

ORIGINAL PAPERS

SELF-ASSESSMENT OF COMPETENCE IN PUBLIC HEALTH MANAGEMENT AS A MEASURE OF EFFECTIVENESS OF POSTGRADUATE TRAINING*

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Key words: Public health training, Assessment of competence

Abstract. The main goal of the postgraduate training in public health is to make already experienced students develop appropriate competence to deal with health problems existing and emerging within different spheres of social reality. The task involves the checking on and evaluation of the students' learning process and the didactic qualifications of teaching personnel.

A serious problem is posed here by the specificity of the postgraduate training in the course of which new competences have to be transmitted in the context of competence already possessed, which should be also improved refreshed, revised etc. Moreover, the influence of the experience and attitude components is here stronger than in the case of undergraduate studies. All these need to be reflected in the curricula, teaching methods, and assessment procedures.

In the introductory part of the paper the authors discuss briefly an approach to and the adopted definition of professional competence. The body is devoted to the assessment of competence acquired and the methods applied after a 2-year postgraduate studies for public health managers. Seventeen types of competence transmitted to the students were made the points of reference in a special self-assessment questionnaire. The respondents were asked to assess the contribution of particular courses to the acquisition or improvement of each type of competence. The results obtained in a group of students suggest that some modifications and improvements in the educational objectives and programmes should be introduced.

INTRODUCTION

The term 'competence' involves a concept incorporating four aspects of human personality. Enlarging the definition proposed in one of the WHO documents (1),

* The enlarged version of the paper presented at the XX ASPHER Annual Conference 'Quality in Public Health Training: a Pedagogical and a Public Health Issues', Turin, Italy, 10–13 October 1998.

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professional competence may be defined as **the ability to carry out a certain professional function, which is made up of a set of professional practices or tasks. Competence requires knowledge, observable mechanical and/or intellectual skills, appropriate attitudes and experience.**

The general approach to assess competence should comprise the three domains of the intellect: knowledge, skills and attitudes, all contributing directly to the competence, as it is shown on the diagram (Fig. 1).

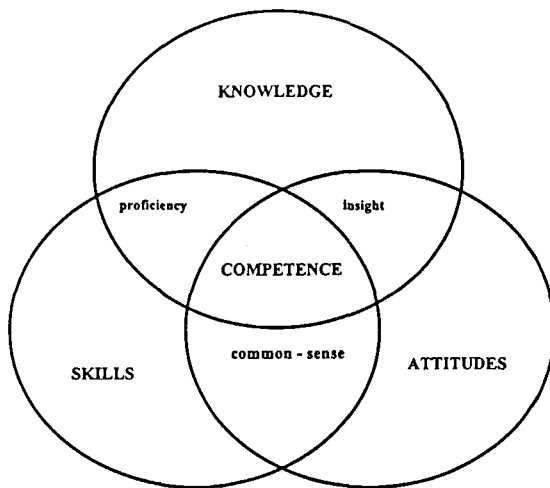


Fig. 1. Domains of human intellect contributing to competence.

Knowledge a professional must acquire is the collection of facts, values, information etc. to which one access through study, intuition, or experience.

Skill is the systematic and co-ordinated pattern of mental and/or physical activity.

Attitude is the predisposition to perceive, feel or behave in a particular manner.

Experience is a direct personal participation or observation engaging knowledge, skills, attitudes or all the configurations of these factors.

Important factor of experience constitutes a particular context for the above domains and their configurations: each of them may be considered from the point of view of one's personal experience as more or less consolidated (strengthened).

The competence gained by the postgraduate students could be gathered in a special form or questionnaire* which the institutions providing training in public health could use as an instrument for formative programme assessment with the three basic areas of application:

(a) **The teaching staff** could use it to determine whether a given set of classes (subject, course) does provide competence according to the programme and to what degree particular competence have been acquired;

* An inspiring example or standards to follow may be the form developed by G.P. Loos for self-assessment of the competence gained by the graduates of schools of public health (2).

