

Co-funded by the
Erasmus+ Programme
of the European Union



ProInCa

**Promoting the Innovation Capacity of Higher Education in Nursing during
Health Services' Transition**

D2.1.1

Report of the requirement analysis

WP2.1 Center of Nursing Excellence



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Disclaimer:

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Summary

The aim of ProInCa Work Package 2.1 is the development of mechanisms for collaboration and knowledge sharing within the Centre of Nursing Excellence between academic national and international nursing community (universities and other educational institutions) and society. These mechanisms involve for example the creation of an e-platform, formalized national and international networks and working groups.

The use of e-platforms in international cooperation in nursing science contributes to improvement of nursing practice and the increase of evidence-based interventions in health care. In this WP2.1 the e-platform will be designed, developed, tested and disseminated. The e-platform is the heart of the Centre of Nursing Excellence (CNE). CNE will focus on the transfer of research outcomes into nursing practice and the research ideas to the universities for research and educational purposes. Part of the needsanalysis a literature review is performed and a masterclass about best practices is organized for the projectpartners in April 2018. The researchfindings and the analysis and discussion of best practices resulted in a list of requirements for the development of the e-platform. The list will be verified by a Delphi study.



1 Literature review

Part of the needs and requirement analysis is to conduct a literature review. The aim of the review is to determine what requirements are essential for an online CNE platform which is to be developed. The research question of the literature review is:

“What requirements for open source software are essential for developments in nursing science and nursing research education”?

1.1 Method

Search strategy: international collaboration

The literature review had been conducted in an international collaboration of researchers from Hanze UAS (the Netherlands), AMU (Kazakhstan) and JAMK (Finland). Communication was realized by email contact, skype meetings, and as well as face-to-face during a masterclass meeting in the Netherlands.

A series of search terms for searching electronic databases was developed, as presented in table 1.

Table 1: Search terms*)

Nurses	Research / Science	Education / learning	Online platform / environment
Nursing	Research	Education	Online
Nurses	Science	Learning	Internet
	Scientific	Curriculum	Web
Nursing students	Evidence Based	Taining	E / e (-) platform
Graduate nurses	Evidence-based	Teaching	Tool
Undergraduate nurses	Research education	Continiung learning	Environment
	Academic	Continuous learning	Game (-) based

Professional nurses		Distance learning	Ambient
Nursing professionals		Virtual learning	Virtual
Clinical nurses		Online collaborative learning	Computer
Pre-registration nurse		Distance education	Network
Post-registration nurse		Distributed learning	Software
		Program(me)	Mobile
University nurse student		Course	Electronic
New nurses		Teaching format	Open source
Staff nurses		Module	Portal
College nurse student		Learning style	System
			Digital
			Informatics
			Multimedia

*)non-exhaustive

From these search terms, different search strings were developed to search in a variety of electronic databases, by different researchers that were part of the international collaboration. Since among academics as well as among information scientists and technicians, there is no strong consensus on the content and meaning of these different search terms yet, combinations of search terms as in table 1 did not generate satisfactory search results. Therefore the searches were conducted containing only part of the terms as presented in table 1. These different searches were conducted between 10 February - 12 April 2018, and are presented in table 2. The search strategies included filtering the results to be in the English or Russian language, would concern humans and were published in academic journals.

Table 2: Searches

Electronic database	Search string	Number of results
IEEE	e platform AND nursing AND research AND education	118
TRIP	e-platform AND nursing AND research AND practice	4
EBSCO	(eplatform OR portal) AND “nursing education”	10
ABI	(eplatform OR portal) AND (healthcare OR nursing)	15
Pubmed search 1 with MeSH terms	(evidence-based nursing (MeSH) AND (computer communication networks(MeSH)))	81
Pubmed search 2	(nursing OR nurses) AND (virtual learning environment)	88
Pubmed search 3	(evidence-based nursing OR nursing) AND (computer communication networks OR virtual learning environment)	47
Cinahl plus with full text search 1	nursing AND evidence-based AND online	175
Cinahl plus with full text search 2	nursing AND (research OR evidence-based) AND education AND online	223
Cinahl plus with full text search 3	(nursing OR nurses) AND (research OR evidence-based) AND (education OR learning) AND (online OR internet)	292

Inclusion criteria

Included studies should concern nursing students or clinical nurses who participated in an online platform or learning programme concerning research or evidence-based practice. The efficacy or impact of the online platform or programme has been evaluated by an intervention by means of an evaluation instrument, or the platform’s development process has been evaluated. The students’ perceptions, experiences or opinions should be part of the evaluation. The included studies should show a diversity in the country of origin of the study. A diversity in study design was also recommended. Subsequent inclusion criteria concerning participants, platform, intervention or study reports, are presented in table 3.

Table 3: Inclusion criteria

Concerning participants, platforms, interventions
Nursing students or clinical nurses
Online platform or programme
Intervention includes evaluation
Students’ perceptions included in study

Concerning study reports
Study report not older than 6 years
English or Russian language

After removing duplicates, screening on title and abstract, and further selection on inclusion criteria and the availability of full text, resulted in six relevant studies. In addition, the related articles technique was applied which generated another two relevant articles.

1.2 Results

The search strategy generated eight studies, which are presented in table 4.

