

University teachers' action research: An adventure into uncharted waters?

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Abstract

One of the main approaches of educational systems in enhancing the teaching quality has been increasing teachers' action research skills. The objective of this study has been identification of university teachers' action research skills in higher education in Iran. The population under study has been all teachers at University of Kashan, Iran (283) from which 189 teachers have been randomly selected. The instrument employed has been a self-made questionnaire which assessed teachers' action research skills based upon four factors (diagnostic Skills, attitude towards action research, data collection skills, and practical action research abilities). The reliability of the questionnaire was assessed by Cronbach's Alfa as 0.852 and this is indicative of the high reliability and internal consistency of the instrument. This study clearly showed that a large number of university teachers have no information about the role of action research in improving the quality of teaching and learning. Data analysis showed that even noticeable differences are not observed in the behavior of teachers familiar with action research and those who are unfamiliar with it. The most interesting finding of this study was the discovery that all university teachers were able to recognize the issues and topics related to their profession (topic recognition skill) and are deeply preoccupied with such issues (attitude towards action research), but they lacked the necessary skills to cope with these issues and make the relevant practical decisions (data collection skills and practical action research). To overcome this deficiency, the researchers suggest in-service educational programs organized by university authorities with the aim of turning teachers to researchers familiar with action research skills.

Keywords: Action research, Teaching, Educational Supervision, Enhancement of Teaching Quality, University Teachers.

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1. Introduction

Iranian university teachers at higher education organizations are required to teach 300 hours on average each year. In public education in U.S, this is more than 900 hours each year (Nolan, 2008). Educational supervision has been conducted for one hundred years, and a question has occupied educational supervisors' and educational managers' minds: How can teachers' huge teaching efforts be translated into their professional efficacy through effective supervision and guidance? (Glickman, Gordon & Gordon, 2009, Wiles & Bondi, 2004). At first, standardization of teaching process was appealed to following scientific management movement. In this case, the duty of supervisor or educational manager was to specify the harmony of teachers' teaching methods with the predefined criteria (Oliva, 2008). Based upon this approach, it was easy to judge the teachers' performance, the supervisor would try to reduce the teachers' pedagogical behavior to some definite specific behaviors so objective evaluation of the teachers would be possible (Niknami, 2014). This is the procedure employed in student evaluations in Iranian higher education system in which teachers' professional behaviors are reduced to a limited number of educational factors and they are assessed and judged by a certain form of survey. Logically, such forms are intended to improve teachers' skills in teaching-learning at university classes. The results of student assessments are considered for teachers' extension of contracts and tenures, but the question which is posed is : can this evaluation procedure lead to improvement in teaching?

It is obvious that teachers can potentially promote areas and skills specified as weak and unsatisfactory by their students after one or two terms. However, the fact is that, in educational supervision specialists' opinion, educational managers have been able to help teachers' development only to a limited degree. In other words, if teachers lack the minimum qualifications, supervisors or educational vice managers at universities can have little role in their professional development any further (Oliva, 2008). Hence, this question has still attracted higher education managers: How can we help university teachers' to maximize their teaching efficiency and students' learning? On the one hand, there is a slim likelihood of observing university classes as professional observers, and basically convincing some professionals like medical doctors and university professors about their educational weaknesses is a formidable task (Roden, 2009). On the other hand, relying solely on evaluation forms, most optimistically, leads to development of only "some" aspects of teachers' teaching methods (Fazlikhani, 2005). A large number of educational systems, in public education and at higher education, have sought for self-regulation and self-evaluation in their educational approach (Hopkins, 2008). Theoretically and logically , self assessment and self regulation can not be achieved if teachers do not regard teaching as significant and valuable (Sarmad, 2001). This statement is fundamentally true. In the same line of research, findings of the study by De Angelo, et al (2009), showed that teaching is personally very important for 99 percent of university instructors. These criteria are generally appropriate, especially for teachers who are at intermediate or at high level of their professional development (Glickman, Gordon & Gordon, 2009). Application of such frameworks necessitates teachers' familiarity with action research skills. In fact, the main condition and prerequisite in establishing an authentic self-evaluation system in higher education is naturalization or internalization of action research and teachers' genuine interest in action research and their complete familiarization with action research abilities. In the following section, the theoretical foundations and research principles of this significant phenomenon will be depicted in the context of Iranian educational system.