(b) **The students could use it** to assess extent and intensity of the acquired knowledge, skills, attitudes and experience;

(c) **The management of the training institution** could use it for internal reviewing of the content, scope, and degree of implementation of particular elements of a training programme.

The self-assessment questionnaire could have the form of a table (or matrix) where side-headed could be the various types of competence in public health to be acquired by the students. In the heading of the table the subjects or courses could be enumerated in the frame of which particular competence could be transmitted. It is not expected that any individual subject or course can provide students with all required competences. But for the sake of full clarity of the self-assessment results it would be helpful to refer the students' experience received from all curricula realised in the educational process to each type of competence.

Thus, the proposed self-assessment questionnaire would help single out the areas which appear deficient either in educational substance or didactic skills of the teaching staff. It could also help identify the areas of overlap of the teaching substance, which would enable restructuring of the curricula and re-arrangement of the teaching sequences (from elementary to advanced).

In the cells created by the crossing of competence and names of courses/teaching subjects, the level of a given competence attained in the course of training could be determined. In the form developed by G.P. Loos four such levels were proposed. The determination of each level (except the first one) is based on the two criteria: (a) the teaching time; and (b) the expected (attained) level of perception (3). Unless the assessed competence meets both criteria at the given level, it should be marked at the next lower level.

The proposed system of marking in the form the degree of acquisition of a competence looks as follows:

'0' — The given competence has not been taught as part of a given subject or course;

'1' — (a) The given competence has been (was) taught at an elementary level, as part of the curriculum but without any special emphasis;

(b) The expected (attained) level of perception is defined here as **assimilation** and **understanding** of the material. The students have memorised and can repeat what they had read or heard and they are also able to interpret what they have assimilated;

'2' — (a) The given competence has been (was) taught at an intermediate level, as an integral part of an enriched curriculum during at least one full class session;

(b) The expected (attained) level of students' perception: **application** and **analysis**. The students are able to use the assimilated knowledge in situations other than training and they can also discern the constituent parts of the assimilated knowledge and can explain their hierarchy and inter-relationships;

'3' — (a) The given competence has been (was) taught at an advanced level, as the main part of the curriculum, during two or more class sessions;

(b) The expected (attained) level of students' perception: **synthesis** and **evaluation**. Students are capable to re-arrange, by inductive reasoning, the elements of the acquired knowledge and experience into a new, previously non-existing construction. They are also capable of purposeful judgement of the assimilated

