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# Comparison of the effect of training academic honesty using two workshop and virtual training methods on the knowledge and attitude of M. S. students

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## Abstract:

**BACKGROUND:** Nowadays, one of the most important challenges of the universities and higher education centers is academic dishonesty among students. Academic dishonesty is done through cheating, deception, and plagiarism, which creates serious educational, studious, and social problems for the students and society. The purpose of this study was to compare the effect of virtual and workshop training on the knowledge and attitude of M. S. students in terms of plagiarism.

**MATERIALS AND METHODS:** This research was an applied interventional study of quasi-experimental type having pretest and posttest and the participants of this study included 90 M. S. nursing students of Medical Science University of Shiraz in the southwestern part of Iran.

**RESULTS:** The comparison of the three groups indicated that virtual and workshop training, both, developed the knowledge and attitude of students regarding plagiarism; however, the comparison between two methods did not indicate a statistically significant difference.

**CONCLUSION:** Both virtual and workshop training methods had an effect on increasing students' knowledge and attitude. Regarding the positive effect of training academic dishonesty using two workshop and virtual training methods, both can be used as efficient and effective methods in training dimensions depending on the condition and facilities to prevent and reduce plagiarism in students.

## Keywords:

Academic honesty, attitude, knowledge, training, virtual learning, workshop

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## Introduction

Observing ethical principles in the research has a vital and determinant role in producing science.<sup>[1]</sup> Nowadays, one of the main concerns of the universities and higher education centers is academic dishonesty so that one of the challenging subjects in university discussions is the issue of scientific dishonesty and plagiarism.<sup>[2-4]</sup> In recent 30 years, academic dishonesty has been one of the research topics for university studies.<sup>[5]</sup> According to the

definition, academic dishonesty is any form of dishonesty related to official university activities.<sup>[6]</sup> Unethical behaviors and dishonesty include a wide range in the classes. Some of these cases are plagiarism, lying, cheating, providing incorrect information, and not revealing the errors.<sup>[7]</sup> Universities and higher education centers have important responsibilities and duties, which help to have an honest society and educate people who consider ethical principles.<sup>[8]</sup> Academic dishonesty is not fair since it overuses others' ideas; this issue can be dangerous in terms of medical sciences

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and prevents people from reaching to the main purposes of education including educating committed and expert people and may have unpleasant results for university educations.<sup>[9]</sup> Those who tend to plagiarize are more inclined toward participating in unethical behaviors outside the university; the reason is that those individuals who are deceived to reach their purposes through any way during their education have less control on their own actions outside the university than moralist people; this issue would have a prominent effect in the society.<sup>[10]</sup> Students involved in scientific immorality can hardly gain the required skills for their future and their jobs; this issue can have irreparable problems in various levels. This causes the entrance of amateur and inexperienced people to the market, which may lead to important problems in the society.<sup>[9,11]</sup> In case plagiarism be a common and unimportant issue, it would eliminate scientific security and have essential problems in the society.<sup>[10]</sup> The results of the conducted studies in various countries have shown that academic dishonesty is a common problem in all educational levels; some of these studies are Curasi,<sup>[12]</sup> Akeley Spear and Miller,<sup>[13]</sup> and Williams and Williams.<sup>[14]</sup> The research carried out by Jereb *et al.* showed that plagiarism phenomena have increased among students due to the development of informational technologies.<sup>[15]</sup> It is clear that plagiarism exists all over the world and it is a comprehensive issue; therefore, it is sought to correctly train students and experts so that this issue can be solved or at least adjusted.<sup>[16]</sup> In the third world countries, no wide researches have been conducted in terms of the reasons behind academic dishonesty. As a result, most of the students are not familiar with plagiarism and its devastating effects. Increasing the facilities using educative software and hardware regarding the identification of kinds of plagiarism is among the main causes that shows less statistical plagiarism in the developed countries.<sup>[17]</sup> The importance of plagiarism in a certain educational level cannot be ignored.<sup>[18]</sup> Students' familiarity with academic dishonest, its complications, and prevention methods needs effective and efficient training like other subjects. Using student-centered methods can be really helpful in this regard.<sup>[19]</sup> Using workshop training is one of the mostly applicable methods for transferring information and skills.<sup>[20]</sup> Workshop training is one of the novel and active educational methods that develop knowledge and addressors' performance through providing thoughts and feedbacks as well as gaining knowledge and skills.<sup>[19]</sup> Workshop training along with group discussions leads to the interactions between the teacher and learners, which resultantly causes more learning by the students. In case there be some doubts regarding the content, it is possible to interact with the teacher and ask and answer the questions.<sup>[19,21]</sup> The results of Hamann *et al.* study indicated that workshop training presented a practical guidance in the clinical

