Assessing a Media Production Workshop based on Kirkpatrick Evaluation Model

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Abstract

Background and Purpose: There are 3 specific reasons for education evaluation: to justify the existence and budget of the training department by showing how it contributes to the organization's objectives and goals, to decide whether to continue or discontinue training programs, and to gain information on how to improve future training programs. We aimed to assess the effectiveness a media production workshop during 2014.
Methods: In this quasi-experimental study a workshop related to producing media was evaluated among the health department staff of Shahid Beheshti University of Medical Sciences based on Kirkpatrick's model. Data were collected through DREEM questionnaire and analyzed using SPSS software, version 17.
Results: In the reaction level, the mean±SD obtained from the learner's perception of educational environment was 144.92±22.53. The mean±SD scores of learner's perception of learning, learner's perception of course teachers, learner's academic self-perception, learner's perceptions of atmosphere, and learner's social self perceptions were 29.61±4.87, 33.61±4.78, 21.84±3.71, 36.38±7.07, and 20.15±3.13, respectively.
Conclusions: In the reaction level, the correlation between the scales of the learner's perception of educational environment showed that better learning can be provided with minimal changes in each of the scales. The results of correlation between the reaction to the learning level showed that the learner's perception of teacher compared with other scales has an important role in raising awareness. Kirkpatrick evaluation framework, confirms the success of the workshop at the level of reaction and learning. Future studies using case and control groups are recommended to achieve better results.

Keywords: Kirkpatrick evaluation model, DREEM, Workshop, Media production

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Introduction

Media are communication channels that refer to anything that transfers information between the source and the sender. In addition to the concepts and context, this definition focuses on the use of technology and media (1). Such media are interesting because of being broad spectrum, powerful, and highly cost-effective for health agents (2). The media plays important roles in prevention and they are effective in implementing many of the goals of prevention. Some of their functions and positive effects include: increasing knowledge and correcting wrong beliefs, influencing attitudes and social norms, long-term behavioral change, correcting people's lifestyle, suggesting or encouraging positive and beneficial work (3). The mass media play an important role in the society, including the provision of information, entertainment,

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creation and interpretation of concepts, setting the agenda for individual and social dialogue and influencing behavior (2).

Health education is a central aspect of health care. It is vital for improving people's lives through better health. Although there are many barriers affecting effective health education, creating educational media is a possible solution (4). Health practitioners that benefited from the support of the media are political activists that mostly deal with social pathogens to individual factors. Therefore, support media used by experts in the field of health affects broader structural factors in the society (2).

Considering the importance of media in health education and health promotion, a media production workshop was held for healthcare staff at the request of Shahid Beheshti University of Medical Sciences in order to create and increase the skills of media production. Education should be routinely evaluated to justify the existence and budget of the training department by showing how it contributes to the organization's objectives and goals, to decide whether to continue or discontinue training programs, and to gain information on how to improve future training programs (5).Therefore, this study was done to evaluate the effectiveness of the mentioned workshop.

To evaluated education programs various aspects of student behavior should be judged. Such behavior is inherent in the educational system and consists of a set of skills that help the learner achieve the specified targets.

objective-oriented approach and systematic approach are widely used in the evaluation of educational programs. Kirkpatrick's model is one of the models based on the objective-oriented approach which can be held for employees (6). This model is a comprehensive, simple and practical training model in many situations. Kirkpatrick considers evaluation as a means to determine the effectiveness of an educational program (7, 8).

Kirkpatrick model has 4 levels; level 1: reaction, level 2: learning, level 3: behavior, level 4: impact (5, 9-11). In this study, we used the Kirkpatrick Evaluation Model to determine the effectiveness of the media production workshop at the first two levels.