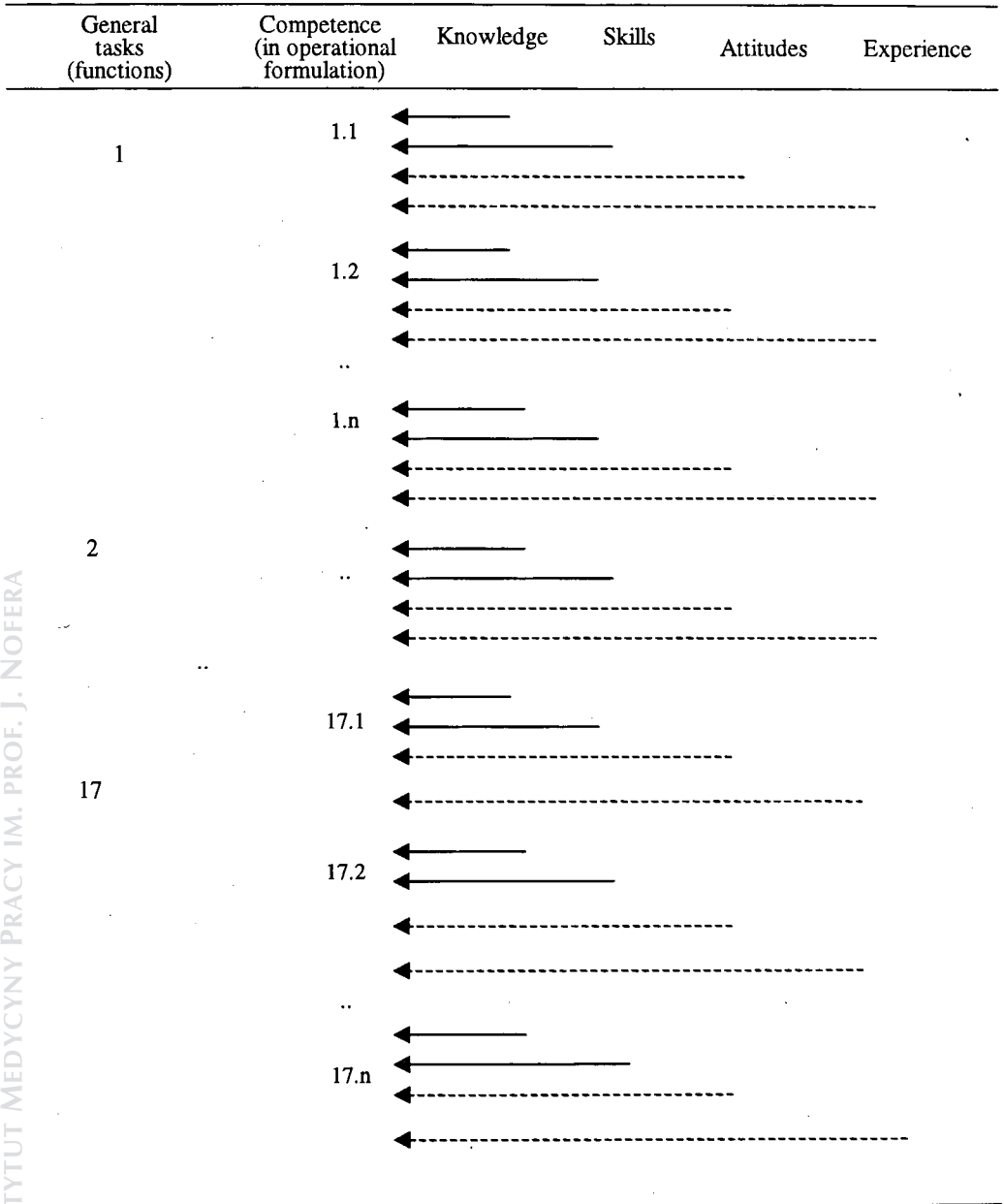


Fig. 2. Self-assessment questionnaire construction.



material, whether by applying the principles of logic or by comparing it to some external standards, such as, for instance, the highest standard in the discipline.

To construct a self-assessment questionnaire it will be necessary to solve the main three methodological problems:

Problem 1. Make operational the general formulations of competence, i.e. transfer from the general formulations of the 'competence' to measurable elements, namely to items in the questionnaire. What is needed is to indicate those elements of knowledge, skills, experience and attitudes that are representative of the principal aims of the training and are, at the same time, fairly easy to identify. In terms of operating competence there should be no doubt as to whether they have been acquired/obtained in the training or whether they were part of the training programme. An important aspect of the problem is to ensure a suitable level of generalisation; the formulations used in the form to define competence should be neither too general nor too detailed.

Problem 2. Make an entry assessment of competence at the start of the training cycle and enter its results in the form for self-assessment of acquired competence. It is important to distinguish between the competence attributable to training and whatever previous competence to help the respondents (the trainees) and assure correct analysis of the self-assessment results.

Problem 3. Standardise the individual assessment procedures, i.e. unify the respondents' understanding of the items. It is particularly important that all respondents should use the same scale for grading competence and entering the marks in the questionnaire. This entails providing the respondents with properly formulated criteria and instructions on the competence levels.

Regardless of how these problems are solved, the basic construction scheme of the questionnaire for self-assessment of competence is shown in Fig. 2.

THE METHOD AND RESULTS OF THE STUDY

The main goal of the postgraduate training in public health is to make already experienced students develop appropriate competence to deal with health problems existing and emerging within different spheres of social reality. The task involves the checking on and evaluation of the learning process and the didactic qualifications of teaching personnel.

