The PHAR-QA project: Quality Assurance in European Pharmacy Education and Training. Results of the European network Delphi round 1.

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Abstract.

PHAR-QA, funded by the European Commission, is producing a framework of competences for pharmacy practice. The framework is in line with the EU directive on sectorial professions and takes into account the diversity of the pharmacy profession and the on-going changes in healthcare systems (with an increasingly important role for pharmacists), and in the pharmaceutical industry. PHAR-QA is asking academia, students and practicing pharmacists to rank competences required for practice.

The results show that competences in the areas of "drug interactions", "need for drug treatment" and "provision of information and service" were ranked highest whereas those in the areas of "ability to design

and conduct research" and "development and production of medicines" were ranked lower. For the latter two categories, industrial pharmacists ranked them higher than did the other 5 groups.

Introduction.

Competence frameworks are needed as a tool for international recognition when dealing with the different educational systems and programs. Competences, and resulting learning outcomes, are more meaningful indicators than course content or duration. Furthermore a profession such as pharmacy is defined by competences that are regularly refined in order to fulfil society's demands.

The PHAR-QA project[i] will produce a consensual, harmonized competence framework for pharmacy practice to be used as a base for a QA system for evaluation of university pharmacy education and training at the institutional, national and/or European levels. Under the auspices of EAFP[ii], PHAR-QA brought together several of the major players in pharmacy education from "old" and "new Europe", and from eastern, western, southern and northern Europe (the authors).

The methodology ued is similar to that of other projects such as MEDINE[iii] in which a framework for medical competences was proposed. Furthermore, we have a representative from MEDINE to help us to solve the many difficulties of this complex type of project.

Stakeholders are the major EU pharmacy agencies and associations: PGEU[iv], EPSA[v], EAHP[vi], and EIPG[vii]. PHAR-QA has connections with pharmacy education QA agencies in the USA (ACPE[viii]) and in Australia and New Zealand (PhLOS[ix]).

Methodology.

Figure 1 shows the 2 main phases of the PHAR-QA project: phase 1 (from left to right, ascending) from establishment of a European network in pharmacy, through Delphi-type surveying, finishing with the development of the PHAR-QA competence framework, and phase 2 (descending): finishing with the establishment by EAFP some sort of reference system such as a European QA agency.

Figure 1. The PHAR-QA methodology.
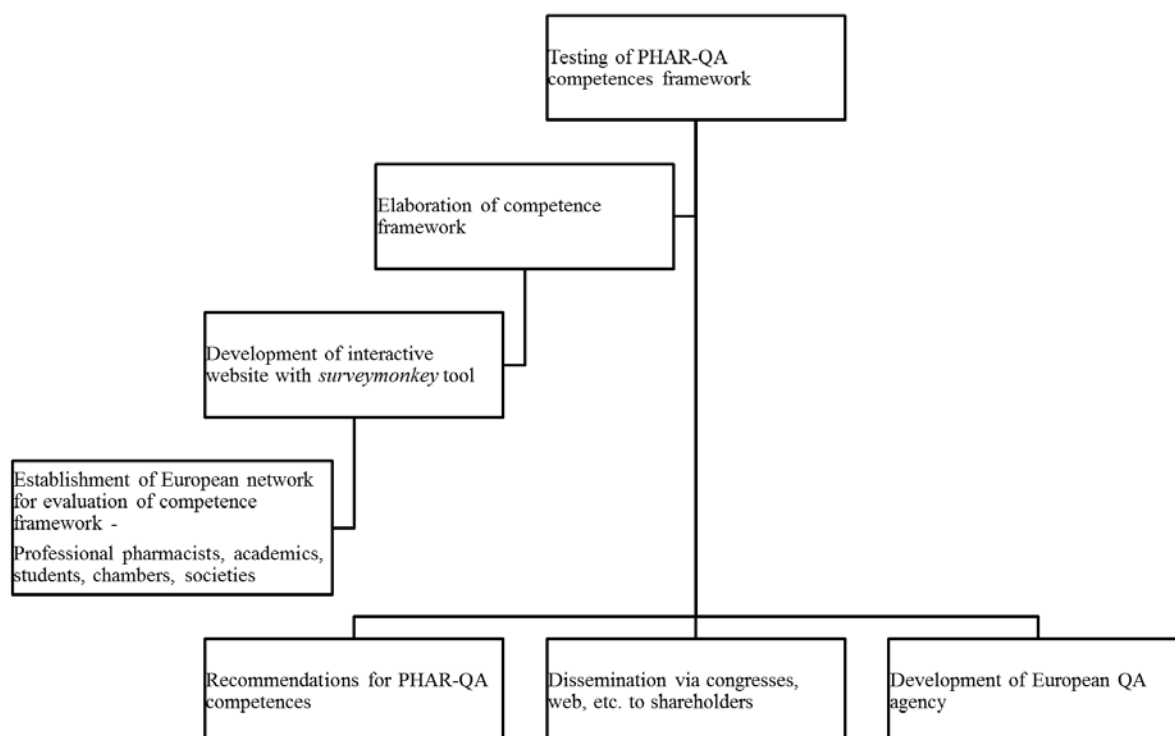
The project uses a modified Delphi approach[x]:

1. Initial questionnaire – round 1 questionnaire was produced by A. Sanchez-Pozo and D. Rekkas using various references[xi,xii,xiii,xiv,xv,xvi,xvii,xviii] together with comments from the other authors

2. Evaluation by small expert panel (the authors) – round 1 questionnaire was modified in 3 Delphi rounds, the panel providing rankings and comments on what was unclear, missing, or in duplicate, *etc.*, so producing the 4th version. Once terminology issues were resolved there was widespread consensus on the different visions of pharmacy practice.

3. The 4th version of questionnaire consisting of 68 propositions for competences for pharmacy practice in 13 groups was submitted to a large expert panel (academics, students, and pharmacists from all areas of the profession (n=1,245)

4. The analysis of ranking data and comments on the 4th version, gathered using a *surveymonkey* questionnaire[xix], will lead to the production of the 5th version. The ranking data and comments on the 4th version are presented in this article. The *surveymonkey* questionnaire (figure 3) was available online from 14/2/2014 through 1/11/2014 *i.e.* 8.5 months. Such a long period was required in order to achieve (a modicum of) balance in the distribution of respondents (by profession, country, age…).

5. A second evaluation by the large expert panel will lead to the production of the final QA framework

Figure 3. The introductory page of the *surveymonkey* questionnaire.