Methods

In this quasi-experimental study, based on the needs and demands of the health education department of Shahid Beheshti University of Medical Sciences a one-day workshop called "production of digital media" was held in Spring 2014 for 13 health workers in the departments of education and health promotion, mental health, drugs, population, family and nutrition, schools health of youth. The workshop program included the production of educational clips using Ulead Video Studio 11 and the production of print media using Microsoft Office Publisher 2007. The workshop lecturer was an expert in the field of health education and health promotion. The methods used in the workshop included lectures, Individual work and teamwork, and FAQ and a time was allocated for entertainmen and rest.

The DREEM questionnaire was used to determine the level of reaction. The DREEM questionnaire contains 50 questions with five options numbered on a 0 to 4 Likert scale. This questionnaire is used for the quantitative measurement of educational environments. It was developed in 1977 by Dr. Sue Roff at the University of Dundee, Scotland, known as the Dundee Ready Educational Environment Measure-DREEM.

The main parameters of DREEM are as follows: being scientific, being practical, being aware, being social and being appropriate and desirable (12). The DREEM model was validated in Iran by Langroodi et al and had good validity (Cronbach's alpha=0.933). The mean scores obtained in the mentioned study was 127.53, with a KMO index of 0.910. Ultimately, considering the sufficient reliability and validity of the Persian version of the questionnaire, no items were deleted (13).

12 questions were related to the learner's perception of learning, 11 questions to the learner's perception of course teachers, 8 questions to the learner's academic self-perception, 12 questions related to the learner's perceptions of atmosphere, 7 questions to the learner's social self-perception. The total score of the questionnaire ranged from 0-200, and sores are classified into four groups; very poor (0-50), plenty of problems (51-100), more positive than negative (101-150), and excellent (151-200).

Based on the learner's perception of learning, the scores (range: 0-48) were classified as follows: very poor (0-12), teaching is viewed negatively (13-24), a more positive perception (25-36), and teaching is highly thought of (37-48). Based on the learner's perception of course teachers (range 0-44), the scores were classified into four groups as follows: abysmal (0-11), in need of some retraining (12-22), moving in the right direction (23-33), and model course teacher (34-44). Based on the learner's academic self-perception (range 0-32), the scores were classified into four groups as follows: feelings of total failure (0-8), many negative aspects (9-16), feeling more on the positive side (17-24), and confident (25-32). Based on the learner's perceptions of atmosphere (range 0-48), the scores were classified into four groups as follows: a terrible environment (0-12), there are many issues which need changing (13-24), a more positive attitude (25-36), and a good feeling overall (37-48). Based on the learner's social self-perceptions (range 0-28), the scores were classified into four groups as follows: miserable (0-7), not a nice place (8-14), not too bad (15-21), and very good socially (22-28).

To determine the level of learning, a questionnaire was prepared to evaluate the knowledge of health professionals about using the software that was completed before and immediately after the workshop by the participants. The questionnaire consists of seven questions about the learners' awareness about the use of software applications and familiarity with the work environment of the software. The questionnaire was confirmed by related experts. Data from the completed questionnaires were analyzed using SPSS software, version 17 and using descriptive statistics (mean and standard deviation) and analytical statistics (Pearson's correlation and Wilcoxon's tests). Participation in the study was voluntary and informed consent was obtained from the participants.

Results

In this study, 13 healthcare staff including 11 (84.6%) and 2 men (15.4%) participated in a one-day workshop called "production of digital media". 61.5% (n=8) of them had a bachelor's degree, 15.4% (n=2) had master's degree and 23.1% (n=3) of them had doctoral degree. The mean±SD score of educational environment was 144.92 ±22.53 (95%) and scores ranged from 100-175.

The mean±SD scores of learner's perception of learning, learner's perception of course teachers, learner's academic self-perception, learner's perceptions of atmosphere, and learner's social self perceptions were 29.61±4.87 (range: 11-35), 33.61±4.78 (range: 23-39), 21.84±3.71 (range: 14-27), 36.38±7.07(range: 24-47), and 20.15±3.13 (range: 16-26), respectively (table 1).