A serious problem is posed here by the specificity of the postgraduate training in the course of which new competences have to be transmitted in the context of competence already possessed, which should be also improved, refreshed, revised etc. Moreover, the influence of the experience and attitude components is here stronger than in the case of undergraduate training. All these need to be reflected in the training curricula, teaching methods, and assessment procedures.

In this paper we present a simplified approach to analysis and description of the role and function of the self-assessment of the professional competence as an instrument of development, improvement and/or modification of public health education programmes.

In one of the faculties of the School of Public Health functioning at The Nofer Institute of Occupational Medicine in Łódź, we take into consideration – as educational objectives – a set of general competences (as a matter of fact being the

types or sets of professional competence in public health) which should be transmitted to and acquired by the students. These are the competence in:

1. Identifying the impact of the population processes and demographic structures on the health needs and health care demand;
2. Identifying on the basis of epidemiological data the health problems existing in a given community;
3. Analysing and evaluating the practical usefulness of results revealed by epidemiological studies;
4. Making use of the statistical data and the results of epidemiological and social studies to identify the structure and dimensions of the population health needs;
5. Making use of the legal norms regulating the activities of health care institutions, and the functioning of health administration organs;
6. Formulating the strategies of health care institutions' activities;
7. Planning the organisational structures and procedures;
8. Co-ordinating activities of different institutions being engaged in the protection of health of a given community;
9. Knowledge of the health insurance system and the activities of insurance institutions;
10. Developing the co-operation between different persons and institutions, conducting negotiations;
11. Utilising cost data in the process of rational resources management and in health programmes development;
12. Making decisions concerning the flow of financial means between the public sources disposer and the health care institutions;
13. Human resources management, in particular selecting the employees to deal with the actual health programmes and conducting the appropriate personnel policy;
14. Identifying the social and psychological factors influencing people's behaviour in the health care organisation and its environment;
15. Evaluating the usefulness and utilisation of the medical equipment in different types of health care institutions;
16. Making use of the organisational and decision making techniques to identify and solve the organisational and managerial problems;
17. Managing different forms of property.

The programme of a 2-year postgraduate training (1996/97) at the faculty of Organisation, Management and Economics of Health Care (a part of the School of Public Health at The Nofer Institute of Occupational Medicine in Łódź) includes eighteen subjects/courses in the frame of which the above mentioned competences are expected to be transmitted, developed or improved (below they are listed in order of their time proportion in the programme; some of the course names are preceded by their abbreviated form used in Tables).

1. (Financing) Financing of the Health Care System (15.9%)
2. (Insurances) Health and Social Insurances (13.6%)
3. (Org. and Manag). Organisation and Management (10.3%)
4. Psychology (7.9%)
5. Biostatistics (7.5%)
6. (H. Economics) Health Economics (7%)
7. (H. Institutions) Health Care and Health Protection Institutions (6.1%)



Pytanie C: Biorąc pod uwagę wymienione w poniższej tabeli przedmioty wykładane w czasie P. studiów w Szkole Zdrowia Publicznego, prosimy ocenić udział każdego z nich w nabywaniu bądź rozwijaniu poszczególnych rodzajów kompetencji.

Ocenę prosimy dokonać według następującej skali: PROF. J. NOFERA

- 0 - brak udziału ...
1 - niewielki (śladowy) udział ...
2 - pewien istotny udział ...
3 - duży udział danego przedmiotu w nabywaniu/rozwijaniu przez P. kompetencji określonego rodzaju

Na osobnej kartce znajduje P. Legendę - rozszyfrowanie skrótów z tabeli 2 oraz ogólny czas trwania zajęć z danego przedmiotu i nazwiska osób prowadzących zajęcia.