There were 6 questions on the profile of the respondent:
1. Age
2. Country of residence
3. Current occupation: community, hospital or industrial pharmacist, pharmacist working on other area, student, academic
4. If you are a student, what is your year of enrolment?
5. If you are a professional (licensed practitioner, academic staff...), how long have you been practising?
6. Job title

There were 13 questions in 2 major domains with a total in all of 68 competences (see annex). Questions in groups 7 through 11 were concerned with personal competences and in groups 12 through 19 with patient care competences:

Personal competences
7. Learning and knowledge.
8. Values.
9. Communication and organizational skills.
10. Knowledge of different areas of the science of medicines.
11. Understanding of industrial pharmacy.

Patient care competences

12. Patient consultation and assessment.
13. Need for drug treatment.
14. Drug interactions.
15. Provision of drug product.
16. Patient education.
17. Provision of information and service.
18. Monitoring of drug therapy.
19. Evaluation of outcomes.

Respondents were asked to rank the proposals for competences with a Likert scale:

1. Not important = Can be ignored.
2. Quite important =Valuable but not obligatory.
3. Very important = Obligatory with exceptions depending upon field of pharmacy practice.
4. Essential = Obligatory.

This even-numbered scale was the same as that used by MEDINE. A pilot MEDINE experiment using a 5-point Likert scale, with a rank 3 = "neutral", showed that respondents tended to "opt out" by replying with rank 3 throughout (M.T. Ross and A. Cummins, MEDINE, personal communication, 2012).

Respondents had the possibility to opt for "I cannot rank this competence" or to leave the answer blank. Finally, they could add their comments.

The distribution of surveymonkey to potential respondents was organised by the PHAR-QA regional directors, *viz* for northern Europe J. Hirvonen, for eastern B. Bozic, for western D. Rekkas, and for southern: A. Sanchez-Pozo. The stakeholders (EPSA, PGEU, EAHP, and EIPG) also distributed the questionnaire to their members. More than one-off emailing was required to obtain some balance in distribution of the profiles of the respondents; numerous telephone contacts and personal contacts were also made. The numbers of respondents snowballed through individual, local contacts.

Results are presented here in the form of scores based on the methodology used in MEDINE2[xx]: score = (frequency rank 3 + frequency rank 4) as % total.

For example: data for community pharmacists ranking competence number 1:

Rank	Frequency
1	3
2	121
3	480
4	622

Total = 1,226 $f3 + f4 = 1,102$ Score = (1,102/1,226) x 100 = 90%

Scores give more granularity and a better pictorial representation; they represent "obligatory" rankings. A comparison with medians and means is given in the annex.

Statistical analysis.

Data presented in this paper are for:
- Overall rankings by 6 groups of respondents

- Comparisons of ranking by community pharmacists with that of the 5 other professional groups of respondents

Differences between rankings of competences or between rankings by different categories of respondents were determined by the chi-square test (confidence level 95%).

Estimated sample size was calculated with a 95% confidence interval and a 10% error[xxi]. The confidence interval (also called margin of error) is the "plus-or-minus". The confidence level is a measure of confidence. It is expressed as a percentage and represents how often the true percentage of the population who would pick an answer lies within the confidence interval. Most researchers use the 95% confidence level. For example: for community pharmacists (estimated population size: 400,000, 95% confidence interval and 10% confidence interval (margin of error)), the minimal sample size is 97. With a sample of 258 out of 400,000, a confidence level of 95% and a 10% error, for a score of 90% the confidence interval is 4, thus giving a score range of 86%-94%.

Results.

There were 1,613 entries in the *surveymonkey* questionnaire. Of these 1,613, 1,245 (77%) went beyond the profile description questions (first 6) and ranked the competence ranking questions (groups 7 through 19).

The numbers of the respondents in the 6 groups are given in table 1. The relative size of the professional groups was: students > community pharmacists = academics > hospital pharmacists = industrial pharmacists > pharmacists working in other professions. The "other" group included pharmacists working in government agencies (regulatory affairs…), in wholesale, in marketing and sales, *etc*. In all groups sample sizes were well above calculated minimal sampling size (table 1).

Table 1. Respondents by professional group, and sampling rates.

Professional groups	Number of respondents	%	Estimated European population (x 1,000)	Calculated minimal sample size (95% confidence level, 10% error)
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

The ranking of the majority of the 1,245 respondents (rank 3 + rank 4: 69.7%, table 2) showed that the respondents considered the proposed competences were obligatory for pharmacy practice. 12.3 % considered that competences were not important (rank 1), could not rank or left blanks. 9.4% either could not rank or left blanks.

Table 2. Global ranking for entire population of respondents, n = 1,245.

Rank	Number	%
1	2,470	2.9
2	14,933	17.6
3	30,132	35.6
4	29,194	34.1
Cannot rank	1,764	2.1
Blank	6,167	7.3
Theoretical total	*= 68 x 1,245 = 84,660*	*100%*

Figure 2 shows the ranking of the 68 competences by the 6 groups of respondents. There was overall agreement between groups. Scores greater than 90% were observed for competences in groups 7, 8, 9, 10, 14, 15 and 17, and scores less than 50% for competences in groups 7, 9, 10, 11 and 12. These results indicate that some competences are not considered important although the group in general it is.

