researchers have investigated the role of self-efficacy in improving university-level teaching (i.e., Heppner, 1992; Preito and Meyers, 1999; Young & Kline, 1996;). One focus in these researches has been on the trining of Graduate Teaching Assistants (GTAs) and the influence formal training has on the development of their self efficacy for teaching (Heppner, 1992; Preito and Meyers, 1999; Fives & Looney, 2009). Fives and Looney (2009) stated: Other researchers about self efficacy in university faculty have provided descriptions of efficacy by gender (Bernnan, Robison and Shaughnessy, 1996; Landino and Owen,1988; Schoen and Winocur,1988) professional ranks (Schoen and Winocur,1988) and age, experience and gender make-up of academic departments"(p.183).

It seems that current instruments have not considered the theoretical foundations of this construct. But what about faculty member-efficacy in higher education? Does faculty member-efficacy serve to abet the effort of colleges to achieve their goals? Are there differences in the efficacy levels of various university faculty members? Given the work environment of higher education institutions where individual autonomy is interfaced with organizational interdependence, it has believed that faculty member efficacy merits is an important area for exploration. Therefore, the purpose of this research was two fields. First, we conceptualized and field-tested an instrument to gauge perceptions of faculty members-efficacy about their works. Secound, this study attempts to address differences in faculty members efficacy across gender and academic rank. A survey of perceptions and beliefs of the faculties efficacy based on these variables can help chancellors, deans and faculties to communicate the results towards enhancing and improving the campus space and culture and promoting the faculty members performance and productivity efforts. In brief, three general research questions guided this study.

2.4 Research Questions

1. What are the dimensions of faculty member-efficacy in higher education institutions?
2. Are there statistically significant differences between female and male faculty members-efficacy levels in higher education institutions?
3. Are there statistically significant differences between faculty members-efficacy based on academic ranks in higher education institutions?

2.4.1 First question: *What are the dimensions of faculty member efficacy in higher education institutions?*

The theoretical base from which the efficacy items were conceived was primarily developed by Gibson and Dembo (1984) and was further developed by Tschannen-Moran and Woolfolk-Hoy (2001). The items needed for the instrument were developed in collaboration with faculty members in education and pchycology departments, other experts, and doctoral students in selected public universities. The development of the instrument went through a series of phases before the final product was produced.

First, a pool of items was generated. Second, a panel of experts reacted to the items. Third, two pilot studies were performed to identify and refine the factor structure. Fourth, reliability and validity of the instrument were tested. Finally, a survey study based on some demographic characteristics was performed. These steps will be described in more detail in the following sections.

2.4.2 Item Generation

Items generated and shaped based on efficacy literature review, which deal with individual capabilities and main task of faculty members at universities. These items gauged the extent to which faculty members have believed in their capabilities to organize and execute actions required for goal attainments. The main tasks and roles of faculty members consist of student teaching, research on academic courses and interaction with other individuals in academic environment. Finally, four aspects for faculty members-efficacy formulated including: teaching competency, research competency, social competency and personal competency.

Initially, 94 statements were conceived by researchers, approximately 20-25 for each of the dimensions of faculty member capabilities, duties and relationships. These statements were subsequently given to twelve professors of education and pchycology, and other experts, to review for clarity and face validity. The items attempted to capture faculty members-efficacy with concise, accurate descriptors of faculty members beliefs and attitudes.

2.5 Panel of Experts

Twelve faculty members in education and pchycology departments and a PhD student were asked to check the face and content validity of the statements. The goal was to determine which questions captured the theoretical notion of faculty member efficacy. The items which there had agreement among the panel were selected for the pilot test. The 94 statements were reduced to 44 statements, between 8 and 14 statements for each suggested dimension of faculty member efficacy. Finally a ten point scale was devised for the respondents to rate each statement from strongly disagree (1) to strongly agree (10).