The results of the questionnaire with respect to the learning environment were as follows: 7.7% (n=1) reported that learning environment has much Problems, 46.2% (n=6) assessed that learning environment is positive and 46.2% (n=6) excellent. In the scale of the learner's perception of learning, 15.4% (n=2) of the learners had a more positive perception of teaching and 84.6% (n=11) understand that teaching is highly thought of. In the scale of the learner's perception of course teachers, 61.5% (n=8) of the learners reported that the teachers were moving in the right direction and 38.5% (n=5) understand that teacher has own teaching method.

In the scale of the learner's academic self-perception, 15.4% (n=2) of the learners

Table 1. Descriptive statistics about the scales of the DREEM questionnaire

Scale	Frequency	Minimum grade	Maximum grade	Mean	Std. Deviation
Learner's Perception of Learning	13	18	35	29.61	4.87
Learner's Perception of Course teachers	13	23	39	33.61	4.78
Learner's Academic Self-Perception	13	14	27	21.84	3.71
Learner's Perceptions of Atmosphere	13	24	47	36.38	7.077
Learner's Social Self Perceptions	13	16	26	20.15	3.13
Learner's Perception of educational environment	13	100	175	144.92	22.53

Table 2. Descriptive statistics of the questionnaire scores in the four categories

Groups / Scales	First	Second	Third	Fourth
	F (%)	F (%)	F (%)	F (%)
Learner's Perception of Learning	0 (0)	0 (0)	2 (15.4)	11 (84.6)
Learner's Perception of Course teachers	0 (0)	0 (0)	8 (61.5)	5 (38.5)
Learner's Academic Self-Perception	0 (0)	2 (15.4)	7(53.8)	4 (30.8)
Learner's Perceptions of Atmosphere	0 (0)	1 (7.7)	6 (46.2)	6 (46.2)
Learner's Social Self Perceptions	0 (0)	0 (0)	9 (69.2)	4 (30.8)
Learner's Perception of educational environment	0 (0)	1 (7.7)	6 (46.2)	6 (46.2)

Table 3. Comparison of the mean knowledge score of the participants before and after the workshop

	Before workshop	Immediately After workshop	
Mean	1.076	5.76	
Std. Division	1.037	1.09	P=0. 001

understood many negative aspects of academic self-perception, 53.7% (n=7) had felt more on the positive side and 53.7% (n=7) had confided to academic self-perception. In the scale of the learner's perceptions of atmosphere, 7.7% (n=1) of the learners reported that there are many issues which need changing, 46.2% (n=6) had a more positive attitude and 46.2% (n=6) had a good overall feeling. In the scale of the learner's social self-perceptions, 69.2% (n=9) of the learners reported that their social condition is not too bad and 30.8% (n=4) thought of their self social-perception to be very good (Table 2).

Based on questionnaires on the participants' knowledge of software, the mean±SD of the response to the questions before the exam was 1.07±1.03 (range: 0-7) and a minimum score of 0 and a maximum score of 3 was reported. But after the workshop, the mean±SD of the response to the questions was 5.77 ±1.1 (range:0-7) and a minimum score of 0 and a maximum score of 7 was reported (P=0.001, Wilcoxon's test, table 3).

The correlation between knowledge and educational environmental factors showed that there was a significant relationship between knowledge and learner's perception of course teachers (P=0.041).

With respect to educational environment, we found a significant relationship between the learner's perceptions of atmosphere with the learner's perception of learning (P=0.029), learner's perception of course teachers (P=0. 002), and learner's academic self-perception (P=0.001). There was a significant relationship between the learner's social self-perceptions with the learner's perception of course teachers (P=0.000), learner's academic self-perception (P=0. 003), and the learner's perceptions of atmosphere (P=0.015). There was a significant relationship between the learner's perception, of course teachers and learner's academic self-perception (P=0.061, Table 4).