environment.<sup>[21]</sup> On the other hand, in recent years, the educational approach has changed from traditional methods to novel ones and use has been made of facilities and electronic resources. Moreover, much emphasis has been put on using virtual methods. Electronic learning is one of the novel educational methods based on information and communication technologies, which bases human beings as the active learners and can alter all educational and learning forms in the 21<sup>st</sup> century. It also ends the challenge resulting from the social demands for education and lack of enough educational resources.<sup>[22]</sup> This novel method prevails over traditional education obstacles and provides easy and flexible access to learning. Using a virtual training content, which is adjusted with individuals' learning style, it becomes possible that learners residing in faraway places have access to education, the traveling costs and wasting time are reduced, and transferring information and skills gets easier.<sup>[23]</sup> Other advantages of virtual training include covering more learners and the repeatable nature of learning. The results of Padilha *et al.* study showed that virtual training method was an effective factor in increasing students' satisfaction and creating motivation among them.<sup>[24]</sup> Considering the educational and social problems of academic dishonesty, no preventive actions have been taken. Effective and efficient training can be an appropriate solution.<sup>[25]</sup> Each of workshop and virtual training methods has strength and weaknesses. This study aimed at comparing the effect of academic honesty using workshop and electronic training methods on the knowledge and attitude of M. S. nursing and midwifery students.

## Objectives

The objective of the study was to determine the effect of training academic honesty using two workshop and virtual training methods on the knowledge and attitude of M. S. students.

## Materials and Methods

### Design of the study

This interventional study was of a quasi-experimental type having pretest and posttest.

### Participants and sampling

Interventional training was applied from September 2019 to February 2020 accompanied with two interventional groups of virtual training and workshop training as well as a control group having pretest, posttest, and follow-up sessions after 2 months. The statistical population of this research included all M. S. students who had classes in the faculty at the time of applying intervention. Educational intervention was performed in Shiraz School of Nursing and Midwifery. Inclusion criteria included: (1) being M. S. student of

the first to the third semester and studying in the M. S. majors of nursing, midwifery, and surgery room and (2) tendency to participate in the study and the exclusion criteria included: (1) being absent at the time of administering the training program, (2) having cancelled to participate in the workshop training, (3) incompletely filling the questionnaires, and (4) having any kind of study leave, long-term absence, or canceling to continue the education while applying training interventions.

Sampling was done using census statistical method. All M. S. students having the inclusion criteria to participate in the study were invited. Among 104 students of nursery, midwifery, and surgery room, 90 individuals filled the consent form. After selecting each sample, they were placed in B, A, and C treatment groups using random number table; numbers 1–3 were attributed to the treatment A and numbers 4–6 were attributed to the treatment B and numbers 7–9 were attributed to the treatment C; the unequal 3 was replaced in each point so that the balance could be observed. Then, the researcher referred to the participants of each group and completely explained the descriptions. In Group A, students took part in the workshop of academic honesty for 4 h that was held in the faculty. In Group B, at the date of administering workshop training, the virtual training content was uploaded in the faculty's site and students participated in the virtual training workshop after entering their student number and national code. In Group C, which was the control group, no interventions were held. It has to be noted that in this study, in all three groups, the questionnaire was replied by the individual for three times: once before applying interventional trainings, the second time immediately after applying the trainings, and the last time was 2 months after the trainings. To consider the ethical points, after completing training interventions, the electronic content was accommodated to the control group, as well.

### Instruments

To collect the data, a researcher-made questionnaire was utilized, which had two parts: the first part included demographic and educational data, gender of the students, field of study, second job, residing place, the score of their B. A., job satisfaction, their interest in their studying field, and their tendency to continue their education and the second part included students' knowledge and attitude toward academic dishonesty, which included 20 items related to the subjects such as the definition of academic honesty, how to provide correct references, how to search, the rule of copy-write, and self-plagiarism. Questions number 1–10 were related to knowledge and questions 11–20 were related to the attitude. Knowledge and attitude questions were measured using 5-point Likert scale.

Regarding the questions 1, 2, 3, 5, 8, 9, 10, and 11, in case the supervisors selected completely agree item, the highest score, which was 5, would be attributed to them and if they selected completely disagree item, the least score, which was 1, would be attributed to them; other questions were scored reversely. The score of the questionnaire was from 20 (the least score) to 100 (the highest score). Content validity of the questionnaire items was 0.9 and more and the content validity index was more than 0.86. Moreover, the reliability of the questionnaire was measured using Cronbach alpha and was 0.9 for the whole questionnaire.

### Ethical considerations

Having obtained the code (IR.SUMS.REC.1398.899) from the ethical committee, the research at first explained the research purposes to the samples and after filling the consent form by the three groups, participants were assured that all their information would remain confidential. The participants were free to leave the study at any stage without any educational complications.