Table 4: Included studies and keywords

1	Davidson, SJ. et al. Teaching EBP Using Game-Based Learning: Improving the Student Experience. Worldviews on Evidence-Based Nursing , 2016, 13:4, 285-293. <i>Nurse education, evidence-based teaching, game-based learning, online courses, teaching EBP</i>
2	Du, S. et al. Web-based distance learning for nurse education: a systematic review. International Nursing Review , 2013, 60, 167-177. <i>Learning styles, continuing education, information technology</i>
3	Gagnon, J. et al. Adaptation and Evaluation of Online Self-learning Modules to Teach Critical Appraisal and Evidence-Based Practice in nursing. Computers, Informatics, Nursing , 2015, 7, 285-294. <i>Continuing education, critical appraisal, evidence-based nursing practice, international collaboration, online self-learning</i>
4	Karaman, S. et al. Evaluation of an online continuing education program from the perspective of new graduate nurses. Nurse Education Today , 2014, 34, 836-841. <i>Nurse education, distance education, online education, continuing education, program evaluation</i>
5	Kowitlawakul, Y. et al. Development of an e-Learning Research Module Using Multimedia Instruction Approach. Computers, Informatics, Nursing , 2017, 3, 158-166. <i>E-learning, instructional technology, multimedia, nursing program, research module</i>
6	League, K. et al. Increasing Nurses' Access to Evidence Through a Web-Based Resource. Journal of Nursing Administration , 2012, 42:11, 531-535.
7	McIntyre M. et al. A critical Analysis of Online Nursing Education: Balancing Optimistic and Cautionary Perspectives. Canadian Journal of Nursing Research , 2013, 45:1, 36-53. <i>Distance education, informatics, nursing education, technology</i>
8	Seixas, CA. et al. Usability Assessment of Moodle by Brazilian and Portuguese Nursing Students. Computer, Informatics, Nursing , 2016, 6, 266-271. <i>Distance education, nursing, urinary retention</i>



Design and methodological appraisal of included studies

Three of the included studies had a cross-sectional design, two were qualitative, two pre-post studies, and one study was a systematic review of randomized controlled trials, as presented in table 5. The evidence level was graded according to the Oxford Centre for Evidence-based Medicine. The methodological quality appraisal was graded according to the Joanna Briggs Institute checklists. The methodological quality of all included studies was good to excellent. In one cross-sectional study, excellence was achieved since confounding factors were addressed. Excellence was also achieved in one qualitative study by addressing the researchers' roles and possible influence of study results.

Table 5: Methodological quality appraisal of included studies

Study	Design	Evidence grade*	Quality score**	Quality appraisal	Quality level
1. Davidson, S.J. et al.	Cross-sectional Study	B	6/8		Good
2. Du, S. et al.	Systematic Review of RCTs	A	10/11		Good
3. Gagnon, J. et al.	Pre-post study	B	8/9		Good
4. Karaman, S. et al.	Cross-sectional Study	B	6/8		Good
5. Kowitlawakul, Y. et al.	Qualitative study	D	8/10		Good
6. League, K. et al.	Pre-post study	B	8/9		Good
7. McIntyre, M. et al.	Qualitative study	D	10/10		Excellent
8. Seixas, C.A. et al.	Cross-sectional Study	B	8/8		Excellent

*Oxford Centre for Evidence-based Medicine, 2018

**Joanna Briggs Institute, 2018

Characteristics of included studies

Objectives were to evaluate, assess or discuss either the efficacy and impact, or the development of an online platform. Online platforms or programmes that were assessed in the studies, concern

two platforms, one website, and four nursing programmes / courses. One study was a systematic review on a variety of programmes. Participants were nurses or nursing students from Canada, China, Spain, Turkey, Singapore, United States, Portugal and Brazil. The intervention / evaluation tools were survey questions (Likert scale as well as open ended questions), SDLNRE questionnaire, narratives from focus group discussions and individual face-to-face or telephone interviews, or log records analysis. The characteristics of the included studies are presented in table 6.

Table 6: Characteristics of included studies

Study	Objective	Online platform / programme	Country / Participants/ Respondents	Intervention / evaluation instrument
1. Davidson, SJ. et al.	Describe the development and evaluation of game-based learning to better prepare nursing students to engage in EBP	3D Game Lab (= Quest-based learning platform)	Canada Undergraduate nursing students n=30	Survey 12 questions 1-5 pt. Likert scale Game platform analytics Thematic analysis of narratives (students' comments)
2. Du, S. et al.	Examine the efficacy of the web-based distance education for nursing students and employed nurses	RCT's on Web-based distance education as experimental teaching strategies	China 9 RCT's Nursing students and employed students	Web-based distance nursing education compared to traditional teaching or blank control
3. Gagnon, J. et al.	Evaluate online self-learning modules on critical appraisal skills to promote the use of research in clinical practice	InfoCritique Program (=Online self-learning course)	Canada & Spain Clinical nurses n=83 Quebec (36) and Basque country (47)	2 questionnaires (pre and post course) (SDLRNE and knowledge questionnaire) and 1 satisfaction questionnaire
4. Karaman, S. et al.	Evaluate the online continuing education program from the perspective of nurses	HELITAM Online bachelor completion degree in nursing (first online nursing program in Turkey)	Turkey Registered nurses n=2365	Survey 1-5 pt. Likert scale and open-ended questions
5. Kowitlawakul, Y. et al.	Discuss the development journey, piloting process, including the variety of evaluation perspectives	e-learning research project module using interactive multimedia	Singapore Master of Nursing students n=8 (2 focus groups of 4 students) Faculty members n=2	2 focus group sessions with semi-structured interview guide 2 individual interviews

6. League, K. et al	Describe the development and impact of a Web-based tool to improve nurses' access to evidence	Web-based tool (Web site) Launched 2009	United States Staff nurses 744 pretest 1164 posttest	Pretest (2008) and posttest (2010) online survey 1-4 pt. Likert scale
7. McIntyre, M. et al	Discuss how peer dynamics influence student learning in an online environment	Two online nursing programs	Canada 30 undergraduate and graduate nursing students	Individual face-to-face or telephone interviews (30) and Focus group interview (8 part.) Fieldnotes (reflexive journal)
8. Seixas, CA. et al	Assess the usability of a virtual learning environment for nursing students	Distance education platform (Moodle)	Portugal & Brazil Undergraduate and diploma nursing students (79) Brazilian (53) and Portuguese (26)	Questionnaire and log records analysis

Research findings

In all studies, the e-platform users' perceptions and experiences were assessed. These perceptions and experiences generated a list of requirements which could be classified into nine categories as presented below in table 7.

Table 7: Classification of requirements

Requirements – nine categories
Platform users or targets and scope
Platform structure and content
Educational content and materials
Knowledge acquisition and achievement of learning outcomes
Communication, interaction and feedback
Nursing skills
Usability
Management
Infrastructural and technological support

Platform users or targets and scope

All platforms and the content included addressed nursing students or clinical nurses, with the aim encouraging nurses to use evidence in their studies or in clinical practice. These platforms therefore

addressed a variety of users, varying from undergraduates, graduates, clinical nurses, or combinations of these targets.

