

The Effects of Educational Planning on Learning of Occupational Health Students

Seydeh Negar Assadi*
Health Sciences Research
Center, Department of
Occupational Health
Engineering, School of
Health, Mashhad University
of Medical Sciences,
Mashhad, IRAN

* School of health
Daneshgah Street,
Mashhad,
IRAN
Tel: +98 5138544643
Fax: +98 5138544643
Email: assadin@mums.ac.ir
Received: September 1,
2014
Accepted: November 28,
2014

Background: Presentation of course plan were advised but presentations of lesson plans were useful too. These items can introduce the course and lessons of each session to students. The objective of this study was to determine the effects of educational planning on learning of occupational diseases.

Methods: This study was a semi experimental study which was conducted by using the curriculum of ministry of health. Occupational disease course were taught with the presentation of course plan and lesson plans for group A while only course plan was presented for group B ,then students' grades and data were analyzed by SPSS 11.5, mean, standard deviation, t-test with $P < 0.05$ were calculated.

Results: The mean grade of occupational diseases in group A was 17.24 ± 0.01 and in group B was 16.64 ± 0.001 with $t = 60$ and $P < 0.001$ had significant differences. The specific lessons such as occupational cancers, occupational renal disorders and pneumoconiosis were promoted and its mean grades were more in group A than B.

Conclusion: According to the grades, educational planning may be useful for learning.

Keywords: Educational planning, Course plan, Lesson plan, Occupational diseases, Occupational health

تأثیر البرمجه التعليميه على مستوى التعلم عند طلاب كليه الصحه الحرفيه

المقدمه و الهدف: هناك حث على اعطاء مخطط كامل في براهه كل فصل دراسي. انن اذا اعطي كل من الاساتذ مخطط لكل حصه دراسيه قبل البره بالحصه يكون قد ساعد الطلبة على الإطلاع على الرئيكليه العامه لتلك المحاضره. الهدف الاساسي هو تعيين تأثير البرمجه التعليميه على مستوى تعلم ماده الامراض المرتبطه بالعمل.

الطوب الدراسيه: تم استخدام الكوريكولوم المقرر من قبل وزاره الصحه للإسلوب الدوله و المدرس في هذه الدراسه النصف تجربيه. و تم اختيار ماده الامراض المرتبطه بالعمل كان هناك فريقان الف و ب. تم اعطاء اسلوب الدوله و أيضا اسلوب كل محاضره في براهتها و تم الاكتفاء في اعطاء اسلوب الدوله في براهه الدوله فقط دون اعطاء اسلوب و مخطط في براهه كل محاضره. تم مقارنة علامات الفريقين في برنامج SPSS 11.5 مع استعمال T-test و السطح ذومعنى اقل من 0.05 .

النتائج: العلامه الكليه لماده الامراض المرتبطه بالعمل في الفريو (الف) كانت 17.24 ± 0.01 و في الفريو (ب) 16.64 ± 0.001 مع $t = 60$ و $P < 0.001$ ذو اختلاف ذو قيمه . على وجه خاص كانت علامات المواد التاليه: سرطانات العمل. الخلل الكلوي المرتبط بالعمل و البنوموكونيوزيس كان في الفريو (الف) اعلى ($P < 0.05$).

الإستنتاج: نظرا الى العلامات التي تم الحصول عليها . البرمجه التعليميه مفيده جدا في تعلم درس الامراض المرتبطه بالعمل .

الكلمات الرئسيه: البرمجه التعليميه : مخطط الفصل . اوالدوره . الامراض المرتبطه بالعمل . الصحه الحرفيه .

تأثير برنامه ریزی آموزشی بر یادگیری دانشجویان بهداشت حرفه ای

مقدمه و هدف: ارائه طرح دوره در ابتدای نیمسال تحصیلی همواره توصیه شده است حال اگر طرح درس هر جلسه نیز توسط استاد درس ارائه شود دانشجویان با اهداف و به طور کلی ساختار جلسه کاملاً آشنا می شود. هدف اصلی تعیین تاثیر برنامه ریزی آموزشی بر یادگیری درس بیماری های شغلی است.