2.6 Field Test

Prior to the final testing, an informal field test was conducted to check the instrument for clarity in direcrions and item wording. A small group of experienced faculty members were asked to take the questionnaire concentrating on the ease of responding to the instrument. Although their general feedback was positive but a few changes were made .The instrument was regarded as concise, simple an direct; it remained intact.

2.7 Pilot Study

Following the item generation, panel review, field test, and revisions the 44 item questionnaire was piloted as an exploration of the measure and structure. The instrument was given to 127 faculty members at universities chosen through a convenience sampling. The purpose was to develop a set of reliable and valid measures for faculty members efficacy. The data were analyzed using a principal components analysis with a varimax rotation method. Initially, the items were forced into a four factor solutions, based on the theoretical framework used for item generation. However, the conceptual underpinnings of this solution were not supported, because all of the four components had items with high loading from more than one conceptual strand of faculty members efficacy. In order to make a more parsimonious solution, an additional principal component analysis was run with the following guidelines:

1. Unless there was a strong conceptual rationale to maintain items in subsequent analysis, items with high (above 0.40) loading on two or more factors were removed.
2. Item required a minimum loading of 0.40 on one factor to be remained.
3. It was attempted to obtain a parsimony or simple structure. So that items having high loadings be maintained.

Following the subsequent iterations of the principal component analysis, four dominant factors were emerged. It was discovered that the four sources of the conceptual framework were not independent aspects of faculty members-*efficacy*. These factors explained 70% of the total variance and 18 items out of the 44, remained (see Table 1).

It became apparent that conceptually factors that explained aspects of the faculty members-*efficacy* included: teaching competency, research competency, social competency and personal competency factors. The prevailing factors were found to contain virtually all of the four aspects of the faculty members-*efficacy*. Alpha coefficients was 0.83 totally, 0.83 for the teaching efficacy factor, 0.79 for the research efficacy factor, 0.78 for the social efficacy factor and 0.81 for the personal competency factor (see Table 3).

3. Results of the Data Analysis

The analysis produced four distinctive clusters of items: faculty perceptions about their teaching competencies, research competencies, social competencies and personal competencies. All items were loaded as was expected and the Cronbachs' Alpha reliability coefficients were acceptable: 0.83 for teaching efficacy, 0.79 for the research efficacy, 0.78 for social efficacy and 0.81 for personal competency.

Not surprisingly, these four dimensions were positively correlated (see Table 2), and formed a consistent archetype of efficacy for each referent cluster: teaching, research, social and personal competencies. Since a great care was taken to generate in each subset describing the four sources of efficacy, it was predictable that moderate correlations among the respective referents would emerge. We identified and subjected to factor analysis 18 items, which we predicted would define four aspects of faculty members-*efficacy* in higher education institutions. The factor analysis provided strong support for the construct validity of the measure.

In brief, the results of the data analysis demonstrate that the Faculty Member Efficacy Inventory (FMEI) is a parsimonious, reliable, and valid measure. The FMEI taps four critical aspects of efficacy in higher education. Hence, Faculty Member Efficacy Inventory (FMEI) is composed of four subsets: a 6-item subscale to measure teaching competency, a 4-item subscale to measure research competency, a 4-item subscale to measure social competency and a 4-item subscale to measure personal competency. Next, we explored some relationships between the four dimensions of faculty members-*efficacy* and some personal characteristics.

4. Main Survey

The main sample of this study was more diverse and larger than the pilot study. The data set against with Faculty Member Efficacy Inventory was tested from three different universities and 261 faculty members, contributed to the study and agreed to help collect the data.

4.1 Faculty Members-Efficacy, Gender, and Academic Rank

4.1.1 Second question: *Are there statistically significant differences between male and female faculty members-*efficacy* in selected public universities?*

To answer this research question, the mean scores on the four subscales were compared. The results revealed no significant differences between male (n=187) and female (n=63) faculty members on the four measures of faculty members-*efficacy* (no responded= 11). Regarding teaching competencies, females obtained a mean of 51.08 and males had a mean of 51.60 (F=0.46, p=0.57); With regard to research competencies, females obtained a mean of

33.44 and males had a mean of 32.95 ($F=0.63$, $p=0.43$). Concerning social competencies, females obtained a mean of 35.00 and males had a mean of 34.51 ($F=0.76$, $p=0.39$) and regarding personal competencies, females had a mean of 31.68 and males had a mean of 31.54 ($F=0.05$, $p=0.83$, see Table 4).