TABELA 2

Rodzaje kompetencji	POLIT. ZDROW.	ORG. I ZARZ.	UBECP.	ODZ.	GRUP. FINANS.	DEM.	EPID.	ETIKA	SOC. PROM.	SOC. OBG.	ZDR. SHOD. OZ.	INST. OZ.	PSTOD.	PRAMO	HIG. ZYM.	BIO- STAL.	ECON. ZDR.	NAR. PR. ZDROW.
Rozpoznawanie wpływu procesów ludzkich oraz struktur organizacyjnych na kształtowanie się potrzeb zdrowotnych ludności																		
Epidemiologiczne rozpoznawanie problemów zdrowotnych konkretnych społeczności																		
Analiza i ocena przydatności praktycznej wyników badań epidemiologicznych																		
Posługiwanie się danymi statystycznymi oraz analizami badań epidemiologicznych i społecznych dla ustalania struktur i potrzeb zdrowotnych populacji																		
Posługiwanie się normami prawnymi regulującymi funkcjonowanie zakładów opieki zdrowotnej i organów administracji w zakresie ochrony zdrowia																		
Formułowanie strategii działania zakładów opieki zdrowotnej																		
Projekowanie struktur i procedur organizacyjnych																		
Koordinowanie działań różnych instytucji zaangażowanych w ochronę zdrowia danej społeczności terytorialnej																		
Tworzenie problemów instytucji ubezpieczeniowych i systemu ubezpieczeń zdrowotnych																		
Porozumiewanie do współpracy ludzi i instytucji oraz prowadzenie negocjacji																		
Wykorzystywanie danych o kosztach w procesie racjonalnego gospodarowania zasobami i kierowaniu programami zdrowotnymi																		
Podjęcie decyzji w sprawie przebiegu środków finansowych między organami zdrowia publicznego, a zakładami opieki zdrowotnej																		
Zarządzanie zasobami ludzkimi, a szczególnie doboru pracowników do realizacji konkretnych programów zdrowotnych i prowadzenia rzeczywistej polityki zdrowotnej																		
Rozpoznawanie czynników społecznych i psychologicznych kształtujących zachowanie ludzi w organizacji opieki zdrowotnej i w jej ocenie																		
Ocena przydatności i stopnia wykorzystania aparatury medycznej																		
Posługiwanie się technikami organizatorskimi i technicznymi decyzyjnymi w rozpoznawaniu i rozwiązywaniu problemów z zakresu organizacji i zarządzania																		
Zarządzanie różnymi formami własności																		

Fig. 3. An original questionnaire used in the study (types of competence and subjects given in the text).

8. Epidemiology (5.1%)
9. (Soc. and Prom.) Health Sociology and Health Promotion at the Workplace (4.2%)
10. (NHS Org.) Organisation of the National Health System (4.2%)
11. Health Policy (3.7%)
12. Demography (3.7%)
13. (Env. Health) Environmental Determinants of Health (2.3%)
14. (Soc. Org.) Sociology of Organisation (2.3%)
15. (H. Ethics) Introduction to Health Care Ethics (2.3%)
16. (H. Law) Health Protection Law (1.9%)
17. (F/N. Hygiene) Food and Nutrition Hygiene (Medical Basis of Public Health) (1.4%)
18. (H. Programmes) National Health Programmes (0.5%)

The self-assessment questionnaire has the form of a table (or matrix) where side-headed are the various types of competence in public health to be acquired by the students. In the heading of the table the subjects or courses are enumerated in the frame of which particular types of competence are transmitted. Fig. 3 presents the original form used in our study.

In the cells created by the crossing of competence and names of courses/teaching subjects the students determined on the contribution of a given subject/course to the acquisition or/and development of a given type of competence.

The system of marking the degree of a subject's contribution appeared as follows:

'0' – no contribution

'1' – small contribution

'2' – some real contribution

'3' – significant contribution of a given subject/course.

Nineteen persons who graduated in January 1998 from a 2-year postgraduate training in the faculty of Organisation, Management and Economics of Health Care were asked to fill anonymously the above-mentioned detailed matrix. The results of their assessment are presented in Tables 1–4.