روش مطالعه: با استفاده از یک مطالعه نیمه تجربی با استفاده از کوریکولوم مصوب وزارت محترم بهداشت طرح دوره و طرح درس ها تدوین شد درس بیماری های شغلی به طور خاص برای مقایسه در نظر گرفته شد . برای گروه الف طرح دوره و سپس برای هر جلسه طرح درس ارائه شد و برای گروه ب طرح دوره در ابتدای نیمسال ارائه گردید. نمرات دانشجویان هر دو گروه جهت مقایسه در نرم افزار SPSS 11.5 با استفاده از t-test و سطح معنی داری کمتر از 0.05 مورد ارزیابی قرار گرفت.

نتایج: نمره کل درس بیماری های شغلی در گروه الف 17.24 ± 0.01 ، در گروه ب متوسط نمره 16.64 ± 0.001 با $t = 60$ و $P < 0.001$ اختلاف معنی دار بدست آمد. به طور اختصاصی نمرات دروس سرطان های شغلی ، اختلالات کلیوی شغلی و پنوموکونیوزیس نیز در گروه الف به طرز معنی داری بیشتر بوده است ($P < 0.05$).

نتیجه گیری: بر اساس نمرات بدست آمده برنامه ریزی آموزشی می تواند برای یادگیری بهتر بیماری های شغلی مفید واقع شود.

کلمات کلیدی: برنامه ریزی آموزشی ، طرح دوره ، طرح درس ، بیماری های شغلی ، بهداشت حرفه ای

خاص تعليمی منصوبه بندی کا کلاس میں طلباء کے تعليمی عمل پر مفيد اثر۔

بيک گراونڈ: تعليمی سال کے آدھے حصے پر مشتمل دروس کا خاکہ پیش کیے جانے پر ہميشه تاكيد کی جاتی ہے۔ اسی طرح اگر ہر کلاس میں پڑھائے جانے والے درس کا خاکہ پیش کیا جائے تو یہ کلاس کے لئے نہایت مفيد واقع ہوسکتا ہے۔ اس تحقيق کا هدف پروفیشنل بیماریوں کے نصاب پر اس طرح کے تعليمی پروگرام کے اثرات کا جائزہ لینا ہے۔

روش: یہ ایک نیم تجربی تحقيق ہے۔ اس میں وزارت صحت کے منظور شدہ نصاب کو مد نظر رکھا گیا ہے۔ پروفیشنل بیماریوں کے موضوع کو خاص طور سے اس تحقيق کے لئے چنا گیا ہے۔ اس تحقيق میں گروپ الف کو ہر ٹرم اور ہر درس سے پہلے دروس کا خاکہ بتایا گیا اور گروپ ب کو صرف سال کے نصف نصاب کا خاکہ پیش کیا گیا۔ دونوں گروپوں کے نمبروں کا تجزیہ ایس پی ایس ایس گیارہ اعشاریہ پانچ اور ٹی ٹسٹ سے کیا گیا۔

نتیجے: اس تحقيق سے گروہ الف اور گروہ ب کے درمیان کافی اختلاف پایا گیا ہے، گروہ الف میں پروفیشنل کینسر، پروفیشنل رینل ڈس آرڈرز، اور دیگر بیماریوں میں کافی اختلاف پایا گیا ہے۔

سفارشات: اس تحقيق سے پتہ چلتا ہے کہ خاص تعليمی منصوبہ بندی پروفیشنل بیماریوں کے نصاب کو بہتر طرح سے پڑھنے میں مدد گار ثابت ہوسکتی ہے۔

کلیدی الفاظ: خاص تعليمی منصوبہ بندی، پروفیشنل بیماریاں۔

INTRODUCTION

Each educational course and session have a main goal and some special objectives that must be written in a plan. (1-4) It is named course plan and lesson plan. Course plan is a plan for one or more units of special course and has main goal, special objectives, program, educational methods, helping tools, task, students' assessment and references (5,6). Lesson plan is a plan for one session. (7, 8) Teachers must use curriculum for writing the educational course plans but they can choose the new methods for teaching and assessment. According to the curriculum occupational health field has some specific courses such as occupational diseases, learning of this course is important because this field must be prevented from occupational diseases in industries, farms, factories, mines and offices. (9,10)

Curriculum must be written according to community based education that responsible social needs (11, 12), teachers should pay attention to prevalence of community diseases and they can change the title of lesson up to twenty percents. (13,14) If the educational plans are introduced to the students, they will be prepared for better learning.

