The production of a framework of competences for pharmacy practice in the European Union: the PHAR-QA project

Jeffrey Atkinson[1], Kristien De Paepe[2], Antonio Sánchez Pozo[3], Dimitrios Rekkas[4], Daisy Volmer[5], Jouni Hirvonen[6], Borut Bozic[7], Agnieska Skowron[8], Constantin Mircioiu[9], Annie Marcincal[10], Andries Koster[11] and Keith Wilson[12]

[1] Pharmacolor Consultants Nancy, 12 rue de Versigny, Villers 54600, France; jeffrey.atkinson@univ-lorraine.fr; [2] Vrije Universiteit Brussel, Laarbeeklaan 103, Brussels 1090, Belgium;
[3] University of Granada, Campus Universitario de la Cartuja s/n, Granada 18701, Spain; [4] National and Kapodistrian University Athens, Panepistimiou 30, Athens 10679, Greece;
[5] University of Tartu, Nooruse 1, Tartu 50411, Estonia; daisy.volmer@ut.ee; [6] University of Helsinki, Yliopistonkatu 4, P.O. Box 33-4, Helsinki 00014, Finland;
[7] University of Ljubljana, Askerceva cesta 7, Ljubljana 1000, Slovenia; [8] Jagiellonian University, Golebia 24, Krakow 31-007, Poland;
[9] University of Medicine and Pharmacy "Carol Davila" Bucharest, Dionisie Lupu 37, Bucharest 020021, Romania; [10] Université de Lille 2 (UL), Lille 59000, France;
[11] European Association of Faculties of Pharmacy, Utrecht University, PO Box 80082, 3508 TB Utrecht, The Netherlands; [12] Aston University, Birmingham, B4 7ET, UK

Background and Objectives The goal of the PHAR-QA (Quality assurance in European pharmacy education and training) project is the production of a European framework of competences for pharmacy practice. This PHAR-QA framework (www.phar-qa.eu) will be European and consultative i.e. it will be used for harmonization - but will not to replace existing national QA systems. The project started in October 2012 and will finish in March 2016.

Methods Using the proposals for competences produced by the previous PHARMINE (Pharmacy education in Europe; www.pharmine.eu) project, together with those of other sources, the authors produced 13 questions in groups, all together a list of 68 personal and patient care competencies (**Table 1**). Using Delphi-type study methodology and internet tools the stakeholders - European pharmacy community (university department staff and students, community, hospital and industrial pharmacists, as well as pharmacists working in clinical biology and other branches, together with representatives of chambers and associations) - were invited to rank the proposals (1- not important to 4 - essential/obligatory) and add comments. The phases of the PHAR-QA project are described on the **Figure 1**.

Table 1. Questions of groups of personal and patients care competencies in pharmacy practice

Question groups (Questions 7-19)	Description
Personal competencies	
Q 7	Learning and knowledge
Q 8	Values
Q 9	Communication and organizational skills
Q 10	Knowledge of different areas of the science of medicines
Q 11	Understanding of industrial pharmacy
Patient care competences	
Q 12	Patient consultation and assessment
Q 13	Need for drug treatment
Q 14	Drug interactions
Q 15	Provision of drug product
Q 16	Patient education
Q 17	Provision of information and service
Q 18	Monitoring of drug therapy
Q 19	Evaluation of outcomes

Figure 1. Description of the PHAR-QA project

Results In total, 1,245 completed study instruments were received (**Figure 2**). Of the respondents 66% were under 41 years old; about half of the respondents were working pharmacists (49.9%) and another half students (30.7%) plus university staff (19.4%). The majority of respondents (69.7%) ranked the listed competencies as 3 or 4 thus considering the proposed professional competencies obligatory for pharmacy practice.

Professional groups	Number of respondents	%	Estimated European population (x 1,000)	Calculated minimal sample size
Community pharmacists	258	20.7	400 (PGEU)	97
Hospital pharmacists	152	12.2	12 (EAHP)	96
Industrial pharmacists	135	10.8	10 (EIPG)	96
Others	77	6.2	?	?
Students	382	30.7	200 (PHARMINE)	96
Academics	241	19.4	10 (PHARMINE)	96
Total	1,245	100	400+12+10+200+10 = 632	97

Figure 2. The percentages of different professional groups participated in the study.