In some studies it was relevant to distinguish between undergraduate and graduate nurses. Karaman for example explicitly stated that it is important to make clear what is the scope (Karaman, 2014). Students' levels are master's degree (MSN), bachelor or baccalaureate's degree (BSN), or the associate or diploma degree (AND) level (League, 2012). The studies of Davidson, Du, Seixas and Kowitlawakul addressed undergraduates; the latter on master's level (Kowitlawakul, 2017). Gagnon, Karaman, League, and Du addressed graduated or registered nurses. Not all platforms studied were outspoken in distinguishing the scope; some addressed a combination, by which different target groups participated in the study simultaneously. The study of McIntyre (2013) addressed undergraduate as well as graduate nurses.

Some platforms explicitly addressed clinical nurses, for whom different descriptions were used such as clinical nurses (Gagnon, 2015), registered nurses (Karaman, 2014), staff nurses (League, 2012) or employed students (Du, 2013). All studies targeted at clinical nurses were about nurses who had to use evidence or were interested in using evidence. Gagnon's study concerned "*clinical nurses who had basic knowledge of research and were interested in learning more about it*" (Gagnon, 2015). Karaman indicated that clinical registered nurses who are graduated as well, are obviously older, therefore referring to the category 'adult learners who graduated' (Karaman, 2014).

In some of the studies, access was limited to registered members of a specific learning community or collaboration. In League's (2012) study the website was available to employees within the organization. In others there was open access. All studies - nine RCTs - of Du's systematic review, had open access (Du, 2013). Engagement and dropout or withdrawal could be measured in all studies. One study reported withdrawal rates to be associated with the type of university level (Gagnon, 2015). Other studies did not show a connection between level and dropout or engagement.



In two studies the platform including a research course was also optionally accessible to nursing faculty members or staff (Kowitlawakul, 2017). In the study of Kowitlawakul (2017), two faculty members also were included in the study. Davidson suggests that educators should have access to the platform in order to exchange experiences. In Davidson's study (2016) this was realized by a guild site.

The scope of the platform is connected to the choice of language. In most platforms in the studies only one language was applied, which could be the users' language or English. Language must be agreed upon when developing a platform, according to Gagnon (2015).

Platform structure and content

Different types of platform formats filled with content were found in the studies. There were three platforms, one of which was a website, and there were four online nursing programmes. The systematic review of Du (2013) concerned nine studies where students had all open access to websites. In one study the website was called 'Evidence Based Practice and Nursing Research' (League, 2012). In Davidson's study (2016) the platform was a game-based platform. The Distance Education Platform in Seixas' study was Moodle (Seixas, 2016), which was also referred to as a Virtual Learning Environment (VLE).

The platform or websites are structured in a way to contain distance learning courses or modules. In some platforms they are called courses, in others they are called modules (Gagnon, 2015). Mooshak is one example of a series of nursing learning modules (Du, 2013).

The platform or website structures provide a-synchronous as well as synchronous tools. Tools include forum discussions, webinars, podcasts (McIntyre, 2013), or teleconferencing (Du, 2013). These tools may be included in the content of the courses or modules, or may be available apart from it. The content can be in text as well as in audio and video formats (Du, 2013). These formats may also include audio-visual presentations, graphics and animations, usually with multimedia and interactive elements (Kowitlawakul, 2017.) In game-based learning, such as in Davidson, visible milestones and badges play an important role (Davidson, 2016). Another tool is the personal digital assistant (PDA) (McIntyre, 2013).



The structure of the platform should allow for access to electronic databases as is mentioned in all studies. Access to databases or links to databases is guaranteed in the studies of Du (2013).

Although there is no association between the type and format of platform and the type of target groups, Karaman suggests there could be different formats for different scopes (Karaman, 2014).

Educational content and materials

Educational content includes providing direct access to practice based nursing guidelines and evidence-based guidelines (League, 2012). In three studies there is explicitly explained what educational content concerning nursing research skills is included (Davidson, 2016; Kowitlawakul, 2017; League, 2012). This includes expertise in basic research principles (Kowitlawakul, 2017), expertise concerning research paradigms, such as quantitative and qualitative methods (Kowitlawakul, 2017) and the major characteristics, strengths and limitations of quantitative and qualitative research designs (Davidson, 2016). In Gagnon's study, also expertise in additional research designs is included (Gagnon, 2015). Research skills include to develop search strategies that are quest-based in order to formulate clinical questions (Davidson, 2016), and in particular using the PICO (= Patient, Intervention, Comparison, Outcome) structure (Davidson, 2016; League, 2012). Subsequent skills include to perform these literature search strategies (Gagnon, 2015) using a variety of library databases (Davidson, 2016). The literature search starts with having access to library sources and search machines such as Google Scholar or Medline (League, 2012). All studies mention that there should be access to electronic databases. After having performed the search strategy, additional skills concern the critical appraisal of research reports (Davidson, 2016). Research skills vary in complexity and can be levelled according to taxonomies such as Bloom's taxonomy (Davidson, 2016) but in most studies there is no explicit mention of levelling. Using evidence with the aim of improving the quality of care is explicitly mentioned by Davidson (2016). The spin-off to clinical practice is also enhanced by using cases (case-based learning) as is explicitly mentioned by Kowitlawakul (2017). Additional research skills that are addressed in the content of learning modules are data analysis, for example statistics (Gagnon, 2015) and academic writing as a skill (McIntyre, 2013).