## Results

### According to the results of Table 1

Most of the samples were female (workshop group = 80% [ $n = 24$ ], virtual group = 76.7% [ $n = 23$ ], and control group = 76.7% [ $n = 23$ ]). Most of the students were studying nursery (workshop group = 70% [ $n = 21$ ], virtual group = 66.7% [ $n = 20$ ], and control group = 66.7% [ $n = 20$ ]). The amount of their satisfaction regarding the field of study was more in the virtual group = 70% ( $n = 21$ ) and workshop group = 70% ( $n = 21$ ), virtual group = 66.7% ( $n = 20$ ), and control group = 66.7% ( $n = 23$ ) were interested in their own field of the study. In addition, most of the students (workshop group = 80% [ $n = 24$ ], virtual group = 70% [ $n = 21$ ], and control group = 80% [ $n = 24$ ]) were inclined to continue their education.

Considering Table 1, demographic variables were statistically homogeneous at the beginning of the study, and there was no differences between their attitude and knowledge scores. This table provided a comparison of the demographic as well as educational characteristics of three groups.

### According to the findings of Table 2

Before applying intervention, there was no statistically significant difference between the mean score of knowledge in the three groups ( $P = 0.506$ ). However, in the workshop training and virtual training groups, the mean score of knowledge had increased after the intervention ( $P < 0.001$ ), although there were no increases in the knowledge score mean immediately after intervention in the control group. This issue

**Table 1: Frequency distribution of demographic variables in three workshop, virtual, and control groups**

Demographic variable	Workshop group (n=30)	Virtual group (n=30)	Control group (n=30)	P	
	Frequency (%)	Frequency (%)	Frequency (%)	knowledge	attitude
Gender					
Male	6 (20)	7 (23.3)	7 (23.3)	0.395	0.062
Female	24 (80)	23 (76.6)	23 (76.6)		
Major					
Nursery	21 (70)	20 (66.7)	20 (66.7)	0.238	0.942
Midwifery	6 (20)	7 (23.3)	6 (20)		
Surgery room	3 (10)	3 (10)	4 (13.3)		
Working while studying					
Yes	15 (50)	20 (66.7)	17 (56.7)	0.966	0.380
No	15 (50)	10 (33.3)	13 (43.3)		
Residing place					
Dormitory	14 (46.7)	17 (56.7)	15 (50)	0.570	0.375
Home	16 (53.3)	13 (43.3)	15 (50)		
Score					
14-15.99	4 (13.3)	5 (16.7)	3 (10)	0.291	0.276
16-17.99	21 (70)	17 (56.7)	23 (76.7)		
20-18	5 (16.7)	8 (26.7)	4 (13.3)		
Satisfaction regarding the major					
Really low	1 (3.3)	0 (0)	0 (0)	0.431	0.475
Low	3 (10)	1 (3.3)	4 (13.3)		
Medium	9 (30)	8 (26.7)	10 (33.3)		
High	12 (40)	16 (53.3)	11 (36.7)		
Really high	5 (16.7)	5 (16.7)	5 (16.7)		
Interested in the major					
Low	3 (10)	2 (6.7)	4 (13.3)	0.199	0.253
Medium	6 (20)	8 (26.7)	6 (20)		
High	13 (43.3)	8 (26.7)	12 (40)		
Really high	8 (26.7)	12 (40)	8 (26.7)		
Tendency toward continuing the education					
Yes	24 (80)	21 (70)	24 (80)	0.902	0.192
No	6 (20)	9 (30)	6 (20)		

**Table 2: Determining and comparing the mean score of knowledge among students in the three workshop, virtual, and control groups before, immediately after, and 2 months after training intervention**

Knowledge variable	Workshop group mean±SD	Virtual group mean±SD	Control group mean±SD	P
Before intervention	33.80±4.26	34.11±5.45	35.06±3.55	0.506
Immediately after intervention	38.00±2.88	38.23±3.66	35.03±3.16	0.000
Two months after intervention	36.833±2.62	37.10±3.41	34.40±2.59	0.001
P	0.000	0.000	0.052	

SD: Standard deviation

shows the positive effect of training whether through workshops or virtual training sessions that increases the mean score of knowledge in the students. According to the results of this study, there were no statistically significant differences between the mean score of knowledge in the virtual training and workshop groups. The mean score of knowledge in the three groups reduced 2 months after the intervention; although it had a statistically significant difference before the intervention, the effects of training interventions were positive during the time ( $P < 0.001$ ).