The written plans must be implemented correctly and revised after the term, percent or grade of implementation is useful for assessment of plans. Each item of plans should be assessed by students and teachers.

Special objectives in the plans are divided in three groups; knowledge, attitude and practice. Verbs of sentences must be accountable that could be assessed.

New educational methods such as; problem solving or problem based learning (6) and evidence based education should be used and written in the special items

"Educational methods". Assessment methods are divided to summative and formative. Some studies showed the effect of special items of courses such as types of objectives, accountability of program and kinds of assessment.

Strasser R. et al demonstrated the transforming health professional education through social accountability, (15) for this reason; programmers should have a related educational plan that could be effective.

In the study of Todres M. et al, the factors that can influence the students performance (16) and in another study from Artino A.R. were introduced the effect of achievement emotions on better learning and performance (17). We know the objectives of courses should be different and cover our main aim.

Vleuten C.P.M. et al demonstrated that programmatic assessment fit for educational purpose. (18)

In all of these studies researchers were emphasized on having the educational plans for better teaching. The plans must be included the methods for promotion of knowledge, emotion or attitude and practice. In this study, the author tries to find the effectiveness of course plan and lesson plans of occupational diseases on occupational students' learning.

The objective was the determination the effects of educational planning on students' learning of occupational diseases.

METHODS

This study was performed as a semi experimental study from 1389 - 1392 on occupational health students in school of health in Mashhad. From the consensus all of the occupational health students were participated. They were from two entry exam of university. Group A included 25 students and group B 25 too. Course plans and lesson plans were written according to curriculum of the Ministry of Health.

Occupational diseases course was taught with presentation of course plan in the first session and lesson plans in related sessions. At each session and at the end of classes, students were assessed in each group with same educational tests.

In occupational diseases chapters there were definitions, pneumoconiosis, studies dermatitis, low back pain; noise induced hearing loss, occupational cancer, occupational kidney disorders, occupational liver disorders, and occupational heart disorders.

In assessment of course plans and lesson plans there were main goal, specific goals, program, educational methods, helping tool, tasks, student's assessment and references. Researcher was wanted to assess implementation of course plans and lesson plans too and found the differences between occupational diseases course and other courses. In this study implementation had 0 to 100 grades from the student's questionnaires.

Quizzes and tests of the two groups were at the same level and prepared by teachers' opinions for correction and validity and there had been a pilot study with correlation of 0.88 for assigning the reliability in a sample of occupational health students.

The inclusion criterion was the occupational health students in two entrance year of 1389 and 1390 and exclusion criteria were studying another field or having entered university in other years.

Data were gathered in SPSS 11.5 and analyzed for calculation of means, standard deviation, t-test and $P < 0.05$.

For research ethics; the researcher got oral satisfaction from participants and told that cumulative data were used and the names of the students were kept confidential.

RESULTS

The mean grade of occupational diseases in group A (course plan and lesson plans) was 17.24 ± 0.01 and in group B (course plan) was 16.64 ± 0.001 with $t = 60$ and P

Table 1 shows the comparison of grades in occupational diseases chapters between the two groups.

In specific lessons of occupational diseases such as ; occupational cancers ($P = 0.001$), occupational renal disorders ($P = 0.001$) and pneumoconiosis ($P = 0.043$) there was a significant difference between two groups with P

In assessment of implementation of course plans and lesson plans; main goal, specific goals, program, educational methods, helping tools, tasks, student assessment, references were assessed. Occupational diseases course plans and lesson plans were implemented in the good situation only educational methods had significant difference ($P = 0.025$)

Table 1. The comparison of grades in occupational diseases chapters between the two groups. (P<0.05)

Number	Subject	Grade of Occupational Diseases in group A	Grade of Occupational Diseases in group B	t-test	P value
1	Definitions	2.00±0	2.00±0	-	-
2	Pneumoconiosis	1.98±0.10	1.86±0.27	2.078	0.043
3	Dermatitis	1.60±0.76	1.46±0.53	0.749	0.457
4	Low back pain	2.00±0	2.00±0	-	-
5	Noise induced hearing loss	1.76±0.66	1.96±0.13	-1.476	0.147
6	Occupational cancer	2.00±0	1.80±0.28	3.464	0.001
7	Occupational kidney disorders	1.96±0.20	1.68±0.31	3.720	0.001
8	Occupational liver disorders	2.00±0	1.96±0.13	1.445	0.155
9	Occupational heart disorders	1.94±0.21	1.92±0.18	0.346	0.731