For almost two decades, action research has been considered as an effective strategy in teachers' professional development at all levels of educational structures. According to Chou (2010), action research is an instrument which can improve teachers' teaching methods and strategies in their classrooms. Today, action research is a research and teaching tool as well as a learning strategy for teachers (Kapenieks, 2013, Elder, 2009).

Hopkins (2008) states that "action research is an action intertwined with research and a process which is organized and disciplined by research, a personal effort to gain insight which is obtained through the process of development and modification" (p. 42). Zuber-Skerritt believes that action research is a dynamic, regular and collective activity and allows the teachers to embark on discovery based on their own methods and they can observe the reflection of their activities through translation of their theories into practice (quoted in Yaman, 2010). Akram et al (2012) regard action research as a method by which teachers can personally recognize problems and challenges of classrooms and tackle them to ultimately provide solutions. Amanda et al (1999) are of the opinion that there are several different definitions for the concept of action research, most of them have a few shared characteristics: 1) focus on change and development, 2) involvement of professions in research, 3) finding out facts produced by action, this process is like riding a bicycle, an act which includes consistent data collection and the relevant feedback (Akram et al, 2012). Hence, teachers are supposed to adopt such a trend of professional development in their teaching procedures.

According to specialists in action research, it is categorized as one of teachers' general skills. Generally, teachers' necessary skills are divided into two groups: general and specific or specialized skills. The first one includes general skills like classroom management, teaching methodologies and strategies which are often needed by teachers in the process leaning-teaching. The second one includes skills related to their special field of study. An action researcher studies educational phenomena focusing on his/ her acquired skills relevant to his/her pedagogical activities. In fact, action researcher gets sensitive and conscious about the event happening in his/her classes and at school (Saki, 2005). This approach leads to problem solving or improvement in the situation due to its simplicity of practice and practicality. Hence, action research is one of the most effective research methods for university teachers (Salighedar, 2011). Educational researchers have found out that action research increased teachers' research skills, cognitive abilities, problem solving and efficacy (Cochran-Smith & Lytle, 1999; McNiff & whitehead, 2006; Mertler, 2005; Stringer, 2007; Nasrolahi, Krish & Noor, 2012). Using this method helps educators to be successful in their pedagogical enterprises and enhances their professional development (Mertler, 2006). Through action research, classroom and student issues are identified in the process of specifying educational objectives; relevant solutions are also put forward. In addition, educators design a series of problem-centered activities and put them into practice. Creating such activities in classrooms necessitates teachers' familiarity with concepts and objectives of action research (Gorgani, Matlabi, & KalateMiri, 2010).

There are several advantages, goals and outcomes for action research. Scholars have pointed out the following goals for action research: University teachers could be taught new skills and novel approaches could be included into teaching and learning to the current educational system. Researchers and university teachers can resolve specific issues and problems in particular circumstances and implement problem solving methods in their classes. Furthermore, action research creates a relationship between teachers and researchers at universities (Quoted in Zandanian, Isavi & Jafari, 2011) The logic behind action research is that the teacher is at the heart of classroom and more than anybody else owns the ability and qualification to detect problems, analyze and evaluate them and provide the relevant solutions. Fortunately, in public educational systems in Iran, extensive programs have been devoted to the promotion of teachers' action research competencies, however, at higher education; teachers do not receive the necessary support contrary to their huge involvement in research and pedagogical activities. With respect to this disappointing situation, the present study is an effort to investigate action research as a professional trait within university teachers. Teachers' action research ability and willingness is significant for different reasons and from different angles and perspectives. Hopkins (2008) stated three main factors: creation of a link between classroom research and professional judgments of university teachers in terms of teaching and learning; concentration of teachers' classroom projects on the curriculum and syllabus and unsuitability of traditional teaching methods for promoting teachers' teaching quality and performance. The present study can offer some helpful information to higher education authorities through portrayal and depiction of current situation with respect to university teachers' action research skills and performances. In addition,