Knowledge acquisition and achievement of learning outcomes



Knowledge acquisition outcomes concerning nursing research was defined in terms of improving research skills or in terms of improving the application of EBP (= Evidence Based Practice) or evidence. In League's study (2012), learning outcomes were the perceived access to EBP, and the perceived barriers, ability or confidence to use EBP. League found a significant improvement in perceived confidence and ability to use evidence, and an increase in awareness and interest in EBP (League, 2012). In Davidson's study, understanding the use of research findings for clinical decision-making, was regarded as the highest level of learning outcomes (Davidson, 2016). Progression was explicitly mentioned to be connected to levelling. Davidson's study showed the need for guaranteeing progression by increasing levels of learning activities (Davidson, 2016). In this study the platform was specifically designed based on progression in levels. Progression also depends on the quality of the teaching, which is vital, according to Karaman (2014), even though the type of learning is self-directed learning (Gagnon, 2015). The specific characteristics of e-learning or online learning were considered thoroughly in all studies. Specific consideration should be given to assessments, for measuring progression in learning. Specifically in self-directed learning, it is important to distinguish between formative and summative assessments, since both types of assessments, formative as well as summative, are important (Du, 2013). Formative assessment methods suit the characteristics of self-directed learning (Gagnon, 2015). In addition, summative assessments or online exams are required for grading. It was mentioned that apart from the need for knowledge achievement to be challenging, also testing and assessing should be challenging (Kowitlawakul, 2017). Gagnon's study showed that there was the most progression where the pre-test had the lowest scores (Gagnon, 2015).

Communication, interaction and feedback

A basic characteristic of learning by a distance education platform is that it should be interactive, and the way a platform is designed, is explicitly called an interactive design (Du, 2013). Also the modules or courses that are included in the platform should be interactive (Kowitlawakul, 2017). The interactive character of the platform includes interaction between student, teacher and content, which has to be maintained all the time (McIntyre, 2013). Interaction with instructors is essential (Karaman, 2014) and lack of interaction was mentioned as one of the main weaknesses of online education (Karaman, 2014). In addition the role of administrators is explicitly indicated in



McIntyre (2013), and it is stated that the interaction between students, content, teachers and administrators must be guaranteed (McIntyre, 2013).

Interaction involves learning outcomes, by means of feedback from tutors as well as from peers. It is mentioned to be important that feedback is individual-based (Davidson, 2016) and that feedback is timely or prompt (Davidson, 2016). Although learning is realized by distance self-directed learning, which is flexible, adequate feedback and interaction are essential. The study of McIntyre (2013) was aimed at discussing how peer dynamics influence student learning in an online environment (McIntyre, 2013). A disadvantage of online learning might be the loss of the social process of learning, as indicated in Du's study (Du, 2013). In the study of McIntyre (2013), the issue of mentorship came forward.

Apart from interaction by means of feedback specifically aimed at supporting knowledge achievement, other interaction involves discussing and exchanging ideas or experiences with peers, when interaction itself is the aim as such, enhancing collaboration. This is often organized by way of online fora, for which there should be enough space in the online environment. Lack of space for interaction with tutors or other participants is a barrier (Gagnon, 2015). It is important to pay attention to the way how this type of interaction is organized and how the connection to peers is arranged. In McIntyre's study it is suggested that peers from one geographical area could be connected (McIntyre, 2013). Interaction can be realized with a-synchronous as well as synchronous tools, and both tools need to be available (McIntyre, 2013). Sometimes students were overwhelmed by too many e-mail contact with class mates (McIntyre, 2013).

Nursing skills

Apart from learning outcomes concerning nursing research, outcomes also include practical or clinical nursing skills. Nursing skill performance was one of the outcomes in Du's study (Du, 2013). All authors agree that the acquisition of research skills should enhance clinical skills, and, according to League, should increase the access and use of evidence in practice (League, 2012). Knowledge acquisition is aimed at transfer of knowledge, that is, in the first place to put acquired knowledge into practice (Gagnon, 2015) and second, to transfer the knowledge to colleagues



(Gagnon, 2015). It was suggested that it is important to allocate time for staff to enhance knowledge transfer at work (League, 2012).

Usability

In all studies, usability was an important feature studied. According to Seixas' definition, "usability is the term used to describe the quality of the users' interaction with a given interface, in order to facilitate learning" (Seixas, 2016: p. 266). Usability concerns user friendliness, which is explicitly mentioned, since user friendliness enhances student motivation and engagement (Davidson, 2016). User friendliness also includes easy navigation and rapid load (Gagnon, 2015). In addition, ergonomic usability is needed (Seixas, 2016) Another feature of usability is accessibility, which may be open, closed, or a mixture of open and closed for certain modules. In all studies it was mentioned that the platform and its content should be visually attractive. Usability of the platform should enhance and support flexibility, which is the key of distance learning, involving flexibility in time, place and learning activities (Davidson, 2016). Flexibility in access to education encourages students to work across time zones (McIntyre, 2013). Usability also concerns platform structure and information to users, thus requiring clear platform as well as course information, for example by curriculum mapping (Du, 2013), and useful instruction (Gagnon, 2015). Usability does not imply the platform to be designed to minimize any effort of users. Users should be willing to engage and commit themselves to work on it, which is connected to the level of independence of the user, the quality of instructions, and the system feedback (Seixas, 2016). One important barrier is poor information literacy (Du, 2013). Earlier experience in distance education in users is important according to Seixas, and sometimes this earlier experience is poor (Seixas, 2016). Engagement in distance learning is represented by the concept of self-directed learning readiness (SDLR), which has been the outcome in Gagnon's study (Gagnon, 2015).

Management

A platform or its content should include management tools to develop and maintain structures and materials. It must be easy to further develop the platform and to add information. Tracking and monitoring tools are important components of the platform, such as management tools for student tracking (Du, 2013), to check the number of logins or the number of users. Some platforms contain a combination of systems, for example the platform Moodle, which also includes a teaching and



learning management system (LMS) and a course management system (CMS) to facilitate educators to develop online courses or online support (Seixas, 2016). Time and skills are required to develop educational materials, which Du mentions as a potential barrier (Du, 2013). McIntyre states that educators should resist the convenience of pre-established packages (McIntyre, 2013). Apparently the development of new educational materials is highly valued as compared to use of pre-established packages.