There was good overall agreement between groups. Pharmacology and pharmacotherapy together with competences such as "supply of appropriate medicines taking into account dose, correct formulation, concentration, administration route and timing" ranked high. Other topics such as "current knowledge of design, synthesis, isolation, characterisation and biological evaluation of active substances" ranked lower.

Industrial pharmacists gave higher scores for Q11 ("understanding of industrial pharmacy") than did community pharmacists and lower scores for Q13 ("need for drug treatment") and Q14 ("drug interactions") (**Figure 3**). The students often demonstrated higher scores in comparison with community pharmacists (**Figure 4**).
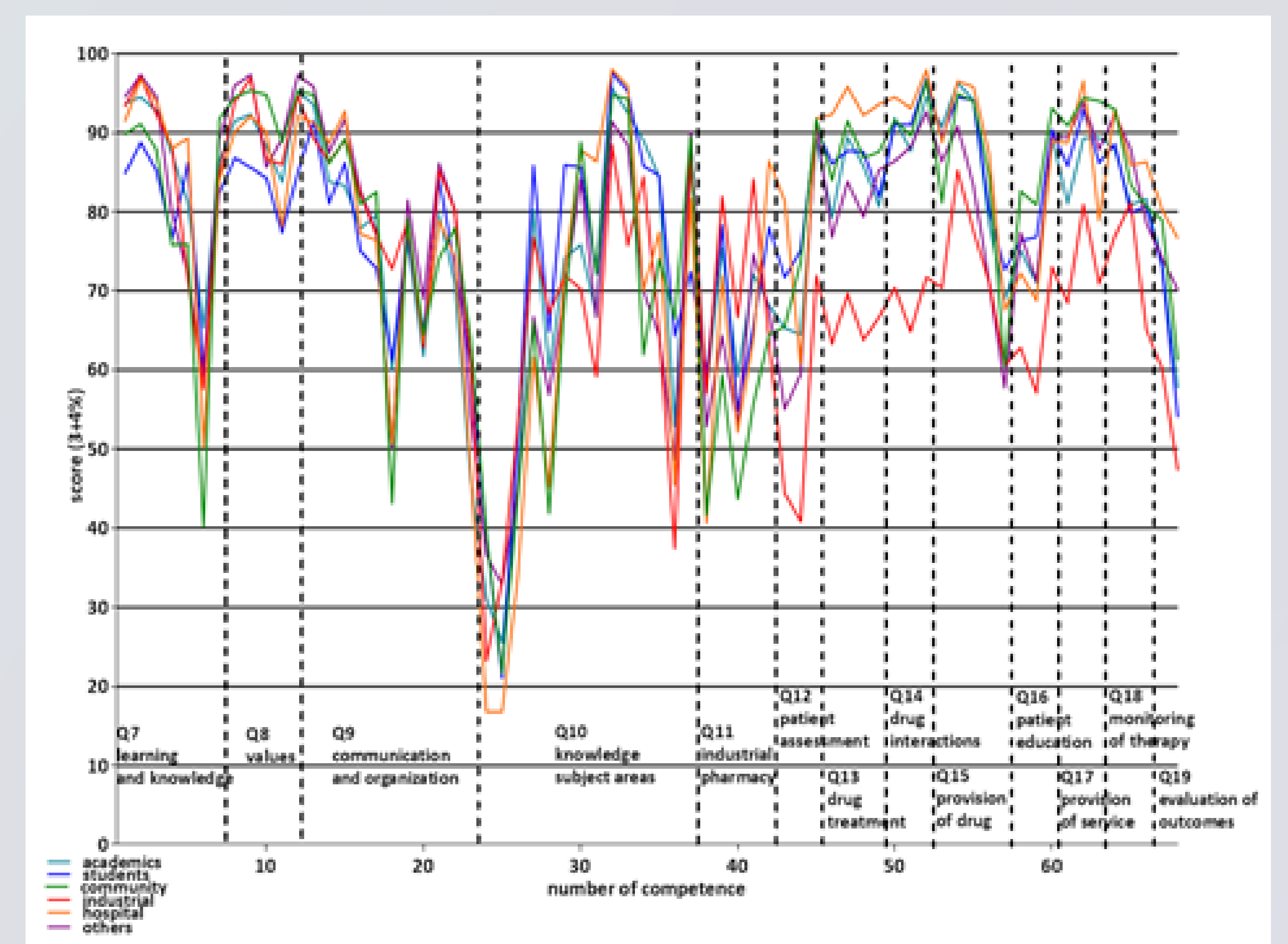