introducing the concept of teacher as action researcher as a logical appropriate approach for fostering teaching quality in higher education in Iran is of paramount importance.

Researches in the field of action research are generally conducted at public education and on teachers at different levels. A lot of researches have been carried out as the outcome of action researches themselves which have been carried out by the teacher or in collaboration with his /her colleagues. They have embarked on an "action research" themselves. Works of Sappington, Baker, Gardner & Pacha (2010) and Deemer (2009) are included in this category of research studies. In this kind of research, the emphasis is on effectiveness, findings and outcomes of research based on researcher's perspective. In some research studies, action research principles are taught to teachers and then the advantages and disadvantages are enquired and solicited. O'Connor & Anderson's (2006) research fall into this classification. In this study, student-teachers who were studying at higher education assessed and evaluated action research and stated that their familiarity with action research was very important and valuable. Carver & Kein (2013) have reported similar findings in their study.

In Iran, Rezaie (2011) delineated the fact that student-teachers who had passed action research courses enjoyed much more noticeable professional development as compared with those with no action research training. In Eskandari's (2011) research it was found out that action research training had a positive effect on teachers' teaching performance, research, publication, services, professional development, evaluation and assessment. Moradi (2010) studied the effects of taking part in action research courses on increasing Tehrani high school teachers' professional skills. He came to the conclusion that this training course had a considerable effect on increasing research and teaching skills. The most noticeable effect was on teachers with 10 to 20 years of teaching experience. Gorgani, Matlabi, & KalateMiri (2010) compared and contrasted teachers with and without action research training in terms of three factors: research skills, problem solving, and teaching procedure. The findings showed that there was no significant difference between them with respect to research skills and teaching procedure. However, there was a significant difference in regard with problem solving skill.

2. Method

The general goal of the present study has been an analysis of university teachers' action research skills in four areas: 1. Action research skills in diagnosing educational problem in their work, 2. Attitudes towards action research, 3. Data collection skills, 4. Practical activities in confronting instructional problems. University teachers' action research skills based on their ethnographic demographic characteristics are also elaborated on.

2.1 Research Methodology

This is a descriptive-inferential study which aims to investigate university teachers' action research skills in terms of four factors (skills of recognizing appropriate topics and issues for action research, university teachers' attitude towards action research, university teachers' data collection skills, and university teachers' practical activities for conducting action research).

2.2 Population and Sample

The population of this study comprised all university teachers (283) at University of Kashan, Iran, in the academic years of 2015-2016. The researchers first tried to include all university teachers at this university in this survey. However, owing to some administrative issues, it proved inevitable to study a sample of this population.

The necessary sample size was determined to be 165. However, after a pilot study (a preliminary analysis) on 40 teachers and specification of population variances, 189 participants were considered as necessary for this survey. University teachers were randomly selected to fill in the questionnaire. In the case of a teachers' reluctance in filling in the questionnaire, another one would be randomly selected to do so. Researchers tried their best to follow the regulations and norms of random sampling procedures as far as possible. Finally, the researchers came up with 190 completed questionnaires for data analysis and data interpretation. Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was proved to be 0.779 which approves the adequacy of sample size and questions for the factor analysis procedure.