Infrastructural and technological support

All studies show that as a primary condition for developing an online platform, access to the internet should not be restricted in terms of time and place. In addition, there should be no restrictions in costs, when access to the internet is concerned, according to Du (2013). The quality of effective technological support provided is essential (Karaman, 2014). In Karaman's study, platform users mentioned to perceive problems reaching the call centre (Karaman, 2014). Hardware and software problems do often occur (Du, 2013). Testing by information technology personnel is required to check for viruses in the system (Kowitlawakul, 2017). All studies showed that providing direct or indirect access to (external) links is essential.

1.3 Discussion

The aim of this literature review was to determine the requirements that are essential for an e-platform for developments in nursing science and nursing research education. Our findings show that concerning the essential requirements for this e-platform, nine categories could be identified. Some of these requirements found in the study are basically evident, such as the unrestricted access to the Internet, or the interactive character of the e-platform and its content. Other requirements are less apparent, and therefore allow for being considered thoroughly.

As far as the platform users or targets are involved, it is essential to consider whether the platform will provide tools to clearly distinguish between different target groups, or alternatively, that these target groups are addressed simultaneously and identically, and no distinction is being made. Target groups are students at different levels, such as Master (MSN), Bachelor (BSN), or Associate degree (AND) level. None of the studies involved PhD students. For our purpose, it could be considered



whether the platform should also be directed at PhD students. Other variation in target groups may concern professional nurses in various clinical settings, or different age groups among nurses. In addition, it is essential to reflect on whether the platform is accessible to only registered members of a specific learning or collaborative community, or whether open access is allowed to all users. Another requirement concerns the platform's languages. There should be consensus on the possible use of only one language - and if so, which language - or the use of multiple languages. The above might provoke considerable consequences for the scope of the platform and should therefore be agreed on, as had been indicated by Gagnon (2015). For our purpose, that is, the Kazakh context, it is essential to decide whether all content in the e-platform will be in English, Russian or Kazakh. Some of the platforms in the studies of our review, included structures enabling content such as teleconferencing and game-based learning. Whether including the above is an essential requirement, should be considered before developing the platform structure. Additionally, consensus could be achieved on whether different platform structures need to be developed for different scopes (Karaman, 2014).

As far as educational content and materials is concerned, it should be examined thoroughly which content concerning nursing science and research skills will be addressed. Our review showed an extensive variety of research skills, ranging from literature search strategies to critical appraisal, conducting different types of data collection and data analysis including statistics, as well as academic writing. It is essential to achieve consensus on which of these skills should be included in the educational content of the e-platform. There should be agreement on whether to apply the quest-based learning based on the internationally acknowledged PICO structure. Different research paradigms need to be addressed, focussing on not only quantitative but also qualitative research designs. Access to electronic databases regarding research and using evidence, are further requirements on which consensus should be achieved, along with agreement about subscriptions to scientific journals. Decision-making in this area is crucial, not in the least because of the high cost of subscriptions to these journals.

In all studies, knowledge acquisition was addressed as a sequence of learning activities based on progressive levelling. In testing the achievement of learning outcomes, the priority was on formative assessment. The characteristics of formative assessments correspond to the typical



features of self-directed learning. However, caution must be taken when prioritizing formative assessing, since the value of summative assessments as essential requirements should not be underestimated. Furthermore, the ongoing assessment of the quality of teaching and teaching material needs attention. When developing the e-platform, tools for this quality assessment could be established.

Communication and interaction tools were essential requirements in all studies of our review. The interactive character of learning by an e-platform is fundamental. It is recommended that the scope of the interaction is examined carefully before implementing the platform. Online collaboration across geographical boundaries such as nations, can be considered, enabling students to exchange experiences globally. Outcomes of international interaction between nurses or students were not presented in the studies involved, however, in respect to the aim of the e-platform to be developed in Kazakhstan, enabling international interaction could be considered.

Learning by e-platform may generate a loss of social processes, whereas at the same time it also increases the number of online social contacts. The increase of online interaction is not commonly appreciated, as was shown by the perception among nursing students that they receive too many e-mails. Therefore, it is essential to anticipate adequate balancing between real-life and online communication. Particularly in the Kazakh context of developments in nursing science and nursing research education, it may be suggested that the e-platform will be available, not only for distance learning, but for classroom teaching as well, and online interaction will not ultimately replace face-to-face interaction.

In all types of distance learning, the organization of giving and receiving feedback, from tutors as well as from peer students, is crucial. The perceptions and experiences of the nursing students show that individualized feedback is an essential requirement. Timely feedback is also required, although it is doubtful whether a maximum of two working days, is reasonable.

Another category of essential requirements includes the output from the e-platform toward improving nursing skills. The transfer to clinical practice as a prerequisite was found in some of the studies. To achieve this, clinical nurses would need - extra - time to be able to work with the



platform in order to use evidence in their clinical work (League, 2012), which can only be accomplished when facilitated adequately. The availability of time might be an essential criterion for decision-making concerning who will have access to the platform.

Usability requirements such as easy navigation and attractiveness of the platform, were brought forward by all nursing students in the studies of our review. Although there is no doubt that these requirements will encourage student engagement, it may be discussed whether there is a limitation to the investments made for improving attractiveness and design. Attractiveness and a clear site structure of the learning environment is no guarantee for optimal student engagement; an acceptable level of commitment and intrinsic motivation among students should be considered. Because of this, along with the risk of poor information literacy or poor information skills, one could discuss whether entrance criteria would be required, such as a minimum level of basic information skills. Alternatively, the e-platform and its content could be open to all students, regardless their level of information skills or intrinsic motivation. Adequate instructions to platform users are therefore decisive. The above should be considered thoroughly in the context of the Kazakh nursing students' level of information skills and educational experience. For the same reason, it could be recommended there should remain synchronous tools at all circumstances, apart from a-synchronous tools.

As far as management requirements are concerned, facilitating enough time and skills for developing educational materials, is essential. Specifically these issues - time and skills needed – and in particular, shortage of time and skills, was mentioned in one of the studies (Du, 2013) as a disadvantage of learning by e-platform. This is remarkable, since developing educational materials is the key part of the educational profession, regardless whether classroom learning or online learning is involved, and the shortage of time and skills is an overall universal challenge. It might be suggested that in platform learning, there is the risk of ignoring the need for adequate time and skills for developing materials. If so, cautiousness is required. From this perspective, the 'fear of using pre-established packages', as indicated by McIntyre (2013), appears to be realistic and relevant. We recommend that, before starting to develop and implement the e-platform, there should be consensus on the management's orientation and policy concerning facilitating educational developments.