4.1.2 Third question: *Are there statistically significant differences between lecturer, assistant, associated and full professors faculty members-efficacy in selected public universities?*

To address this question, a multivariate analysis of variance (MANOVA) was performed. Because no significant F was found ($F=1.26$, $df=3$, $p=0.28$), this demonstrated that there was no significant differences between academic ranks on the four subscales of faculty members-efficacy (see Table 5). For teaching competencies, there was no statistically significant differences based on academic rank ($F=0.80$, $p=0.49$). This finding illustrated that academic rank did not produce differing levels of teaching competencies. Regarding research competencies, there were also no statistically significant differences based on academic ranks ($F=1.64$, $p=0.18$). This finding illustrated that academic rank did not produce differing levels of research competencies. There were not also statistically significant differences on the basis of the ranks with regard to social competencies ($F=0.73$, $p=0.53$). This finding illustrated that academic rank also did not produce differing levels of social competencies. Finally, similar to teaching, research and social competencies, academic rank did not produce differing levels of personal competencies ($F=1.18$, $p=0.32$).

5. Discussion

Our factor analysis of the items relating to faculty members-efficacy in higher education institutions defined four relatively distinct factors. The first factor, teaching competencies, measured the degree to which faculty member have confidence in their abilities for effective teaching. The second factor, research competencies, measured the degree to which faculty members have confidence in their abilities for research in their scientific disciplines. The third factor, social competencies gauged the extent to which faculty members have believed in and motivated by their capabilities for interaction and performed relationships between other individuals in academic environment, and, the fourth factor personal competencies gauged the extent to which faculty members have believed in their capabilities to organize and execute actions required for goal attainments.

In examining faculty perceptions of faculty members-efficacy, some might think that males would be more efficacious than females. That was not the case in this study. When it comes to levels of efficacy in higher education institutions involving colleagues, gender was not an issue. This finding appeared to contradict the popular notion that men are from Mars and women are from Venus (Gray, 1993).

Other question was: Is there a statistically significant difference in the degree of faculty-efficacy between lecturer, assistant, associate, and full professors in selected public universities? There were no significant differences in perceived levels of efficacy among different academic rank. This finding suggests that as faculty members ascend through the academic rank they are likely to maintain their efficacy beliefs. But what issues and factors in higher education preclude the growth of efficacy? What organizational factors support or detract from the continued development and maintenance of higher education efficacy? Indeed, this issue provides fertile ground for further study.

6. Conclusion

Although this research was exploratory, it underscored some important issues. First, a general index developed to assess the degree of faculty members-efficacy in higher education institutions and to measure the extent to which faculty members believed in their capabilities based on gender and academic rank. The index was tested to be reliable and stable. Second, the higher education efficacy measure is composed of four subtests: A teaching competency scale to measure the degree to which faculty member has confidence in their abilities for effective teaching. A research competency scale to measure the degree to which faculty member has confidence in their abilities for research in their scientific disciplines. A social competency scale to measure the extent to which faculty members has believed in and motivated by their intentions and capabilities for interaction and performed relationships between other individuals in academic environment, and, a personal competency scale to measure the extent to which faculty members has believed in their capabilities to organize and execute actions required for goal attainments. Finally, gender differences and academic rank were not evident when it came to faculty members-efficacy.

Self-efficacy is an important and key construct in the educational environment, then it suggested to carry out further investigation about it. It seems that performing research about self-efficacy is more crucial in the university environments and this is the starting the way.