2.3 Data Collection Tools

The instrument employed by the researchers for data collection has been a self-made questionnaire on action research. After studying special sources and similar research instruments, 181 items were identified for four factors (topic recognition, attitude toward action research, data collection skills, and practical action research activities). Items were screened at three stages by the researchers, post graduate students and senior scholars. The researchers came up with 36 items in the end (9 items for each factor); they were developed based on a 5 point Likert scale. The reliability of the questionnaire calculated by Cronbach Alfa was specified as 0.852 which indicated its acceptable reliability index and internal consistency of the research instrument. Obtaining high scores by teachers on each item reflected teachers' high action research skills under study.

2.4 Analysis of data

One of the most important questions of this study has been: are university teachers familiar with the concept of action research? To come up with the answer, teachers were explicitly asked "Do you know what action research is?". In response to this question, 66 percent of university teachers stated they had no familiarity whatsoever with the concept. However, does this signify that 34 percent of teachers are familiar with it? To answer this question, action research main factors of teachers familiar and those of teachers unfamiliar with it were compared and contrasted.

Table 1. Comparison of total scores of action research of university teachers familiar and those of unfamiliar with this concept

	Mean. Difference	Std. Error. Difference	t	p
Teachers Familiar with Action Research	1.65	2.28	0.726	0.469
Teachers Unfamiliar with Action Research				

As shown in table 1, there is no significant difference between action research skills of the two groups. This finding is important since it is against our expectation contemplating a significant difference between the two groups.

However, the existence of such a difference was not approved. In fact, practically, there is no difference between these groups in terms of having action research skills. At the next stage, data analysis of university teachers in different faculties offered similar findings.

Table 2. Analysis of variance on total scores and university teachers in different faculties

	d.f	M.S	F	P
Recognizing Appropriate Problems	185	17.98	1.21	0.14
Attitudes toward action research	185	6.11	0.33	0.85
Data Collection Skills	185	79.44	2.12	0.08
Practical Activities	185	51.06	1.47	0.21
Total Score of Action Research Skills	185	442.04	1.72	0.14

As shown in the findings of table 2, there is no significant difference among teachers' scores in different faculties both in total score of their action research, in general and in action research skills in particular. Similar results were obtained with respect to gender differences.

Table 3. Comparison of male and female university teachers in terms of action research skills

		Mean	Mean. Difference	Std. Error. Difference	t	p
Recognizing Appropriate Problems	Female	35.09	0.172	0.895	0.192	0.848
	Mail	34.92				
Attitudes toward action research	Female	35.14	0.166	0.985	0.169	0.856
	Mail	34.97				
Data Collection Skills	Female	27.85	1.05	1.43	0.738	0.641
	Mail	26.79				
Practical Activities	Female	26.42	0.198	1.37	0.145	0.885
	Mail	26.62				
Total Score of Action Research Skills	Female	124.52	1.19	3.74	0.320	0.749
	Mail	123.32				

The findings of table 3 show that there is no significant difference between male and female teachers in relation to their total score and action research skills scores. All the data analysis was indicative of the fact that almost one third of university teachers stated their familiarity with action research, we must interpret this claim with caution nonetheless. At a later stage, other complimentary data analysis indicated their unfamiliarity with action research.

As pointed out in the section on research instrument, the questionnaire comprised four main factors: the skill of recognizing appropriate topics and issues for action research, university teachers' attitudes towards action research, university teachers' data collection skills, and university teachers' practical measures for action research. Analysis of data led to interesting results and findings. Table 4 presents university teachers' scores on each of these factors in comparison and in relation with the test value.

Table 4. Comparison of teachers' scores on factors of action research skills with the norm score (27)

	d.f	Mean	Std. Deviation	t	p
Recognizing Appropriate Problems	189	34.94	3.86	28.34	0.0001
Attitudes toward action research	189	34.99	4.24	25.93	0.0001
Data Collection Skills	189	26.91	6.19	-0.188	0.851
Practical Activities	189	26.60	5.92	-0.919	0.359

Table 4 shows that university teachers' scores on recognition (selection) of topics related to their teaching and their attitude towards proper educational topics were higher than the test value. However, their mean score on data collection skills and practical action research skills turned out to be 26 which shows no significant difference with the test value. However, there was a significant difference regarding their years of teaching experience.