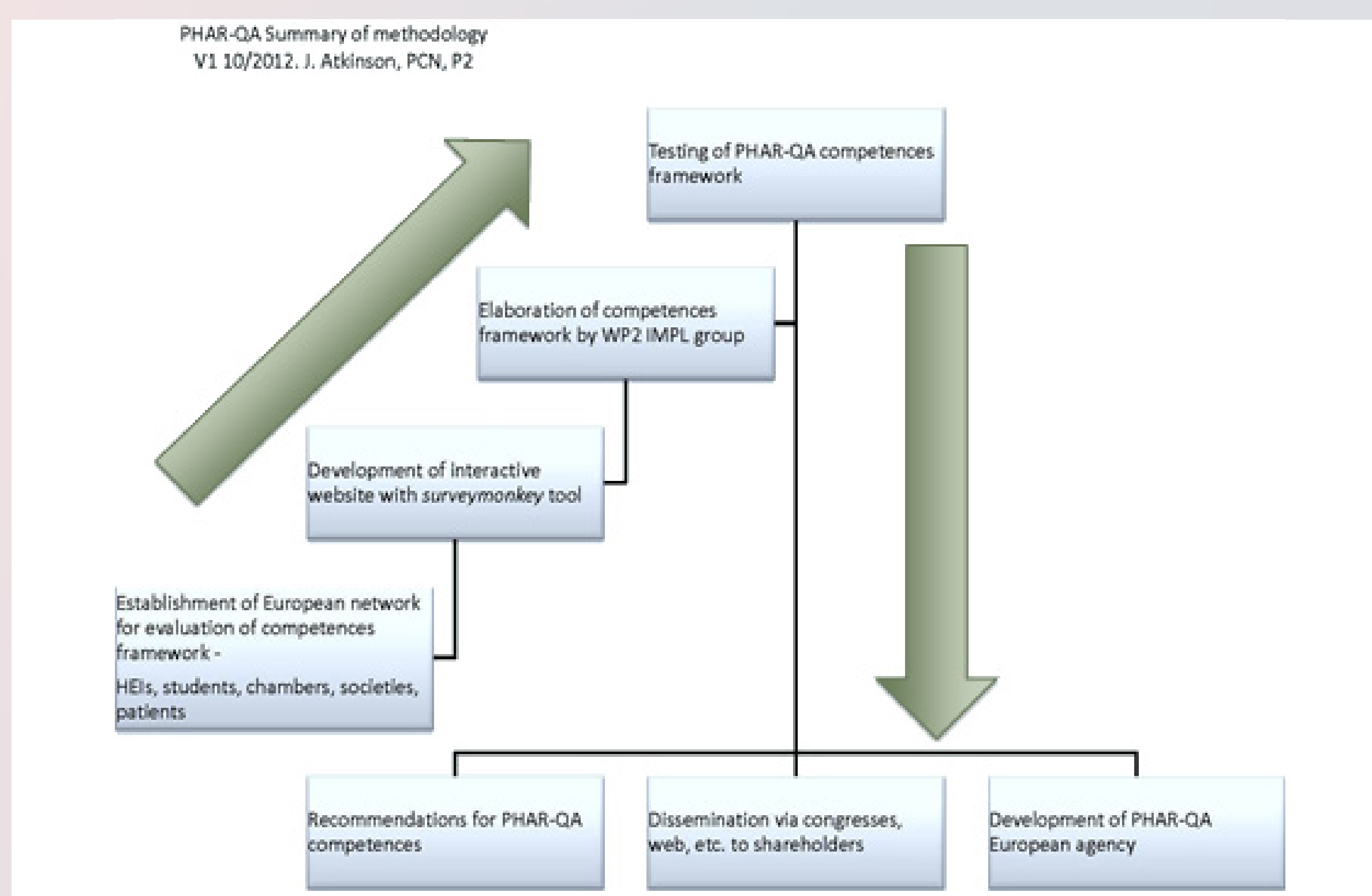**Figure 3**. Ranking of professional competencies in pharmacy practice by six professional groups.
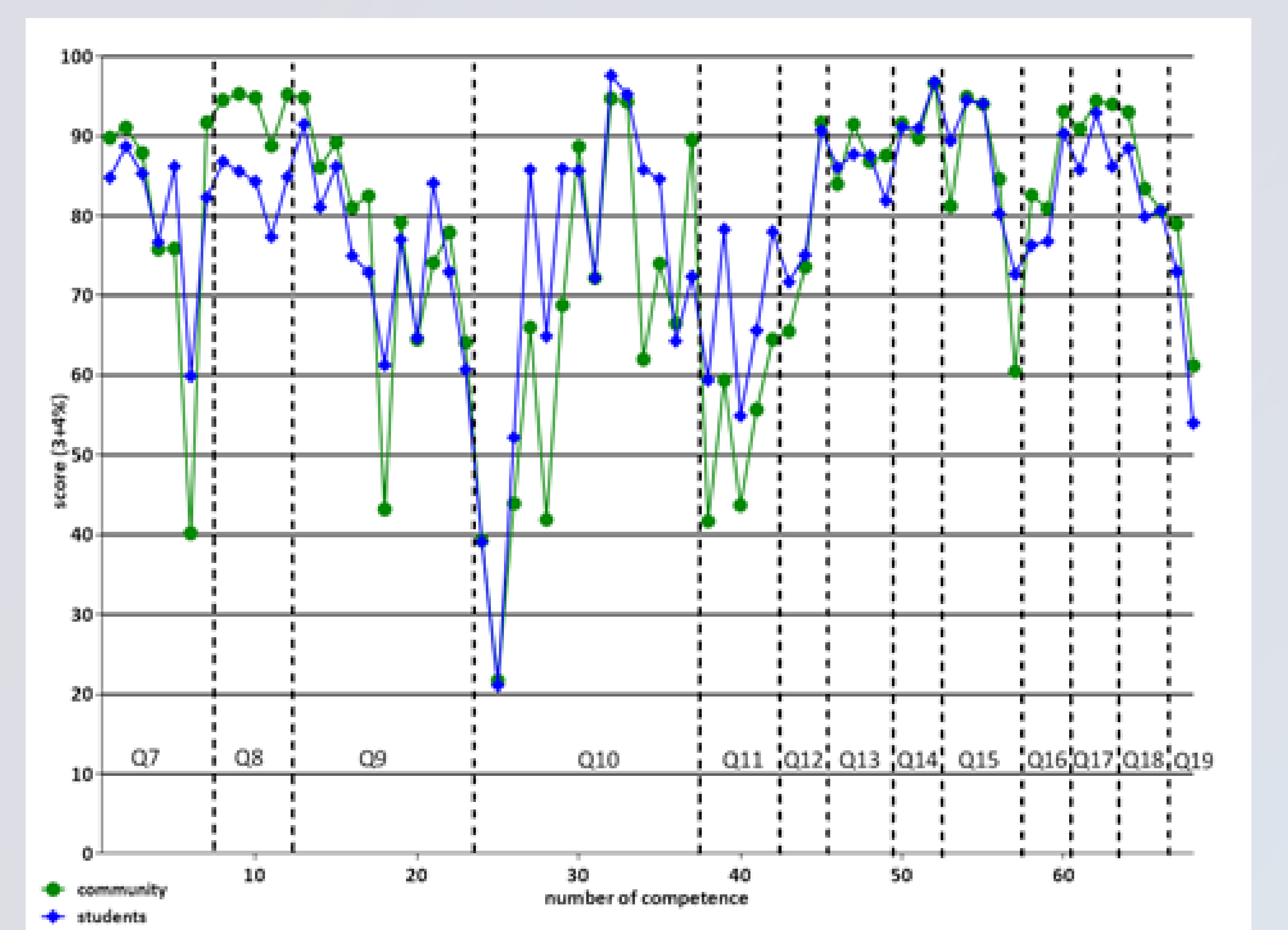

Figure 4. Ranking of professional competencies in pharmacy practice by students and community pharmacists.

Conclusions In the phase one of the PHAR-QA project the competency framework for pharmacy practice has been developed. In the phase two the framework will be finalized using Delphi round two and the competency model will be tested in collaboration with European Association of Faculties of Pharmacy. In the long term, this framework could serve as a European model framework of competences for pharmacy practice.