DISCUSSION

There are some problems arising from the interpretation of the results. How to interpret a given index (scores' average) of the contribution of a subject/course to the transmission of a given type of competence? It refers particularly to the subjects/courses not so closely related to particular types of competence – formulated in a given way.

If we know the **normative pattern** of detailed interrelations between the types of competence and the subject/course (on the basis of existing education objectives, programmes etc.), there arise three possibilities of interpretation:

- 1) the contribution is too small (should be greater) – that suggests appropriate changes in the programme content and, possibly, in the teaching procedures;
- 2) the contribution is adequate (even in the case of small scores' average);
- 3) the contribution is too high (should be smaller – with all the implications to the programme, teaching procedures etc.).

If we do not have such a normative pattern (and this is the studied case) the interpretation of the results obtained in the above study is very difficult.

Table 1. The intensity of contribution of particular subjects/courses to acquire/develop different types of competence – in the students' opinion (the average scores from the assessment matrix)

Types of competence	Subject/courses contribution		
	high avg scores 1.50 and more)	medium (avg scores: 1.00 to 1.49)	small (avg scores: .50 to .99)
1. Identifying the impact of the population processes and demographic structures on the health needs and health care demand	Demography (2.32), Epidemiology (1.95), Health Policy (1.79)	Insurances (1.37), NHS Org. (1.00), H. Programmes (1.00)	H. Economics (.95), Org. and Manag. (.89), Soc. and Prom., Soc.Org., Biostatistics (.79), Env. Health, H. Institutions (.74), F./N. Hygiene (.63)
2. Identifying on the basis of epidemiological data the health problems existing in a given community	Epidemiology (2.53)	Demography (1.37), Env.Health (1.16), F./N. Hygiene (1.11), Biostatistics (1.05), H. Policy (1.00)	H. Programmes (.89), Soc. and Prom. (.84), Insurances (.74), Soc. Org. (.68), NHS Org. (.58)
3. Analysing and evaluating the practical usefulness of results revealed by epidemiological studies	Epidemiology (2.58), Biostatistics (1.56)	Demography (1.32)	H. Policy, Insurances (.84), Env. Health (.79), H. Economics, H. Programmes (.74), NHS Org., Soc. and Prom., F./N. Hygiene (.58), H. Institutions (.53)
4. Making use of the statistical data and the results of epidemiological and social studies to identify the structure and dimensions of the population health needs	Epidemiology [2.47], Biostatistics [1.74]	Demography (1.32), H. Policy (1.05) Insurances (1.37)	H. Programmes (.95), Soc. and Prom. (.84), NHS Org., Env. Health, H. Economics (.74), F./N. Hygiene (.58), Org. and Manag., Soc. Org. (.53)
5. Making use of the legal norms regulating the activity of health care institutions and the functioning of health administration organs	H. Law (1.74), Insurances (1.58)	H. Institutions (1.42), NHS Org. (1.32), H. Economics (1.00)	H. Policy (.95), Org. and Manag. (.84), Financing (.58)
6. Formulating the strategies of health care institutions' activities	Org. and Manag. (2.21), H. Institutions (1.74), NHS Org. (1.68), H. Policy (1.63)	H. Economics (1.37), Insurances (1.32), Financing (1.26)	H. Law (.89), Soc. and Prom., Soc. Org. (.74), Env. Health (.63), Demography (.58), Epidemiology, H. Programmes (.53)
7. Planning the organisational structures and procedures	Org. and Manag. (2.74), H. Institutions (1.53)	NHS Org (1.26), Financing (1.11), H. Economics (1.05)	H. Policy (.95), Insurances, Soc. and Prom., H. Law (.58), Soc. Org., Psychology (.53)

Table (contd)