Table 5. Analysis of Variance of total score and action research skills scores of university teachers based on their years of teaching experience

		Mean	Std. Deviation	Mean Square	F	p
Recognizing Appropriate Problems	1-10 Years	34.7	4.0	13.56	0.909	0.405
	11-20 Years	34.7	3.6			
	21-30 Years	35.7	3.6			
Attitudes toward action research	1-10 Years	34.7	4.4	32.01	1.788	0.170
	11-20 Years	34.6	3.3			
	21-30 Years	36.1	4.2			
Data Collection Skills	1-10 Years	25.7	6.2	134.55	3.608	0.029
	11-20 Years	27.4	6.2			
	21-30 Years	28.8	5.5			
Practical Activities	1-10 Years	25.3	5.7	168.22	5.00	0.008
	11-20 Years	27.1	5.8			
	21-30 Years	28.8	5.7			
Total Score of Action Research Skills	1-10 Years	120.6	16.2	1.036.7	4.10	0.018
	11-20 Years	124.0	15.6			
	21-30 Years	129.5	15.2			

As Table 5 demonstrates, there is a significant difference in terms of action research skills with respect to university teachers' years of teaching experience. This difference is noticeable in data collection skill, practical action research, and total score of action research skill. To find the direction of these differences, post hoc Tests has been utilized. It should be pointed out, however, that because of large number of the tables, only significant statistical differences are presented.

Table 6. Paired comparison of teachers based on their years of teaching experience

		Mean	Std. Deviation	Mean. Difference	Std. Error. Difference	p
Data Collection Skills	1-10 Years	25.7	6.2	3.03	1.20	0.033
	21-30 Years	28.8	5.5			
Practical Activities	1-10 Years	25.3	5.7	3.45	1.14	0.008
	21-30 Years	28.8	5.7			
Total Score of Action Research Skills	1-10 Years	120.6	16.2	8.89	3.12	0.014
	21-30 Years	129.5	15.2			

As information presented in table 6 reveals, total score of university teachers with 21 -30 teaching experience is significantly higher than that of teachers with 1-10 years of teaching experience. However, is teachers' high or low action research skill due to the duration of their teaching experience? To answer this question, a one-way analysis of variance was run.

Table 7. Analysis of Variance on total score and teachers' action research skills according to their academic status

	d.f	M.S	F	p
Recognizing Appropriate Problems	186	71.78	1.65	0.179
Attitudes toward action research	186	44.07	3.03	0.031
Data Collection Skills	186	68.90	2.49	0.061
Practical Activities	186	57.33	1.82	0.145
Total Score of Action Research Skills	186	43.77	2.81	0.041

Data presented at table 7 manifest the fact that there is a significant difference between university teachers as regards their total scores of action research and topic selection skill at confidence level of 95 percent and their data collection skills at confidence level of 90 percent. To find the direction of such differences, post hoc test was used. Here again, only significant differences are presented.

Table 8. Paired comparison of university teachers' scores based on their academic status

		Mean	Mean. Difference	Std. Error. Difference	p
Recognizing Appropriate Problems	visiting teacher	36.00	1.55	3.34	0.039
	instructor	31.8			
Recognizing Appropriate Problems	assistant prof	35.16	1.19	4.18	0.028
	visiting teacher	31.8			
Data Collection Skills	instructor	36.84	1.72	4.48	0.048
	visiting teacher	32.36			
Total Score	visiting teacher	114.09	6.52	18.37	0.027
	instructor	132.46			

As data presented in table 8 indicate, visiting teachers' mean scores on total score of action research skills, topic selection skills, and data collection skills are lower than those of faculty member including instructors and assistant professors.