Table 4. The correlation between knowledge (the learning level) and DREEM questionnaire scales (the reaction level)

	Knowledge		Learner's Perception of educational environment		Learner's Perception of Learning		Learner's Perception of Learning		Learner's Perception of Learning		Learner's Perception of Learning		Learner's Perception of Learning	
	P	r	p	r	p	r	p	r	p	r	p	r	p	r
Knowledge														
Learner's Perception of educational environment	0.282	0.323												
Learner's Perception of Learning	0.416	0.274	0.29	0.604*										
Learner's Perception of Course teachers	0.041	0.573*	0.002	0.778**	0.26	0.337								
Learner's Academic Self-Perception	0.954	-0.18	0.001	0.787**	0.153	0.421	0.061	0.533						
Learner's Perceptions of Atmosphere	0.282	0.323	0.000	1**	0.029	0.604*	0.002	0.778*	0.001	0.787*				
Learner's Social Self Perceptions	0.123	0.450	0.015	0.656*	0.347	0.284	0.000	0.834**	0.03	0.61*	0.015	0.656*		

*. Correlation is significant at the 0.05 level
**. Correlation is significant at the 0.01 level

Discussion

The effectiveness of the workshop with respect to reaction was assessed using the DREEM questionnaire. We found that the mean±SD score of the DREEM scale was 144.92±22.53 and in a similar study, the rate was 121.01±14.89 (14). (The maximum score obtained was 175 in our study,. The maximum score reported in other studies was 139 (n=206) (15], 109 (n=55) (16), 152.13 (n= 88) (17], 151.74 (n=15) (18), 157.9 (n=108) (19] and 148.1 (n=239) (20). Thus, the mean of the present study was significantly higher compared with other studies. In this study, half of the participants in the workshop reported that the learning environment was more positive than negative and the other half reported it to be excellent. In another study half of the participants reported that the learning environment was very poor and another half reported it was positive than negative (17).

In a study that was conducted to evaluate the effectiveness of training courses for nurses with the DC Shock Device based on Kirkpatrick's model, the learners had a positive reaction to training (21). Another study on the first level of Kirkpatrick's model showed that students on a short-term training courses were satisfied (22). Hojati also found the training had desirable authority and was effective (23). Mohan et al in a study found that most of the students in the reaction level was fully satisfied during the training period (24).

With regard to the overall score, the attitudes of medical healthcare workers in the learning environment (the reaction level) were positive and excellent; despite the fact that these scores are higher in some studies (16, 17). In this study, the mean±SD of the learner's perception of Learning was 29.61±4.87. Other studies have reported rates such as 32.36 ±4.41 (14), 33.5 ±4.1 (18), 30.59 ±6.38 (20), 27.1 ±4.39 (16), and 28.7 ±6.2 (19).

In this study, the mean±SD of the learner's perception of course teachers was 33.61±4.78 and in some studies, the rate was 28.12±4.51 (14), 26.49±3.86 (16) and 30.3±4.7 (20) which is less than our study. This increase could be attributed to the new and attractive subject, teacher competence in the field of health, having expertise in the related issue and having the necessary experience. Also, the mean±SD of the learner's academic self-perception was 21.84±3.71 and in some studies, the rate was 19.78±3.39 (14), 17.92±3.532 (16) and 18.57±4.98 (20), and 22.3±4.1 (19).

The mean±SD of the learner's perceptions of atmosphere was 36.38±7.077 and in some studies, the rate was 25.89±5.83 (14), 22.29±5.49 (16), 30.2±6.4 (19) and 31.33±6.02 (20). Also, the mean±SD of the learner's social self perceptions was 20.15±3.13 in our study. In other studies the rate was 14.86±3.31 (14), 14.84±2.28 (16), 15.9±4 (19) and 17.55±3.95 (20) which was less than out study.