Table 2. The comparison of implementation of course plans and lesson plans of occupational diseases course and others. (P<0.05)

Number	Variable	Mean (SD) Occupational Diseases Plans	Mean (SD) Others Plans	t-test	P value
1	Main Goal	76 (24.08)	87.04 (16.61)	1.347	0.184
2	Specific Goals	74 (27.01)	86.25 (17.82)	1.382	0.173
3	Program	84 (20.73)	87.59 (17.15)	0.435	0.666
4	Educational Methods	66 (15.16)	87.04 (19.56)	2.319	0.025
5	Helping Tools	64 (28.80)	81.93 (25.77)	1.459	0.151
6	Tasks	64 (25.07)	82.50 (22.47)	1.646	0.106
7	Student Assessment	77 (25.39)	84.77 (23.62)	0.693	0.492
8	References	86 (20.73)	90.18 (16.94)	0.512	0.611

Table 2 shows the comparison of implementation of course plans and lesson plans of occupational diseases course and other courses.

DISCUSSION

According to the results; the mean grade was the best in group A may be related to presentation of course plan and lesson plans in each session.

It seems that students in group A were better understood the lessons than group B may be because of their knowledge about the aim and objectives of each session and they were encouraged to better study and learning than group B. Group A purposely studied the lessons while the group B did not know the exact objectives of each session. Because of the same students' strength and the same teacher for this course the researcher was concluded that the occupational diseases learning levels were promoted in teaching with presentation of lesson plans in each session for many chapters but for some of them were more important such as; occupational cancer, occupational renal disorders and pneumoconiosis.

In specific sessions of occupational diseases: the grades of definition sessions were the same it means that lesson plan

had no effect on its learning and for low back pain, this session were repeated in human factors engineering course and in this case it was not very important.

In group A, the other sessions such as; dermatitis, occupational liver disorders and occupational heart disorders were more than group B but there were not significant difference. In group B, the mean grade of noise induced hearing loss was more than group A but it was not significant.

Health ministry' curriculums and educational standards can be helpful in teaching, learning and writing the course plans and lesson plans.

Simon H. showed the usefulness of educational programs in medical education (4). Assadi S.N. demonstrated the same results in another study (19).

Professors can use educational programs, course plans and lesson plans for have a better start of the class and students' preparation but they should write plans and share their teaching experiences with other coworkers and professors.

In this study the usefulness of course plans and lesson plans were shown.

The implementation, course plan and lesson plans of occupational diseases course, had good grades and in comparison with other course plans and lesson plans, only

for educational methods the grade was lowest (66.00 ± 15.16). Menin S. found out that community based medical education need a fit educational course (11) that need course plans too. Also Callis A.N. showed the application of basic sciences to clinical problems in another study (6) were demonstrated the effectiveness of perfect educational course plans for better learnin. Occupational health has specific courses such as occupational diseases. This course has some sessions such as definitions, pneumoconiosis, low back pain, noise induced hearing loss, occupational kidney disorders, occupational liver disorders, dermatitis, occupational cancer and occupational heart disorders. According to the prevalence of occupational diseases these title may be changed.(20,21) This study had some limitations; the number of students with two entrance years to university was low. Another

study is recommended with more students.

This study recommends that lesson plans must be written and presented at the beginning of the classes too. Course plans and lesson plans should be assessed regularly. According to the grades, educational planning may be useful for learning.

ACKNOWLEDGEMENT

The author would like to express his thanks from Mashhad University of Medical Sciences for all the supports.

Research committee approval and financial support: This article is extracted from research project number 911043, approved and financially supported by Mashhad University of Medical Sciences.

Conflict of Interest: Author declares no conflict of interest.