All studies showed that infrastructural and technological support is crucial, and that unrestricted access to the Internet is a basic requirement. Further requirements to be considered are the unlimited availability of a call centre or support centre, and the technological opportunity to have unrestricted access to links to other websites or electronic databases.

Strengths and limitations of the study

Since there is no strong consensus on the content of keywords such as ‘platform’, ‘online learning’, ‘nursing science’ or ‘nursing research’, it was challenging to develop search strings for a systematic search strategy. Consequently, various keywords and search strings for different databases were used, by different members of the international collaborative research group. The selection of relevant studies was based on title and abstract, and on the inclusion criteria, which was a complex selection procedure. As a result we succeeded in finding studies that were all on nursing students or clinical nurses, assessing their perceptions and experiences in using a platform or platform modules. In these studies different countries were involved, varying from the European, Asian and American continent. In addition there were different designs, resulting in a satisfactory sample of relevant studies. All studies had an adequate methodological quality, varying from good to excellent.

Another strength of this review is that all studies included have been conducted recently. Online information technology is characterized by a rapid development, therefore in this area of research, academic publications may be out of date rapidly. The communication between the authors was challenging and contributed to the international scope of the review.

1.4 Conclusion

Regarding the essential requirements for an e-platform for developments in nursing science and nursing research education, nine categories could be identified: platform users or targets and scope, platform structure and content, educational content and materials, knowledge acquisition and achievement of learning outcomes, communication, interaction and feedback, nursing skills, usability, management, and infrastructural and technological support. Some of the requirements



are obvious, but others are less evident and allow for further consideration to achieve consensus. Therefore, we recommend that these requirements will be included as statements to be discussed in the Delphi study.

2 Best Practices

Part of the needs- and requirement analysis is the description of good practices. The description of good practices is used to identify the needs and requirements for the CNE in Kazakhstan. The good practices are presented and discussed at the workshop in April 2018 in Groningen and used together with the results of the literature review for further design of the CNE.

2.1 What can we learn from good practices?

Good practices are defined as examples of e-platforms in nursing with the purpose to improve nursing quality by knowledge exchange and collaboration on an international or national level. The good practices include information and collaboration about evidence based nursing practice and/or nursing research and nursing education.

In total 6 good practices are selected; 2 on an international level, 1 from the Netherlands, 1 from Finland, 1 from Kazakhstan and 1 from Russia.

Country /region	Organisations	Internet address
World wide	International Council of Nurses (ICN)	http://www.icn.ch
	Sigma Global Nursing Excellence Rho Chi	https://www.sigmanursing.org
Netherlands	Vilans	https://www.vilans.nl
Finland	Nursing Research Foundation HOCUS	http://www.hotus.fi
Kazakhstan	Republic Public Association Specialists of Nursing Paryz	http://www.paryz.kz
Russia	Public organization "Russian Nurses' Association" (RNA)	http://www.medsestre.ru

For each good practice we give information about:

- a) mission, vision and goals
- b) targetgroups and participants
- c) organisational structure and funding
- d) information on the internet/ e-platform
 - i. nursing topics
 - ii. guidelines
 - iii. research
 - iv. educational materials
 - v. collaboration/discussion facilities
 - vi. other

The description of each "good practice" can be found in the appendix. Below we give a summary on the different aspects.

2.1.1 Mission, vision and goals

All organisations have to aim to advance the nursing profession. Some at worldwide level, others at a more national level. Some focus more on empowerment of nurses, professionals rights (ICN and Paryz), other focus more on research, educating nurses and evidence based nursing.

After the masterclass in Groningen, where several good practices were presented, the projectpartners agreed on the following mission statement for the CNE Kazakhstan:

The Center of Nursing Excellence Kazakhstan contributes to the improvement of nursing practice by empowering nurses to enhance the quality of healthcare for better health of individuals.

The CNE brings theory to practice and enhances development of nursing science.

The CNE serves as a collaboration and networking platform between nursing practice, nursing education, and nursing research.

The CNE actively collects, promotes, and shares:

evidence based nursing clinical guidelines;

educational materials for nursing;

nursing research.



2.1.2 Targetgroups, organisational structure and funding

The organisations and their e-platform are very different. The differences have to do with the mission/vision and the goals of the organisation, the targetgroup and the way it is organised and funded. Targetgroups vary from nursing organisations; individual nurses to nurses and other formal and informal caregivers. The funding can be by other organisations, by the government, or by individual membership payments. Some organisations have a complex structure with a board and different workinggroups with people responsible for different subjects or regions. Organisations can have people employed and/or run with volunteers. For example, the members of ICN are professional nursing organisations. Individual nurses can't become a member of ICN, but when their professional nursing organisation is a member, they can use the facilities ICN offers. Sigma is another worldwide organisation, but here members are individual nurses. Members pay a fee and are strongly motivated to donate. Hotus is owned by the Finnish Nursing Association and members of the Finnish Nursing Association can log in and use the research and educational material on the e-platform. Vilans is an organisation mainly funded by the Dutch government. It provides most information for free for nurses and for other carers as well.

Some organisations have employees other only work only with volunteers. Most organisations work with ICT professionals for their website and e-platform.

For the CNE Kazakhstan it is important to make choices about

- targetgroups and membership
- organisational structure
- funding
- connections with other organisations in Kazakhstan and worldwide (Paryz, national and international universities, other professional nursing organisations, for example ICN etc).