Types of competence	Subject/courses contribution		
	high avg scores 1.50 and more	medium (avg scores: 1.00 to 1.49)	small (avg scores: .50 to .99)
8. Co-ordinating activities of different institutions being engaged in the protection of health of a given community	Org. and Manag. (1.68), H. Institutions (1.53)	NHS Org. (1.37), H. Policy (1.26), Insurances (1.11)	H. Economics (.89), Financing (.79), Soc. and Prom., H. Law (.68), Soc. Org. (.58)
9. Knowledge of the health insurance system and activities of insurance institutions	Insurances (2.63)	—	H. Institutions (.95), NHS Org., H. Law, H. Economics (.63)
10. Developing the co-operation between different persons and institutions, conducting negotiations	Psychology (2.05)	Org. and Manag. (1.16)	H. Institutions (.79), Soc. and Prom., Soc. Org. (.74), H. Policy (.58), NHS Org. (.53)
11. Utilising cost data in the process of rational resources management and in health programmes development	Financing (1.89), H. Economics (1.84)	H. Institutions (1.16), H. Policy (1.11), Insurances (1.05)	NHS Org. (.89), Org. and Manag. (.74)
12. Making decisions concerning the flow of financial means between the public sources disposer and the health care institutions	Financing (1.84), H. Economics (1.53)	H. Institutions (1.32), Insurances (1.05)	NHS Org. (.84), Org. and Manag. (.58)
13. Human resources management, in particular selecting the employees to deal with the actual health programmes and conducting the appropriate personnel policy	Psychology (1.89), Org. and Manag. (1.79)	—	H. Institutions (.95), H. Policy (.68), Soc. Org., H. Economics (.63), Insurances (.53)
14. Identifying the social and psychological factors influencing people's behaviour in the health care organisation and its environment	Psychology (2.00)	Org. and Manag. (1.37), Soc. Org. (1.26), Soc. and Prom. (1.16)	H. Policy (.79), H. Institutions (.53)
15. Evaluating the usefulness and utilisation of the medical equipment in different types of health care institutions	—	—	H. Institutions (.84), H. Economics (.79)
16. Making use of the organisational and decision making techniques to identify and solve the organisational and managerial problems	Org. and Manag. (2.42)	Psychology (1.26), H. Policy (1.05)	H. Institutions (.89), NHS Org. (.79), Soc. Org. (.63), H. Economics (.53)
17. Managing different forms of property	—	Org. and Manag. (1.32), H. Institutions (1.11), Financing (1.05)	H. Economics (.84), H. Law (.63), Insurances (.58), NHS Org. (.53)

Table 2. The types of competence (numbers from the above list) served by particular subjects/courses with different intensity – in the students' opinion (according to the average scores from the assessment matrix)

Subject/course	Avg of all the contribution scores	Types of competence served with			Number of types of competence served by particular subject/course
		high intensity (avg scores: 1.50 and more)	medium intensity (avg scores: 1.00 to 1.49)	low intensity (avg scores: .50 to .99)	
Organization and Management	1.17	6, 7, 8, 13, 16	10, 14, 17	1, 4, 5, 11, 12	13
Health Institutions	.99	6, 7, 8	5, 11, 12, 17	1, 3, 9, 10, 13, 14, 15, 16	15
Insurances	.91	5, 9	1, 4, 6, 8, 11, 12	2, 3, 7, 13, 17	13
Health Policy	.89	1, 6	2, 4, 8, 11, 16	3, 5, 7, 10, 13, 14	13
Health Economics	.86	11, 12	5, 6, 7	1, 3, 4, 8, 9, 13, 15, 16, 17	14
NHS Organisation	.82	6	1, 5, 7, 8	2, 3, 4, 9, 10, 11, 12, 16, 17	14
Financing	.71	11, 12	6, 7, 17	5, 8, 16	8
Epidemiology	.70	1, 2, 3, 4	—	6	5
Psychology	.60	10, 13, 14	16	7	5
H. Sociology and H. Promotion	.51	—	14	1, 2, 3, 4, 6, 7, 8, 10	9
Sociology of Organisation	.50	—	14	1, 2, 4, 6, 7, 8, 10, 13, 16	10
Demography	.50	1	2, 3, 4	6	6
Health Law	.45	5	—	6, 7, 8, 9, 12, 17	7
Environmental Health	.39	—	2	1, 3, 4, 6	5
Biostatistics	.37	3, 4	2	1	4
Health Programmes	.36	—	1	2, 3, 4, 6	5
Food/Nutr. Hygiene	.26	—	2	1, 3, 4	4
Health Ethics	.13	—	—	—	—