REFERENCES

1. Malakan Rad E, Einollahi B, Hosseini SJ, Momtaz Manesh N, Clinical teaching and assessment what every clinical teacher must know , Tohfeh with Boshra , 2006 :1: 1-40
2. Course design, Fundamental of assessment in medical education , FAME, 2012 [Accessed 2012 Apr 5] online: [[http:// famecourse.org](http://famecourse.org)]
3. Medical education program, the university of Iowa, 2012 [Accessed 2012 Apr 5] Available from: <http:// registrar. ulowa.edu>
4. Simon H, Principles of teaching and learning, med. fsu . edu , 2011 [Accessed 2009 Dec 14] Available from: [http:// www. med. fsu . edu / education / faculty development / principles _ teach _ learn . asp](http:// www.med. fsu . edu / education / faculty development / principles _ teach _ learn . asp)
5. Lesson plan and curriculum design , Degree directory, 2012 [Accessed 2012 Apr 5] Available from: <http:// www. degreeindex.org>
6. Callis A.N, McCann A.L, Schneiderman E.D, Babler W.J, Lacy E.S, Hale D.S, Application of basic sciences to clinical problems: traditional vs hybrid problem based learning, Journal of dental education, educational methodologies, 2010; 10: 1113-1124
7. Planning a course, 2013 [Accessed 2013 Apr 1] Available from: <http:// www. Teachingcenter. wutl.edu>
8. Course planning, 2013 [Accessed 2013 Apr 1] Available from: <http:// www. advising.unc.edu>
9. Sarfasledoros, deputy ministry for education , secretariat of the council for education in medical basic sciences , public health and post graduate, 2012 [Accessed 2012 Jun 1] Available from: http:// mbs . behdasht . gov.ir / uploads/ 176_315_sarfasledoros_ kardaniHerfee.pdf
10. Barnamehdoros, deputy ministry for education , secretariat of the council for education in medical basic sciences , public health and post graduate, 2012 [Accessed 2012 Jun 3] Available from: http:// mbs . behdasht . gov.ir / uploads/ 176_315_ barnamehdoros_ kardaniHerfee.pdf
11. Menin S, Community based medical education , the clinical teacher , 2006 ; 3 : 90-96
12. Ministry of Health and Medical Education , community oriented medical education, 2009 [Accessed 2009 Aug 20] Available from: <http:// dme . mohme.gov.ir / motaleat / motaleatvatoseeh / jamenegar / moarefi . htm>
13. Ministry of Health and Medical Education , social accountable medical education , 2009 [Accessed 2010 Apr 5] Available from: http:// edc.behdasht. gov.ir/uploads/ 180_366_moarefi_pashokhgo . htm
14. Ministry of Health and Medical Education , social accountable medical education, 2010 [Accessed 2010 Apr 5] Available from: http:// edc.behdasht. gov.ir/uploads/ 180_366_barnameh_pashokhgo . Htm
15. Strasser R, Hogenbirk J.C, Minore B, Marsh D.C, Berry S, Mccready W.G, Graves L , Transforming health professional education through social accountability: Canada's Northern Ontario School of Medicine, Medical Teacher, 2013, 35 (6) : 490-496
16. Todres M, Tsimsiou Z, Sidhu K, Stephenson A, Jones R, Medical students' perceptions of the factors influencing their academic performance: An exploratory interview study with high-achieving and re-sitting medical students, Medical teacher, 2012, 34 (5) : e325-e331
17. Artino A.R, Holmboe Jr E .S, Durning S.J, Can achievement emotions be used to better understand motivation, learning, and performance in medical education?, Medical Teacher, 2012, 34 (3) : 240-244
18. Vleuten C.P.M , Schuwirth L. W. T, Driessen E. W, Dijkstra J, Tigelaar D, Baartman L. K. J, Tartwijk J, A model for programmatic assessment fit for purpose, Medical Teacher, 2012, 34 (3) : 205-214
19. Assadi S.N. Assessment of the effect of educational animations in physiology and anatomy teaching on occupational health students' learning, FMEJ, 2012; 2: 41-44
20. Assadi S.N. Comparing the Influence of Three Educational Methods on the Epidemiology of Occupational Diseases' learning Qualities, FMEJ, 2013; 4: 15-19
21. Safety and health at work, International labor organization, [Accessed 2012 Jun 25] Available from: <http:// www.ilo.org>