2.1.3 E-platform, internet

Most organisations use and internetpages with free information for everyone and information after log in. Mostly educational materials, facilities for collaboration and discussion and for example use of an online library can be found after log in. Information about the organisation, different nursing topics and evidence based guidelines can be found on the open website or also after log in (for example Hotus and Vilans). Some provide information on nursing leadership (for example ICN



and Sigma); nursing research (Hotus) or different nursing topics. For example Vilans hosts different websites with different goals. For example "www.zorgvoorbeter.nl" is their platform to provide evidence based and practical information to improve nursing practice. For different nursing topics they provide evidence based guidelines, interventions and practical tools. Nursing topics are for example Daily care: medication safety, hygiene, food and drinks, skin problems; and Mental wellbeing: dementia and personalised care. All organisations also organise activities for their members where nurses can meet each other, such as conferences, presentations or regional workinggroups.

3 List of requirements

Based on the literature review, the description of best practices, and the masterclass, requirements for the design of the e-platform are formulated. These are: A) content requirements (e.g., based on mission statement), B) functional requirements, C) usability requirements; and D) technical requirements. Part of the content requirements is *nursing content*. For prioritizing nursing issues, we will use the seven categories of the NIC (Nursing Intervention Classification):

- a) Physiological: Basic
- b) Physiological: Complex
- c) Behavioral
- d) Safety
- e) Family
- f) Community
- g) Health System

3.1 Content related requirements

1. educational materials about **evidence based nursing**
2. educational materials about **nursing research skills**
3. educational materials about **nursing leadership**
4. evidence based nursing clinical guidelines for use in practice
5. webinars about nursing topics
6. forum discussions for nurses on nursing topics
7. links to international websites with additional nursing guidelines
8. links to electronic databases with scientific nursing publications
9. an overview of national and international institutions working together with the CNE
10. an overview of important stakeholders for nursing in Kazakhstan such as universities with bachelor and/or master programmes in nursing, university medical hospitals



11. an agenda/calendar with relevant nursing research and nursing educational activities in Kazakhstan and beyond
12. a blog about several nursing topics, updated once a month

NURSING SKILLS PERFORMANCE & NURSING CONTENT

1. nursing skills performance
2. to put nursing knowledge into practice
3. transfer of knowledge to colleagues
4. increasing usability of evidence in clinical nursing professions

Education, research, and clinical guidelines are about different nursing content. Nursing content on the e-platform can be organised using the seven domains of the Nursing Interventions Classification (NIC).

1. Physiological: Basic (such as physical activity, nutrition support)
2. Physiological: Complex (such as care for cancer; optimize neurological function)
3. Behavioural (such as dementia and depression)
4. Safety (such as hygiene, prevention of falls and medication safety)
5. Family (such as child baring care and care to support families)
6. Community (such as health promotion and prevention of health risks)
7. Health System

3.1.1.1 NURSING RESEARCH CONTENT/SKILLS

1. Basic research principles
2. Qualitative designs
3. Quantitative designs
4. Formulate quests/ research questions e.g. in PICO format
5. Literature searches
6. Skills to use electronic databases
7. Critical appraisal of scientific literature
8. Analysis, such as statistics or qualitative analysis
9. Academic writing
10. To apply evidence in the clinical practice

3.2 Functional requirements

for collaboration purposes

1. includes tools for online discussions
2. includes tools for online collaboration



for educational purposes & knowledge acquisition

3. includes distance learning courses
4. includes instruction films for explanation and instruction of nursing skills and interventions.
5. distinguishes between different target groups (eg bachelors, masters, phd students, clinical nurses)
6. includes educational materials for use in classroom settings (online and/or to download)

Each distance learning course

7. includes clear learning goals and learning outcomes
8. has a clear structure and a course map
9. provides timely feedback from tutors and peers
10. includes instruction, examples and assignments
11. supports knowledge acquisition by enabling self-directed learning
12. includes formative assessment to assess knowledge acquisition
13. includes summative assessment with certification
14. enables communication and interaction with tutors and peer students

3.2.1.1 FUNCTIONAL MANAGEMENT REQUIREMENTS

1. tools to manage user management accounts
2. content management tools so it is easy to add and change information
3. secured personal data for log in, and administration of courses is secured
4. rapport functions with the option to monitor the number of users and popularity of the different items and improve the site content

3.3 Usability requirements

1. Users have open and free access to information relevant for the nursing profession.
2. Log in is provided for some educational and collaboration purposes
3. There is a clear site structure
4. Navigation is clear and simple
5. Is well designed and attractive
6. Text on each page is not too much and easy to read
7. Information is available in Russian and English and Kazakh
8. Contact information is easy to be found

3.4 Technical requirements

1. uses a scalable platform so it can be used at a computer, tablet, and mobile phone.
2. can be used in different browsers



3. the technological infrastructure guarantees technological support which is not restricted to time, place, or cost.

3.5 Prioritising requirements

In the process of developing the e-platform, it is important to prioritize its requirements. The research method used for this process is a Delphi review (Expert panel). The Delphi method is based on two rounds of questionnaires sent to a panel of experts. The experts are asked to provide their opinion on what are 'essential,' 'useful, but not essential,' or 'not necessary' requirements for the e-platform of the Center of Nursing Excellence in two rounds. The results of this study will be presented in a scientific article.



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Masterclass Center of Nursing Excellence Programme

ProInCa project - workpackage 2.1.

Dates: 16th of April - 20th of April 2018



Adress:

Hanze University of Applied Sciences Groningen
School of Nursing
Petrus Driessenstraat 3
9714 CA Groningen - the Netherlands

<https://www.hanze.nl/eng/education/health/school-of-nursing>



Introduction

The masterclass is organized as part of the needs and requirement analysis of the Center of Nursing Excellence.

The goal of the masterclass is to learn from good practices, literature findings, experts and site visits and use this information for the further design and development of the Center of Nursing Excellence in Kazakstan.

Participants are project members from Kazakstan, Finland and the Netherlands and stakeholders and/or members of associated partners of the ProInCa project.

The participants will be asked to do a preparation assignment. Participants that successfully participated will receive a certificate of attendance.

The masterclass includes 54 hours of studying/participation.

The participants receive a certificate after full attendance and participation.