Figure 2. Ranking of the 68 competences by the 6 groups of respondents (community pharmacists: green, industrial pharmacists: red, hospital pharmacists: orange, others: purple, students; blue, academics: yellow). Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % score (0 through 100).
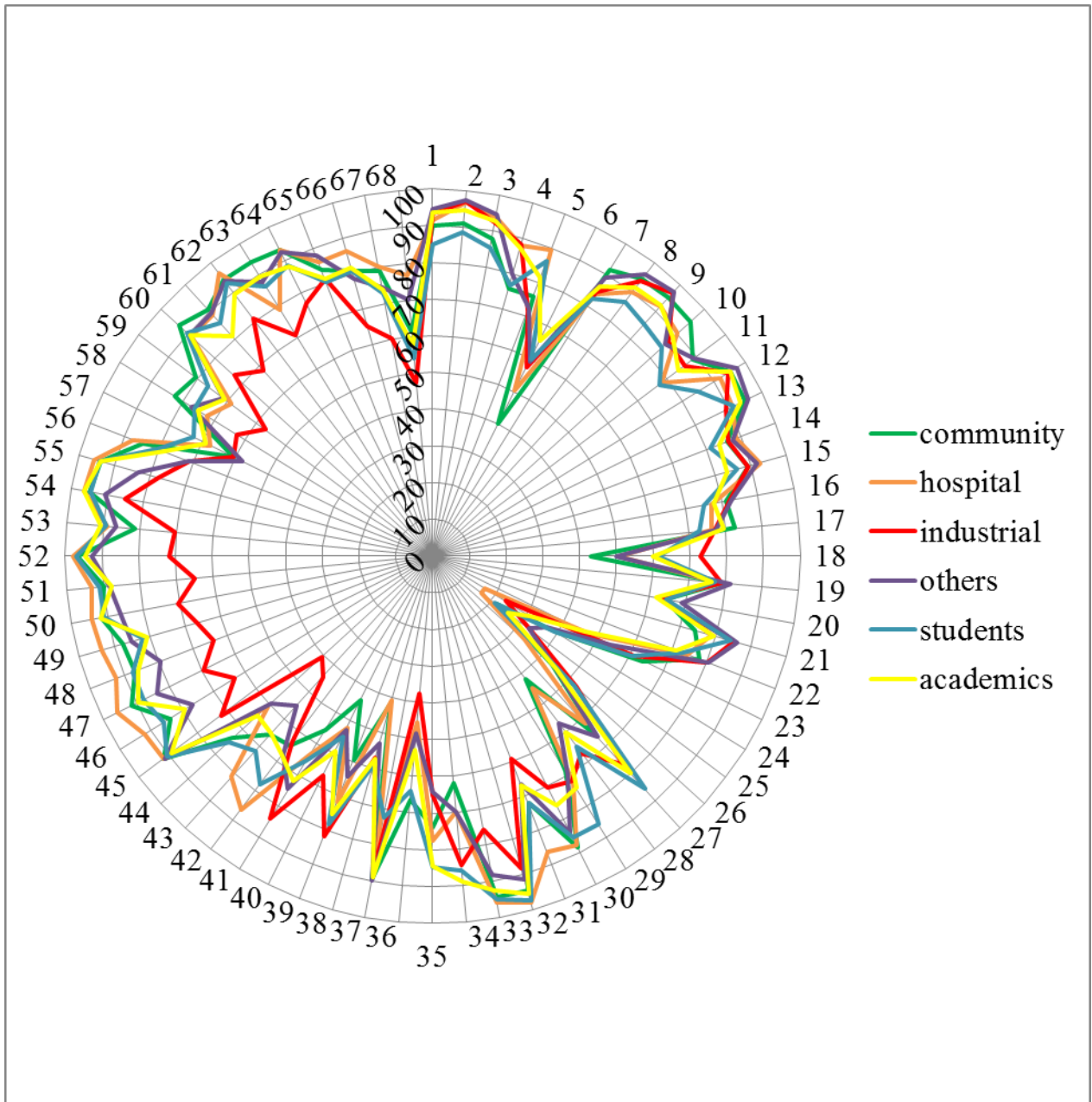
Comparisons between community pharmacists and other groups are given below.

Figure 3 shows that there was little difference in the rankings of hospital and community pharmacists. Ranking for competences 23, 24, 36 and 63 was community > hospital, and for competences 42, 43 and 68 community < hospital.

Figure 3. Comparisons of rankings by hospital (orange) and community pharmacists (green).
Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % scores (0 through 100).
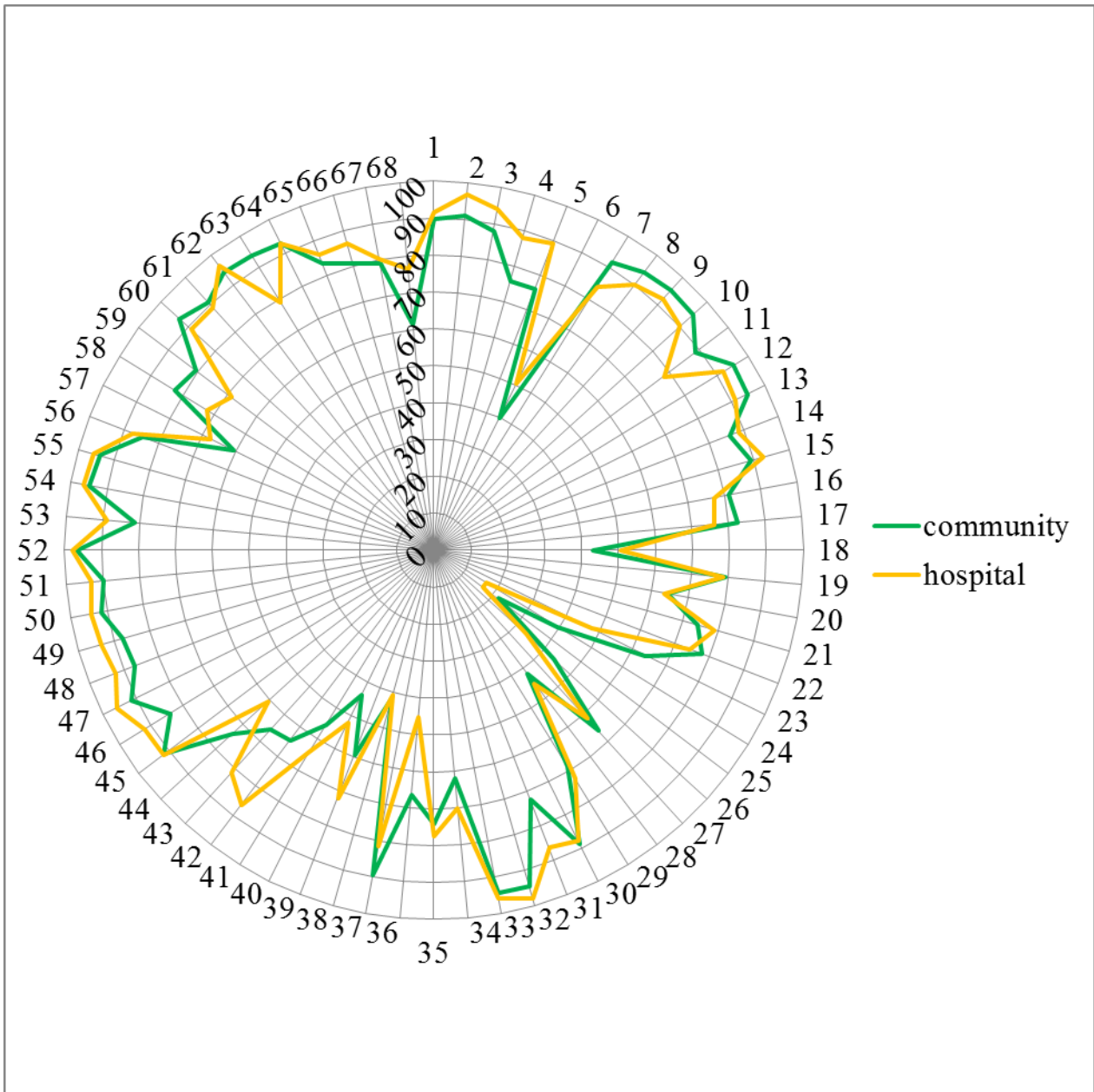
Figure 4 shows that industrial pharmacists scored differently from community pharmacists. Ranking for competences 24, 30, 33, 36, 43-52, 55, 58, 60, 61, 63, 64, 66 and 67 was community > industrial, and for competences 6, 18, 28, 34 and 38-41 community < industrial.