Table 3 shows that before the intervention, the mean score of attitude in the three groups did not have a statistically significant difference ( $P = 0.055$ ) in the virtual training group, the mean score of attitude after the training intervention was somehow more than a workshop training group; however, there was no statistically significant difference. This issue shows that the attitude level of students had improved as compared to academic honesty training. In the control group, there were no improvements in the attitude score of students ( $P = 0.452$ ). According to the results of this

**Table 3: Determining and comparing the mean score of students attitude in three workshop, virtual, and control group before, immediately after, and 2 months**

Attitude variable	Workshop group mean±SD	Virtual group mean±SD	Control group mean±SD	P
Before intervention	36.36±5.89	34.90±4.61	33.50±3.33	0.055
Immediately after intervention	38.86±4.15	37.96±2.80	33.36±3.17	0.000
Two months after intervention	37.63±3.61	36.83±3.00	33.10±3.07	0.000
P	0.000	0.000	0.452	

SD: Standard deviation

study, there were no statistically significant differences between the mean score of attitude in the virtual training and workshop groups. The mean score of attitude in the three groups had somehow reduced 2 months after the intervention; however, it was statistically significant as compared to before intervention and the effect of training interventions was positive during time ( $P < 0.001$ ).

## Discussion

This research aimed at determining the effect of academic honesty using two workshop training and virtual training methods on the knowledge and attitude of M. S. students. According to the results of this study, training interventions using workshop and virtual training methods increased the knowledge of students regarding academic dishonesty. This issue showed the positive effect of training whether through workshops or virtual trainings on increasing the mean score of students' knowledge. Other studies conducted in other countries that were in line with the results of the current research confirmed the results of this study. Teasdale *et al.* conducted a study in 2006, in which the training content of dentistry of elders was presented to 67 participated students. Finally, it was revealed that the knowledge of participated had significantly increased as compared to before intervention. Unfortunately, in this study, the comparison group was not considered to understand the effects of virtual training with traditional training.<sup>[25]</sup> The results of the current research were in line with the study of Lu *et al.*, who compared the effect of training on preventing and treating myopia through video and traditional training.<sup>[26]</sup> In the workshop group, the score of students' attitude had increased. Moreover, the mean score of attitude in the virtual group had significantly increased after the intervention, showing the improvement of the students' attitude level compared to academic honesty concept and its related issues' trainings. The results of Pahinis *et al.*'s study, which aimed at administering a blended learning for a period and its effect on various learning groups in the dentistry faculty, showed that both face-to-face and virtual training methods were successful in training dentistry students in various levels.<sup>[27]</sup> No significant differences were seen between the effect of virtual training and workshop training and both were effective to the same extent. The results of the study conducted

by Vause *et al.*, which aimed at comparing a web-based educational instrument and traditional learning for patients who asked for laboratory fertilization, showed that both the groups, after attending the related training sessions, had similar and significant developments in the knowledge and their stress level was reduced; moreover, web-based group had significantly more satisfaction than the traditional training group.<sup>[28]</sup> The shortness of students' opportunity to work with the site and designed electronic instruments were among the limitations of the difference between two studied groups of the current study. Some of the studies reported that after adding electronic content to the lesson plans of the students, there were no changes observed in the test scores of the students; however, they were resistant regarding the use of online content.<sup>[29]</sup> Devi *et al.* compared the effectiveness of the training program using movie and traditional training in nursery students who were skilled enough to do the surgery assistance and declared that training was effective in both the methods; however, the awareness score of the learners in the traditional training group was more than the training through movies.<sup>[30]</sup> Using virtual training method can be an approach toward responding to the increasing need of an educational system in the university in case the substructures and the necessary conditions are met and the correct design of educational system is considered. On the other hand, culturalizing is also among the necessities of using virtual training method in education since this kind of training allows people to regulate the training programs according to their other programs. Flexibility in education provides the opportunity for the learners through virtual training to decide when and where they can obtain the required training contents so that the training process not be contradictory with the learners' other responsibilities. In addition, the dedicated time for learning and the repeatability should be available for the learners. According to the results of this study, training academic honesty is a necessity and student-centered methods such as workshop trainings and virtual trainings can be used dependent on the conditions and facilities.

## Limitations and suggestions

It was not possible to have a long-term follow-up session to investigate the long-term effects of training interventions. It is suggested to conduct a longitudinal study regarding the long-term effects of training

academic dishonesty of the students on their educational and occupational future. This study only considered M. S. nursery students; other wide studies in the medical science faculties can make the effects of training interventions in various majors clearer.

## Conclusion

Training various kinds of plagiarism and honesty in doing a research developed knowledge and attitude of students using both workshop training and virtual training methods. Virtual training and workshop training can be utilized as beneficiary and effective methods in the educational dimensions and prevent and reduce plagiarism of the researchers and experts. Furthermore, due to the insignificant difference between virtual training and workshop training and the increasing growth of educative facilities and the existing limitation in the workshop trainings, virtual training method can be more utilized as it is cheaper and more accessible.

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## Conflicts of interest

There are no conflicts of interest.

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