In this study, a score was calculated for each subscale in the four groups. With respect to the scale of learner's perception of learning, more than half of the employees knew that teaching was highly thought of. In another study, the learners had a positive perception of teaching in the scale of learner's perception of learning (16). With respect to the learner's perception of the course teachers, more than half of the employees reported that the teacher was moving in the right direction and similar results were obtained in another study (16). With respect to the learner's academic self-perception half of the employees felt more on the positive side and similar results were obtained in another study (16). Regarding the learner's perceptions of atmosphere half of the employees had a more positive attitude and the other half had a good overall feeling. In another study, learners in a study reported that there are many issues that need to be changed (16). On the scale of the learner's social self-perceptions more than half of the employees reported that their social condition is not too bad and similar results were obtained in another study (16). Based on the DREEM questionnaire, the only reported total scores of questionnaire in four groups were unfavorable, semi-favorable, favorable or very favorable (17). We found no other study to compare with our results that had compared each of the four subscales.

The result of the evaluation workshop in the section of learners, learning (second level of Kirkpatrick's model), showed that a significant effect on increasing staff knowledge. The results of the learning in this study are consistent with several other studies (21, 25-27). For example, in another related study in Yazd, Mazloumy concluded that such workshops have a significant impact on increasing participants' knowledge (25). Morshedi achieved similar results in a study done on the effectiveness of special education programs in education and training of police Management studies on police training (27).

In the first level, using standard tools such as DREEM can be a valuable help in the process and strategy of change in education. In addition to intrinsic motivation, factors such

as perceptions of student learning, learning environment, teachers and social conditions can be effective in improving the quality of learning. The correlation between the scales suggests that with little change in any of the scales better learning can be provided.

The correlation between the reaction level with the learning level showed that learner's perception of Course teachers compared with other factors plays an important role in increasing knowledge. In most of the studies that used the DREEM, only the mean and standard deviation of each of the questions were measured, but we measured them for each of the scales of the tool (which was classified into four groups) and the correlation between them to make better decisions in the field of educational environment and training programs in order to improve its effectiveness. This is one of the strengths of this study.

One of the limitations of this study was the small sample size because only invited students participated in the workshop and researchers had no role in determining the number of participants. Also, according to the need for time to study the behavior and results in this study, there was no possibility to measure this level for researchers. Researchers measured only knowledge in the level of learning, because due to their lack of skills in the use of this software by the staff, the workshop was requested, therefore it was impossible to measure skills. Other limitations were self-reported data that there is the possibility of carelessness in response to questions.

It is recommended to do similar case-control studies in the two groups to achieve better results and also study other levels Kirkpatrick's model (the behavior and results).

Conclusion

In the reaction level, the correlation between the scales of the learner's perception of educational environment showed that better learning can be provided with minimal changes in each of the scales. The learner's perception of teacher has an important role in raising awareness. Kirkpatrick evaluation framework, confirms the success of the workshop at the level of reaction and learning..

Conflict of Interest

The author declares no conflict of interest.

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References

1. Naz AA, Akbar RA. Use of media for effective instruction its importance: some consideration. Journal of Elementary Education. 2010;18(1-2):35-40.
2. Saffari M. Health Communication, ed. 1. 2011, Tehran: Asar Sobhan. 182. (in Persian).
3. Asadi A. Digital Media and Health, ed. 1. 2012, Tehran: Asar Sobhan. 148. (in Persian).
4. Yoshida I. Evaluating educational media using traditional folk songs ('lam') in Laos: a health message combined with oral tradition. Health promotion international. 2012;27(1):52-62.
5. Kirkpatrick DL, Kirkpatrick JD. Evaluating Training Programs: The Four Levels ed. 3. 2008, San Francisco, California: Berrett-Koehler Publishers. 570.
6. Abbasian AH. Effectiveness of educational courses. Tadbir. 2006;170:52-5. (Article in Persian)
7. Kirkpatrick DL. Techniques for evaluating training. Training & development Journal. 1979;33(6):78-92.
8. Kirkpatrick DL. Evaluating training programs: a collection of articles from the Journal of the American Society for Training and Development. 1975: American Society for Training and Development.
9. Fitpatrick J, Sanders J, Worthen B. Program evaluation: Alternative approaches and practical guidelines. 3 ed., ed. 3. 2004, Longman: Boston. 530.
10.Kirkpatrick DL. Techniques for evaluating training programs. Classic writings on instructional technology. 1996;1(192):119.