Figure 4. Comparisons of rankings by industrial (red) and community pharmacists (green).
Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % score (0 through 100).
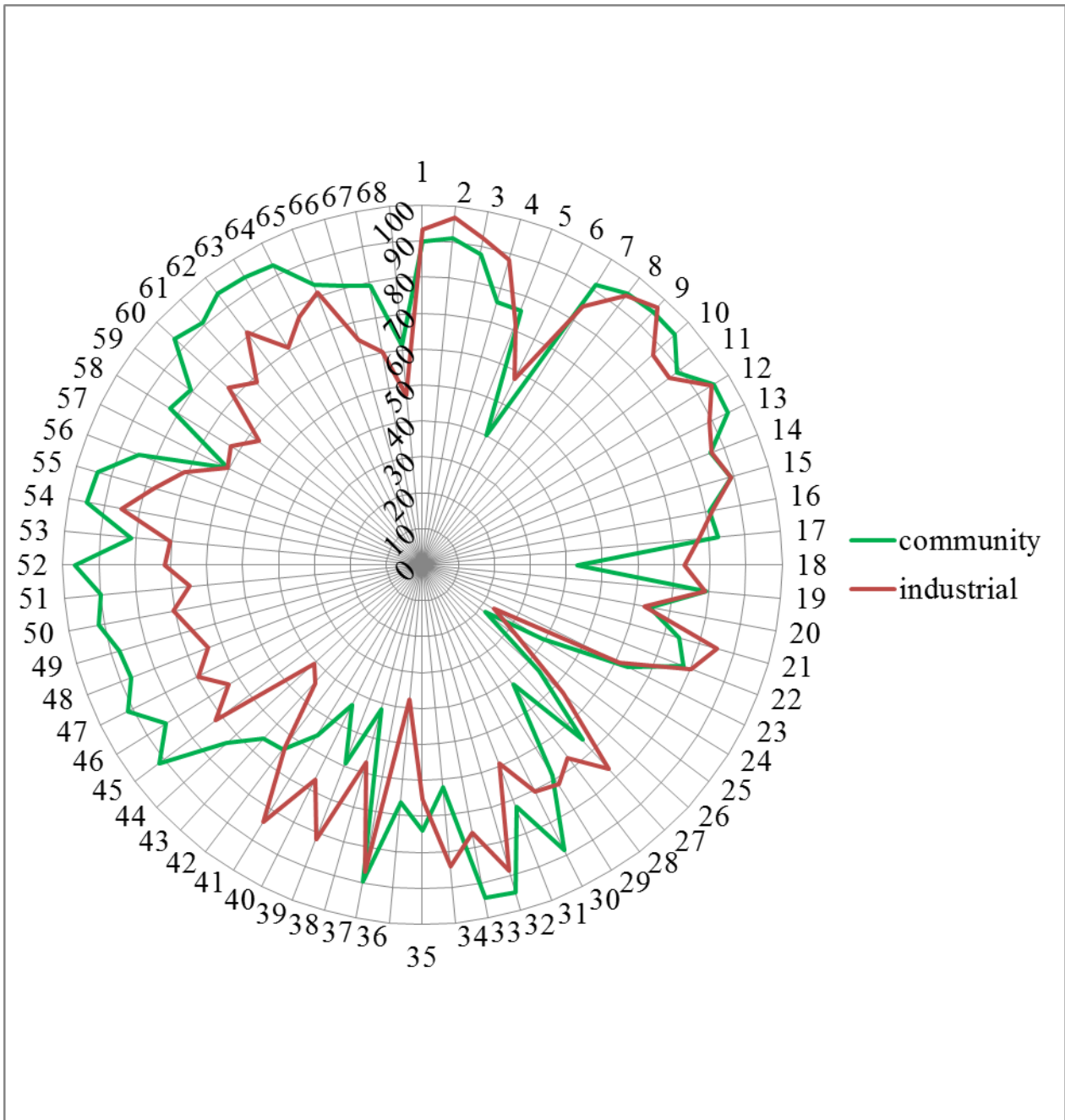
Figure 5 shows that pharmacists working in professions other than community, industrial or hospital pharmacy gave scores similar to those of community pharmacists. Ranking for competence 36 was community > industrial, and for competences 6, 28 and 41 community < industrial.