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Table 1. Total Varienced Explained of Faculty Members Efficacy Factors

Statistical Indicator Components	Initial Eigenvalues			Extraction Sums of Squared Loading			Rotation Sums of Squared Loading		
	Cumulative %	% Of Variance	Total	Cumulative %	% Of Variance	Total	Cumulative %	% Of Variance	Total
Teaching competencies	34.184	34.184	6.153	34.184	34.184	6.153	19.438	19.438	3.499
Research competencies	50.554	16.370	2.947	50.554	16.370	2.947	38.693	19.254	3.466
Social competencies	61.900	11.346	2.042	61.900	11.346	2.042	55.566	16.972	3.055
Personal competencies	70.912	9.012	1.622	70.912	9.012	1.622	70.912	15.247	2.745

Table 2. Correlations among Faculty Members-Efficacy Components

Efficacy Components	Teaching competencies	Research competencies	Social competencies	Personal competencies
Teaching competencies	1.00	0.59*	0.34*	0.50*
Research competencies	0.59*	1.00	0.42*	0.49*
Social competencies	0.34*	0.42*	1.00	0.45*
Personal competencies	0.50*	0.49*	0.45*	1.00

* $P \leq 0.001$

Table 3. Rotated Factors Matrix Factor: Analysis of Faculty Member-Efficacy Dimensions

	Items	I	II	III	IV
1	I have theoretical knowledge enough about the subject matters that I teach.	0.841			
2	My educational experiences lead to more needed teaching skill in me.	0.832			
3	I apply disciplinary procedures in class well.	0.694			
14	I have mastery in providing and producing the teaching material and resources .	0.642			
7	I believe that high level goals lead to teaching progress.	0.575			
4	I have mastery in evaluation methods considering teaching methods.	0.465			
8	My research abilities make research work enjoyable to me.		0.900		
16	One of my good skills is providing and formulating books and articles.		0.897		
10	My capabilities in formulatong research projects lead to my scientific achievement.		0.733		
12	I do a good judgement if they assign me a research work for evaluation.		0.713		
11	I creat a warm climate whenever I have social relation with students.			0.955	
18	I have a fair social relationship with my peers.			0.870	
17	The students are feeling comfort whenever the discuss their problems with me.			0.848	
15	One of my abilities is directing and leading of discussions in meetings.			0.631	
5	When I really try, I can get through most difficult students.				0.819
9	My acheivement in my job performance is due to my efforts..				0.784
6	If the chairperson assigns me different courses, I will teach them successfully.				0.672
13	My presentation skills in scientific meetings will encourage the audiences to listen carefully to my lecture.				0.490
Alpha Coeficient (Totally 0.83)		0.83	0.79	0.78	0.81

Table 4. Mean, Standard Deviation and MANOVA of sub scales of Faculty members efficacy based on Gender

Statistical Indicator Efficacy Beliefs	Female		Male		F	Sig
	Mean	SD	Mean	SD		P ≤ 0.05
Faculty member efficacy	151.20	11.23	150.59	15.21	0.88	0.77
Teaching competencies	51.08	4.60	51.60	5.42	0.46	0.57
Research competencies	33.44	3.68	32.95	4.49	0.63	0.43
Social competencies	35.00	3.43	34.51	4.03	0.73	0.39
Personal competencies	31.68	3.83	31.54	4.65	0.05	0.83

Table 5. Mean, Standard Deviation and MANOVA of subscales of Faculty Members Efficacy based on Academic Rank

Statistical Indicator Efficacy Beliefs	Adjunct		Assistant		Associated		Full Professor		F	Sig
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		P ≤ 0.05
Faculty member efficacy	149.76	13.89	149.56	14.58	153.52	13.97	150.13	13.97	1.26	0.28
Teaching competencies	50.58	5.57	51.29	5.18	52.20	5.32	51.29	4.92	0.80	0.49
Research competencies	33.35	4.11	51.29	5.18	52.20	5.32	51.29	4.92	1.64	0.18
Social competencies	35.15	4.23	34.29	4.03	35.73	3.74	34.75	3.19	0.73	0.53
Personal competencies	30.69	4.52	31.38	4.56	32.30	3.83	31.16	5.05	1.18	0.32