11.Kirkpatrick D. Great ideas revisited. Training and Development. 1996;50(1):54-9.
12.Roff S. A global diagnostic tool for measuring educational environment: comparing Nigeria and Nepal. Medical teacher. 2001;23(4):378-82.
13.Fallahkheiry-Langroudi E. Validation of the Persian version of the Dundee Ready Educational Environment Measure (DREEM). Reseach in medical education. 2013;4(2):24-33. (Article in Persian)
14.Sajid F, Rehman A, Fatima S. Perceptions of Students of The Learning Environment Studying An Integrated Medical Curriculum. Journal of Surgery Pakistan (International). 2013;18:2.
15.Varma R, Tiyagi E, Gupta JK. Determining the quality of educational climate across multiple undergraduate teaching sites using the DREEM inventory. BMC medical education. 2005;5(1):1-4.
16.Hettiarachchi M, Chandana N. Evaluation of educational environment of Nursing Undergraduates. Galle Medical Journal. 2012;17(2):19-25.
17.Azizi F. Attitudes of Pharmacy Students to Educational Conditions in Mazandaran University of Medical Sciences. Journal of Mazandaran University of Medical Sciences (JMUMS). 2013;22(1):248-53. (Article in Persian)
18.Habibzadeh H, Kazemi N, Mohamadpour Y. The effect of the learning model based on portfolio in nersing students' perception from the clinical learning environment. Journal of Nursing and Midwifery uromia University of Medical Sciences. 2013;11(1):14-21. (Article in Persian)
19.Riquelme A. Measuring students' perceptions of the educational climate of the new curriculum at the pontificia universidad catσlica de chile: Performance of the spanish translation of the Dundee Ready Education Environment Measure (DREEM). Education for health. 2009;22(1):112.
20.Hammond SM. A psychometric appraisal of the DREEM. BMC medical education. 2012;12(1):2.
21.Pourjahromi ZN. The Effectiveness of Training Courses on "How to Work with DC Shock Device" for Nurses, Based on Kirkpatrick Model. Iranian Journal of Medical Education. 2012;8(11):896-902. (Article in Persian)
22.Tavkoli S. Assessment of student responses public librarians teach short courses Astan Quds Razavi: The first level of Kirkpatrick model. Electronic Journal of museums and libraries and documentation centers Razavi. 2010;1(4):1-14. (Article in Persian)
23.Hojjati H. Assessing the effectiveness of training outcome based on Kirkpatrick model: case study Quarterly Journal of Nursing Management. 2013;2(3):35-42. (Article in Persian)
24.Mohan DR, Prasad MV, Kumar KS. Impact of training on bio medical waste management–A study and analysis. EXCEL International Journal of Multidisciplinary Management Studies. 2012.2(6):69-80.
25.Mazloumy S. Effectiveness of "health promotion evaluation" workshop using kirkpatrick model. Journal of medical education and development. 2014;8(4):11-19. (Article in Persian)
26.Farnia MA, Maleki-Avarsin S, Farshbafjour V. Evaluate the effectiveness of training courses offered to members of agricultural and non-agricultural cooperatives in East Azerbaijan province using Patrick Creek. quarterly Journal of Taavon and Keshavarzi. 2013;1(4):63-83. (Article in Persian)
27.Morshedi M. Effectiveness of special education programs in education and training of police Management studies on police training. 2014;2(6):21-67. (Article in Persian)