Figure 5. Comparisons of rankings by pharmacists working in other professions (purple) and community pharmacists (green).
Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % score (0 through 100).
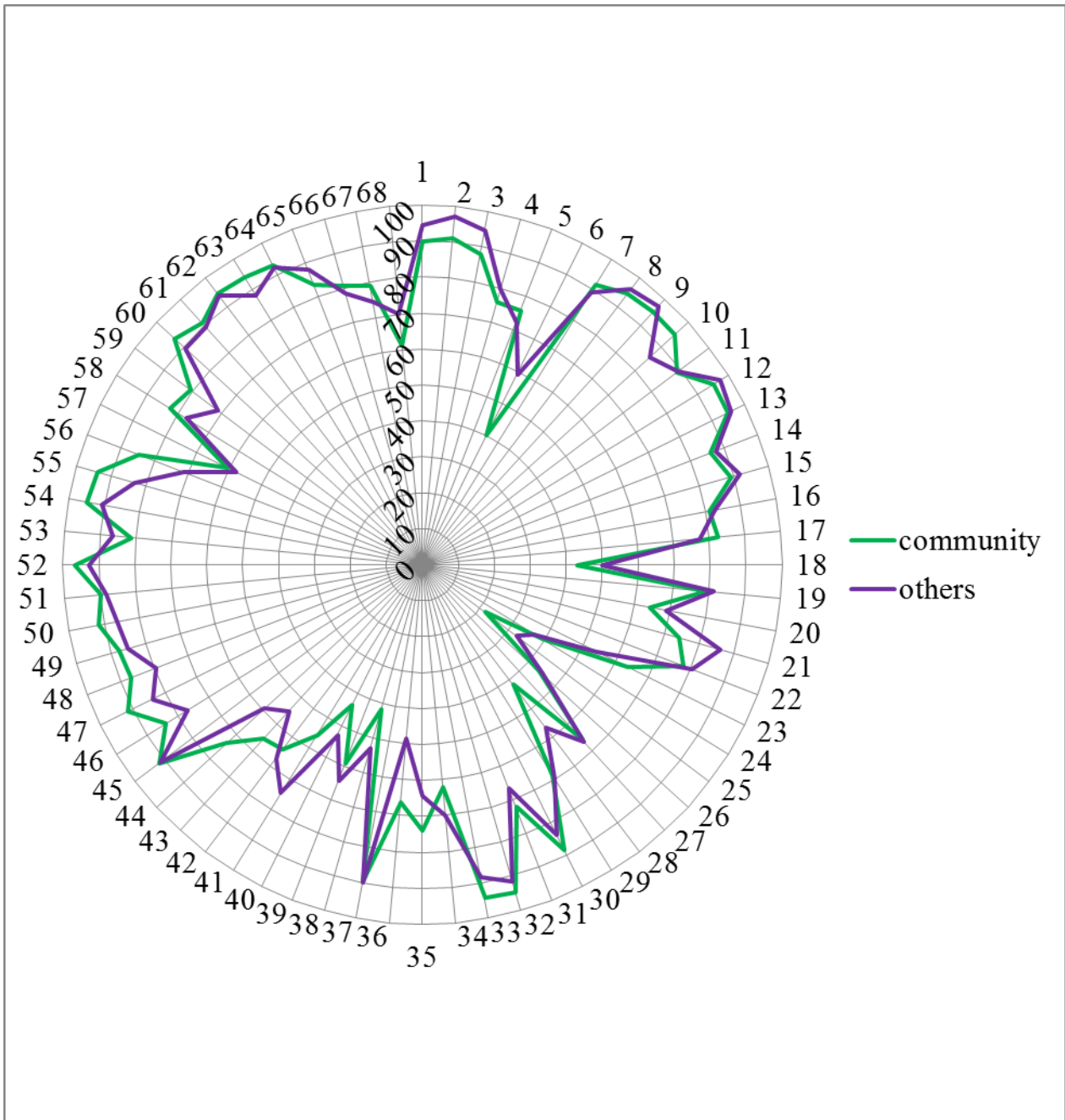
Figure 6 shows that students often gave higher scores than community pharmacists. Ranking for competence 37 was community > students, and for competences 6, 18, 27-29, 34, 38 and 39 community < students.

Figure 6. Comparisons of rankings by students (blue) and community pharmacists (green).
Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % scores (0 through 100).
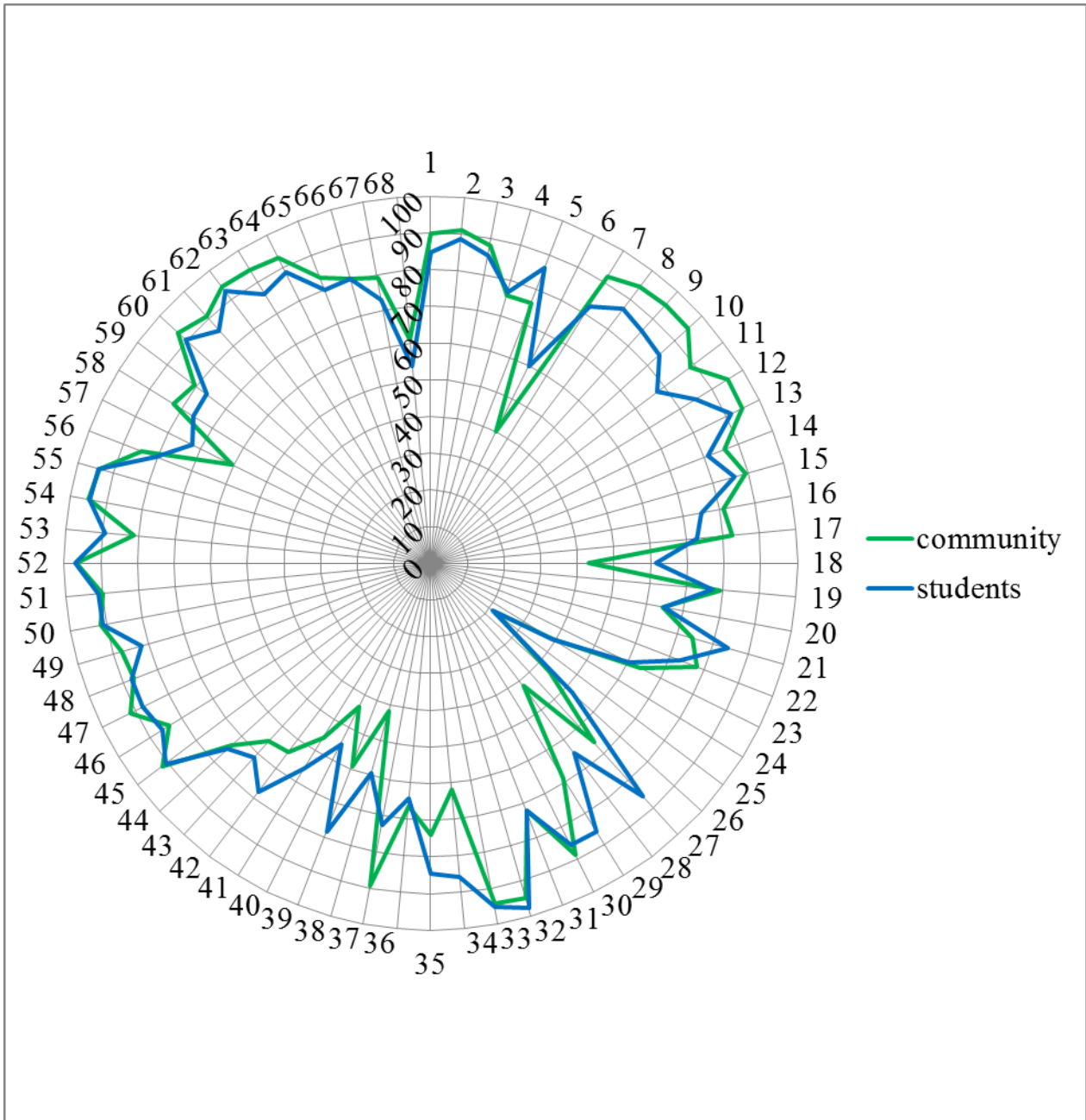
Academics often scored higher than community pharmacists. Figure 8 shows that ranking for competence 23 was community > academics, and for competences 6, 18, 28, 34 and 38-41 community < academics.