3. Discussion and Conclusion

The first conclusion which can be made in consideration of the findings of this study is that university teachers do not have sufficient familiarity with the concept of action research. In fact, although a great proportion of teachers expressed their familiarity with the concept contrary to the researchers' expectations, this did not translate into noticeable changes in their educational behavior at all. This condition is observed in the studies conducted by famous researchers like Mathison (1988). In reality, in such cases, university teachers support an idea or a theory just theoretically and mentally, in their imagination, but cannot put it into practice due to different reasons such as lack of enough time, students' expectations, institutional expectations, and lacking in the relevant knowledge, and skills. However, it was found out in this study that more than 60% of university teachers had no clue about action research as one of the fundamental educational strategies for fostering the quality of education. In addition, the findings of this study demonstrated that at least regarding the two variables of "course of study" and "gender", university teachers did not manifest any significant differences in their action research skills. Moreover, differences attributed to university teachers' academic status were basically confined to visiting teachers and instructors. These findings are indisputably reflective of the fact university teachers' understanding and perception of the concept of action research and its requirements is not systematic and profound.

It is taken for granted that there is a significant difference among university teachers as concerns the years of their teaching experience. These differences were observed in relation to two main research variables: data collection skills and practical aspects of action research. It should be mentioned that these difference did not exist in regard to the first two variables of the research (recognition and awareness of important topics and their attitude towards action research). In reality, all university teachers can recognize educational issues and topics related to their profession (skills of recognition of important topics and issues) and are practically mentally engaged with these issues (attitude towards action research), but they manifest differences in confronting these issues and making the relevant practical intelligent decisions.

Furthermore, it was specified that university teachers with 21-30 years of teaching experience utilize a number of diverse sources to get the necessary information when they tackle educational issues and problems. Their lengthy professional experience prompts them to pay more attention to different information sources (data collection skills); they then take some effective practical measures to improve the teaching quality.

In brief, action research is, no doubt, a fundamental characteristic of university teachers, they all, consciously or unconsciously, possess some parts and elements of this skill. As mentioned before, action research includes four main factors (recognition of important topics and issues, proper attitude toward action research, data collection skill, skill in taking practical measures in improvement of teaching methodologies), we come to the understanding that university teachers' situation in terms of the first two factors is fine, and it is debatable for the second two factors. In other words, it can be stated that university teachers have got the motivation and incentive to improve their teaching methods and are able to recognize weaknesses and strengths of their teaching procedures. They lack the necessary skills to cope with their weakness and sensitive educational issues nonetheless. We must point out that it is the responsibility of higher education system to deal with this issue, that is, enhancement of teaching quality. The findings of the research conducted by Gibbs and Kuffi at 22 universities of 8 countries have indicated that teachers who have received teacher training courses have turned out to have more "efficacy" in their teaching procedures (Quoted in Mehrmohammadi,

2013). Unfortunately, higher education authorities in Iran, advertently or inadvertently, overemphasize increase in the number of scientific articles (products). What's more, in Iran, the material benefits and social values of research and publication are regarded as very high as compared with teaching which is considered as inferior, or even a waste of time since it is not lucrative enough and plays a negligible role in teachers' professional development. Evaluation of teaching quality is also limited to students' ideas, assessment and attitudes. Into the bargain, no serious effort has been made to provide teachers with effective teaching skills to turn them into action researchers (Mehrmohammadi, 2013). Probably some teachers' teaching competencies are inborn and rooted in their personal traits; however, most teaching skills are acquired through instruction and training (Slavin, 2006). Lawrence Stenhouse points out that a successful teacher's most conspicuous characteristic is his/her high ability in their professional development through systematic self study, reading other teachers' works and activities, and assessing their ideas by the effective tool of action research (Hopkins, 2008). In this regard, the researchers suggest launching in-service training courses for teachers with a focus on teachers' real profession and responsibility, that is, "teaching " at different levels. Marginalization of teaching needs to be taken seriously by educational authorities and actions must be taken to create the link between research and teaching as there is a massive gap between the two activities.

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