As one can conclude from Table 1, the **general structure** of the contribution of different subjects/courses to the development of particular types of competence seems to be adequate. Only one type of competence (No. 15) has practically no subjects/courses contributing to its development. The measures should be taken to check whether this type of competence is included into the curricula and properly transmitted to the students. From another point of view one can also analyse whether this type of competence is necessary in our school programme.

Concerning the **usefulness** of particular subjects/courses, we may take into consideration two criteria: (1) the **intensity of contribution** – the average of all contribution scores (the index of contribution of a given subject/course to the training programme taken as a whole), also the average of individual scores; (2) the **scope/range of contribution** – the number of competence types served by particular subject/course.

On the basis of these two criteria we can present the usefulness of particular subjects/courses in four **categories of contribution** to the training programme (Table 3):

1. Large and intensive
(Organisation and Management, Health Institutions, Insurances, Health Policy, Health Economics, NHS Organisation, Financing)
2. Large but not intensive
(Sociology of Organisation, Health Sociology and Health Promotion, Health Law)
3. Intensive but not large
(Epidemiology, Psychology, Demography)
4. Neither large nor intensive
(Health Ethics, Food/Nutrition Hygiene, Health Programmes, Biostatistics, Environmental Health).

Table 3. The categories of subjects' contribution to the training programme

Scope /range/ of contribution	Intensity of contribution	
	Intensive	Not intensive
Large	Organisation and Management Health Institutions Insurances Health Policy Health Economics NHS Organisation Financing	Sociology of Organisation Health Sociology and Health Promotion Health Law
Not large	Epidemiology Psychology Demography	Health Ethics Food/Nutrition Hygiene Health Programmes Biostatistics Environmental Health

Table 4. The categories of subjects' general evaluation

Time proportion	Scope/intensity of contribution to the training programme	
	Large and intensive	Neither large nor intensive
Relatively high	e.g. Organisation and Management Insurances	e.g. Financing Biostatistics H. Sociology and H. Promotion
Relatively low	e.g. Health Institutions Health Policy NHS Organisation	e.g. Health Ethics Food/Nutrition Hygiene Health Programmes



The comparison between the proportion of time of a given subject/course in the programme and the intensity or/and the range/scope of its contribution to the programme provides another important criterion of usefulness (Table 4). We have here other four categories or types to use in the general evaluation of particular subjects/courses:

1. Relatively high time proportion and large scope and/or high intensity of contribution (e.g. Organisation and Management, Insurances).
2. Relatively high time proportion and narrow scope and/or low intensity of contribution (e.g. Financing, Biostatistics, H. Sociology and H. Promotion).
3. Relatively low time proportion and large scope and/or high intensity of contribution (e.g. Health Institutions, Health Policy, NHS Organisation).
4. Relatively low time proportion and narrow scope and/or low intensity of contribution (e.g. Health Ethics, Food/Nutrition Hygiene, Health Programmes).

CONCLUSIONS

Assuming that competence types described above are well formulated, comprehensive, exhaustive etc., several subjects should be modified, profoundly changed or even eliminated from the School's programme.

But one can also take another assumption that the subjects on the curricula mentioned in the paper (and taken into consideration in the analysis) are well prepared and well taught, that they correspond with the public health needs and demands, as well as with demands of our postgraduate students. In this case, perhaps, the competence have been formulated in a misty, unclear or ambiguous way and should be modified or reformulated.

The in-depth interpretation of these typologies and, if necessary organisational recommendations resulting from their application are possible only in the context of detailed analysis of educational objectives and programmes which actually goes far beyond the limits of this paper.

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Received for publication: January 19, 1999

Approved for publication: February 3, 1999