Figure 8. Comparisons of rankings by academics (yellow) and community pharmacists (green). Numbers on the circumference refer to competences (1 through 68). Numbers on the vertical axis refer to % score (0 through 100).
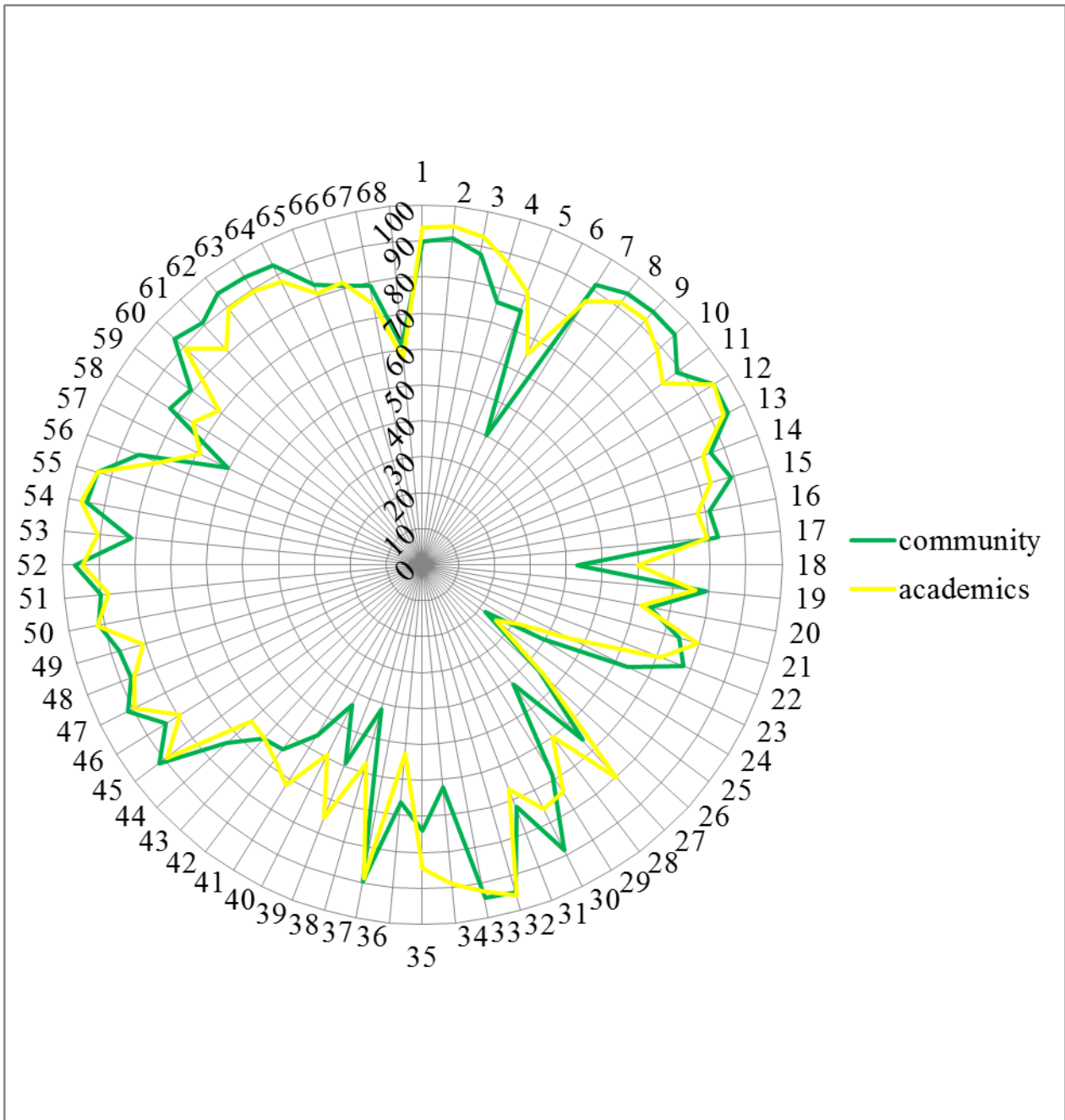
The *surveymonkey* text analysis tool allows the frequency of key words and key terms to be determined thus illustrating the relative importance of the terms. In Figure 10 the font size is proportional to number of citations.

Figure 10. The *surveymonkey* text analysis tool (example for profile question group 10: Personal competences: learning and knowledge).

Comments that occurred frequently included:

- Target audience
    - "…refer to daily work in a community pharmacy"
    - "focus on practising pharmacists"
    - "for specialists"
    - "Not really the role of primary care, but important for some knowledge and awareness."
    - "Things that every pharmacist should be familiar with and even more in patient care fields, as in hospital or community pharmacy."
    - "For community pharmacists the above are essential, but for other pharmacists less."
    - "Can imagine it to be important in hospitals..."
    - "For clinical and hospital pharmacists."
- University level
    - "Competences recorded as "very important" cannot be fully obtained on pre-graduate level and also postgraduate training is needed."
    - "Competence 66 cannot be fully achieved during the pre-graduate training and requires also postgraduate education."
- Difficulties in application
    - "Are subject areas professional competences?"
    - "If not commercially available I would contend that we should change what we are prescribing. I do not believe in 'specials' which in the UK are abused and contribute hugely and inappropriately to our drugs bill."
    - "There are always people who need some special drug which is not commercially available."
    - "Not sure how most pharmacists would be able to manufacture?"
    - "General information on diet or exercise is important but the specific recommendations for the patient should be made by the experts in those areas (f. ex. dietician or physiotherapist)."
    - "Information should be basically provided by doctors, before pharmacists."

- o "I am not sure that pharmacists know current clinical guidelines. If medicine is prescribed we give it to patient."
- Suggestions for further inclusions, *etc*.
  - o "Acquire other competencies for new services like vaccinations in the pharmacy, screening tests (colon cancer, heart disease, COPD, *etc*.) Public Health services in general, NCD (non-communicable diseases)"
  - o "Services like vaccinations, screenings (colon cancer, kidney, COPD, Heart disease, etc.) and others should become essential in the curriculum in order to be able to perform the services in the future."
  - o "Pharmacist should also provide information about medical devices and other items available in the pharmacy."
  - o "The knowledge on drug therapies and reactions on failing therapies are core fields for pharmacists."
  - o "Radio-pharmacy"
- Technical difficulties with the survey
  - o "In my browser section 6 appears blank"
  - o "Never ask 2 things in the same question…"
  - o "No possibility of open-ended questions…"
- Language difficulties
  - o "Too complicated for my simple English…"
  - o "I cannot rank this competence for I don't fully understand the meaning of the competence."

Discussion.

The results show that competences in the areas of "drug interactions", "need for drug treatment" and "provision of information and service" were ranked highest whereas those in the areas of "ability to design and conduct research" and "development and production of medicines" were ranked lower. For the latter two 1/6 categories – industrial pharmacists – ranked higher than the other 5 groups. The impact of the professional group status on the ranking will be dealt with in a future paper.

Another question that scored low was that concerned with the subject area "physics". This, however, is not a competence as such. They were included as they are part of the EU directive on the sectoral profession of pharmacy[xi]. The question to be asked here was probably "adequate knowledge of the following areas (physics…) in the science of medicines is necessary to support pharmaceutical practice" but once again one is not dealing with competences for practice. Perhaps the best way to consider this is to take the teaching of certain subject areas as an essential, integral part of the acquirement of given competences for practice.

This PHAR-QA survey is based on the PHARMINE survey[xxii] the main characteristic of which was the fact that it was based on competences rather than on subject areas. The main difference of the PHAR-QA with the PHARMINE survey is that the former is shorter and more concise. Furthermore the use of the Delphi process ensured that the PHAR-QA framework is consensual and harmonized. This was done by using surveymonkey IT with extensive, random, snowballing recruitment. The recruitment was not entirely random as it was distributed by PHAR-QA regional directors and stakeholders – all pharmaceutical in nature – and was thus aimed at a specific population. The survey aimed at balance throughout European countries, professional and age groups. This was largely attained although some groups (e.g. students) and some countries (e.g. Germany) were over-represented in terms of the number of actual respondents compared to the number of potential respondents.

There was a relatively large number of respondents who did not go beyond the profile questions (23%). These were mainly students and this may be related to issues with the English language.

The number of respondents (1,245) far exceeded the sample size number of 100 respondents estimated for a total population of 632,000 potential respondents. As the numbers in all 6 categories are large this will allow inter- and intra-group comparisons. In this article are presented comparisons between ranking by community pharmacists and the ranking by the other 5 professional groups. Many other comparisons are possible such as 1st year students versus 5th / 6th year students, academics with students, different age groups, *etc*. These will be the subject of further publications. One particular comparison is of great interest: that concerning the ranking in different countries. Ever since the pioneering work of Bourlioux and the founder members of the EAFP[xxiii] there has been a move to harmonization of pharmacy education throughout the EU driven partly by the publication of EU directives on the sectoral profession of pharmacy[xxiv]. It will be interesting to know whether professionals in different member states have (or have not) similar views on the importance of the different competences for practice.

The question can be asked as to whether the respondents were suitably armed to reply to the questionnaire. It is unfortunate that 23% of respondents did not go beyond the first 6 profile questions. However of the 1,245 respondents x 68 questions = 84,660 potential replies there were "only" 2.1% "cannot rank" and 7.3% blanks.

Regarding statistics, as the ordinal data of the Likert scale has only 4 units (1, 2, 3 or 4), the score was an attempt to introduce more granularity into the results than can be obtained with the use of medians. Scores measure the degree to which competences are considered "obligatory" (ranks 3 and 4). Although this adds granularity it does not convert the ordinal data into ratio data.

Conclusions.

The results show that competences in the areas of "drug interactions", "need for drug treatment" and "provision of information and service" were ranked highest whereas those in the areas of "ability to design and conduct research" and "development and production of medicines" were ranked lower.

This PHAR-QA framework does not, however, replace member state law or the EU directive on qualifications for the sectoral profession of pharmacy. The PHAR-QA framework simply represents the consensual opinion of several hundred European pharmacy professionals, academics and students.

Perspectives.

The project started in October 2012 and will finish in March 2016, thus it is now entering its critical, final stage.

The task at hand now is to produce a 5th version of the competence framework taking into account:

- The ranking of the 4th version of the framework presented in this paper
- The comments of the respondents, namely
  - Need for simplified construction of questions
  - Attention given to use of easy to understand English
- The need to ask 2 more questions, namely
  - At which higher education level should competences be taught –bachelor, master or post-registration (continuous professional development)?
  - Did we miss anything? Suggestions for competences to be included (open-ended question)

Ranking data for competences (n=1,245).

	Number of competence	Mean ranking	Median ranking	Score 3+4%
7. Personal competences: learning and knowledge.				
1. Ability to identify learning needs and to learn independently (including continuous professional development (CPD)).	1	3.4	4	89.89
2. Analysis: ability to apply logic to problem solving, evaluating pros and cons and following up on the solution found.	2	3.5	4	92.70
3. Synthesis: capacity to gather and critically appraise relevant knowledge and to summarise the key points.	3	3.4	4	89.70
4. Capacity to evaluate scientific data in line with current scientific and technological knowledge.	4	3.2	3	81.38
5. Ability to interpret preclinical and clinical evidence-based medical science and apply the knowledge to pharmaceutical practice.	5	3.2	3	81.02
6. Ability to design and conduct research using appropriate methodology.	6	2.7	3	55.47
7. Ability to maintain current knowledge of relevant legislation and codes of pharmacy practice.	7	3.3	3	85.96
8. Personal competences: values.				
1. Demonstrate a professional approach to tasks and human relations.	8	3.4	4	91.09
2. Demonstrate the ability to maintain confidentiality.	9	3.5	4	91.74
3. Take full personal responsibility for patient care and other aspects of one's practice.	10	3.4	4	88.43
4. Inspire the confidence of others in one's actions and advice.	11	3.2	3	82.84
5. Demonstrate high ethical standards.	12	3.6	4	91.88
9. Personal competences: communication and organisational skills.				
1. Effective communication skills (both orally and written).	13	3.4	4	92.60
2. Effective use of information technology.	14	3.1	3	84.63
3. Ability to work effectively as part of a team.	15	3.3	3	87.76
4. Ability to identify and implement legal and professional requirements relating to employment (e.g. for pharmacy technicians) and to safety in the	16	3.1	3	78.43

workplace.				
5. Ability to contribute to the learning and training of staff.	17	3.0	3	77.46
6. Ability to design and manage the development processes in the production of medicines.	18	2.7	3	56.59
7. Ability to identify and manage risk and quality of service issues.	19	3.1	3	77.99
8. Ability to identify the need for new services.	20	2.8	3	64.00
9. Ability to communicate in English and/or locally relevant languages.	21	3.2	3	80.67
10. Ability to evaluate issues related to quality of service.	22	2.9	3	75.07
11. Ability to negotiate, understand a business environment and develop entrepreneurship.	23	2.7	3	56.62
10. Personal competences: knowledge of different areas of the science of medicines.				
1. Plant and animal biology.	24	2.2	2	32.87
2. Physics.	25	2.0	2	23.65
3. General and inorganic chemistry.	26	2.5	2	46.50
4. Organic and medicinal/pharmaceutical chemistry.	27	3.1	3	75.26
5. Analytical chemistry.	28	2.7	3	56.29
6. General and applied biochemistry (medicinal and clinical).	29	3.0	3	75.74
7. Anatomy and physiology; medical terminology.	30	3.2	3	82.86
8. Microbiology.	31	2.9	3	71.21
9. Pharmacology including pharmacokinetics.	32	3.7	4	95.21
10. Pharmacotherapy and pharmaco-epidemiology.	33	3.6	4	91.98
11. Pharmaceutical technology including analyses of medicinal products.	34	3.2	3	78.24
12. Toxicology.	35	3.1	3	77.92
13. Pharmacognosy.	36	2.7	3	56.07
14. Legislation and professional ethics.	37	3.3	3	83.13
11. Personal competences: understanding of industrial pharmacy.				
1. Current knowledge of design, synthesis, isolation, characterisation and biological evaluation of active substances.	38	2.6	3	52.39
2. Current knowledge of good manufacturing practice (GMP) and of good laboratory practice	39	3.0	3	72.60

(GLP).				
3. Current knowledge of European directives on qualified persons (QPs).	40	2.6	3	54.44
4. Current knowledge of drug registration, licensing and marketing.	41	2.9	3	67.36
5. Current knowledge of good clinical practice (GCP).	42	3.0	3	71.96
12. Patient care competences: patient consultation and assessment.				
1. Ability to perform and interpret medical laboratory tests.	43	2.9	3	66.46
2. Ability to perform appropriate diagnostic or physiological tests to inform clinical decision making e.g. measurement of blood pressure.	44	2.8	3	66.27
3. Ability to recognise when referral to another member of the healthcare team is needed because a potential clinical problem is identified (pharmaceutical, medical, psychological or social).	45	3.4	4	88.86
13. Patient care competences: need for drug treatment.				
1. Retrieval and interpretation of relevant information on the patient's clinical background.	46	3.2	3	82.23
2. Retrieval and interpretation of an accurate and comprehensive drug history if and when required.	47	3.4	4	87.83
3. Identification of non-adherence and implementation of appropriate patient intervention.	48	3.3	3	84.80
4. Ability to advise to physicians and - in some cases – prescribe medication.	49	3.2	3	83.10
14. Patient care competences: drug interactions.				
1. Identification, understanding and prioritisation of drug-drug interactions at a molecular level (e.g. use of codeine with paracetamol).	50	3.5	4	89.35
2. Identification, understanding, and prioritisation of drug-patient interactions, including those that preclude or require the use of a specific drug (e.g. trastuzumab for treatment of breast cancer in women with HER2 overexpression).	51	3.4	4	87.51
3. Identification, understanding, and prioritisation of drug-disease interactions (e.g. NSAIDs in heart failure).	52	3.6	4	93.61
15. Patient care competences: provision of drug				

product.				
1. Familiarity with the bio-pharmaceutical, pharmacodynamic and pharmacokinetic activity of a substance in the body.	53	3.3	3	85.62
2. Supply of appropriate medicines taking into account dose, correct formulation, concentration, administration route and timing.	54	3.6	4	94.03
3. Critical evaluation of the prescription to ensure that it is clinically appropriate and legal.	55	3.5	4	91.87
4. Familiarity with the supply chain of medicines and the ability to ensure timely flow of drug products to the patient.	56	3.1	3	80.26
5. Ability to manufacture medicinal products that are not commercially available.	57	2.9	3	66.57
16. Patient care competences: patient education.				
1. Promotion of public health in collaboration with other actors in the healthcare system.	58	3.1	3	75.53
2. Provision of appropriate lifestyle advice on smoking, obesity, etc.	59	3.0	3	73.07
3. Provision of appropriate advice on resistance to antibiotics and similar public health issues.	60	3.3	3	88.66
17. Patient care competences: provision of information and service.				
1. Ability to use effective consultations to identify the patient's need for information.	61	3.2	3	84.84
2. Provision of accurate and appropriate information on prescription medicines.	62	3.5	4	91.81
3. Provision of informed support for patients in selection and use of non-prescription medicines for minor ailments (e.g. cough remedies...).	63	3.4	4	86.09
18. Patient care competences: monitoring of drug therapy.				
1. Identification and prioritisation of problems in the management of medicines in a timely manner and with sufficient efficacy to ensure patient safety.	64	3.3	3	89.01
2. Ability to monitor and report to all concerned in a timely manner, and in accordance with current regulatory guidelines on Good Pharmacovigilance Practices (GVPs), Adverse Drug Events and Reactions (ADEs and ADRs).	65	3.2	3	82.35
3. Undertaking of a critical evaluation of prescribed medicines to confirm that current clinical	66	3.1	3	79.88

guidelines are appropriately applied.				
19. Patient care competences: evaluation of outcomes.				
1. Assessment of outcomes on the monitoring of patient care and follow-up interventions.	67	3.0	3	74.14
2. Evaluation of cost effectiveness of treatment.	68	2.7	3	59.60

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