Programme Committee:

ProInCa -Wp2.1

Bea Dijkman, Wolter Paans, Amangali Akanov, Gulim Aimagambetova, Eldar Issabayev

Organizing Committee:

Hanze University of Applied Sciences – Lectoraat Verpleegkundige Diagnostiek

Wolter Paans, Bea Dijkman, Rolinka Borkhuis



Day 1: Monday 16th of April

Topic:

Introduction of the programme and learn from Hanze UAS and Nursing in the Netherlands

Location			Wiebenga zaal
9.00 - 9.30	Registration		
9.30 - 9.45	Welcome to Hanze UAS	Annemarie Hannink, Dean of Nursing	
9.45 - 10.15	Introduction to the programme	Bea Dijkman/ Amangali Akanov/ Johanna??	
10.15 - 10.45	Hanze UAS Center of Expertise Healthy Ageing	Han de Ruiter, Director Center of Expertise Healthy Ageing & Advisory Board ProInCA	
10.45 -11.00	Coffee break		
11.00 - 12.00	Nursing Research in the Netherlands and at Hanze UAS	Wolter Paans	
12.00 - 12.30	Guided tour School of Nursing		
12.30 - 13.30	Lunch		
13.30 - 15.30	Presentation best practices	Bea Dijkman/ Gulim Aimagambetova & Jari Hautimaki	
15.3- -15.45	Coffee break		
15.45 - 17.00	Guided tour Library		

Day 2 Tuesday 17 th of April

Location			D1.03 / D1.07
9.00	Project Management &	Johanna Heikkila	
- 12.30	Quality Assurance	Juha Roslakka	
12.30 - 13.30	Lunch		
13.30 - 14.30	Presentation best practices: International Council of Nursing	Petrie Roodbol	
14.30-15.30	Presentation best practices - Vilans	Lia Davelaar and Annemarie Hoogland	
15.30 - 17.00	Workshop - CNE		



Day 3

Topics: site visit Wenckebach institute University Hospital (UMCG); best practices

Location			D1.03/ D1.07
9.00 - 11.00	Findings from literature review.	Bettie Oosterhof, Amangali Akanov, Wolter Paans	
11.00 - 14.00	Lunchconcert (includes travelling)		Oosterpoort
14.00 - 17.00	Site Visit Wenckebach University Medical Center Groningen		Wenckebach

Day 4

Topic: CNE in Kazakstan mission vision & requirements

Location			D1.03/ D1.07
9.00 - 10.00	Presentation Hanze ICT - Blackboard and use of video.	Jos Bos	
10.00 - 12.30	Introduction and start Workshop today - Scrum	Erwin de Beer	
12.30 - 13.30	Lunch		
13.30 - 16.00	Workshop CNE		
16.00 - 17.0	Presentation results		
18.30	Project Dinner (at own costs)		Feithuis

Day 5

Topic: How to proceed?

Workshop focusing on organisational issues and activities in the different WP's

Location			D103/ D1.07
9.00 - 10.00	Summary mission/vision CNE and requirements	WP 2.1 Amangali Akanov and Bea Dijkman	
10.00 - 12.30	Organisational issues how to proceed WP2.1 - Delphi - fill the platform Other Workpackages?		
12.30 - 13.30	Lunch		
13.30 - 15.00	Evaluation Closing session (including certificates)		



Appendix 2: Good practices summary table

	ICN International Council of Nurses	Sigma Global Nursing Excellence	Vilans	Nursing Research Foundation - Hotus	Paryz	Russian Nurses Association
	www.icn.ch	www.sigmanursing.org	www.vilans.nl	http://www.hotus.fi		http://www.medsestre.ru
	Worldwide	Worldwide	The Netherlands	Finland	Kazakhstan	Russia
Mission or vision	To represent nursing worldwide, advancing the nursing profession and influencing health policy	The mission of the Sigma, is advancing world health and celebrating nursing excellence in scholarship, leadership, and service. Sigma's vision is to be the global organization of choice for nursing.	Ensure that the healthcare system works better. "We help professionals improve care for the chronically ill, vulnerable old and people with disabilities."	The mission is to be the well-known and reputable institution in producing, disseminating and providing a framework for the use of the best available evidence to inform clinical decision-making to improve health outcomes in Finland.	Unification of all nursing specialists with secondary and higher special education into a single union, the development of nursing and the provision of effective activities for a worthy representation of Kazakhstan in the international medical community.	--
Goals	<i>ICN Core business:</i> Supporting NNAs strengthening by eg: <ul style="list-style-type: none"> • Maintain best practices for responsible governance; • Provide ongoing opportunities for global exchange; • Evaluate and review current models, policies, processes and guidance so as to strengthen and enhance inclusiveness; • Identify and disseminate and/or produce and maintain evidenced based up-to-date publications across all areas of work; 	--	Vilans <ul style="list-style-type: none"> • as a place of learning: provide learning opportunities • as a workplace: puts expertise in practical work materials • as a laboratory: stimulate development of new knowledge 	The aim of the National Research Foundation is to develop and establish evidence-based nursing in Finnish health care so that nursing interventions are effective, appropriate, feasible and/or meaningful.	<ul style="list-style-type: none"> • Raising the prestige of the profession and increasing the role of the nurse in the health care system; • Protection of professional rights and interests of nurses in legislative, administrative, and other bodies, improvement of working conditions and increase of wages. • Education of nurses, including the upgrading of the skills of practicing nurses, attestation of average medical workers; 	<ul style="list-style-type: none"> • protection of the rights and legitimate interests of "nursing"; • to promote the improvement of the quality and accessibility of health care in Russia, and to contribute to improving the health indicators of the population. • to promote the development of medical science and new medical technologies; medical culture and medical education; • assistance in the organization of scientific and methodological cooperation of scientists and specialists in the field of medicine; And some more.
Target groups and	Only professional nursing organisations become a direct member. Nurses from these	Sigma membership is by invitation to baccalaureate and graduate nursing students who	Netherlands: professionals, mainly nurses at al levels, informal carers	Members of The Finnish Nurses Association	Kazakh nurses 2500 nurses	Russian nurses, midwives, laboratory assistants, paramedics, nursing teachers



participants	organisations can use the information and can take part in the activities.	demonstrate excellence in scholarship and to nurse leaders exhibiting exceptional achievements in nursing. Sigma has more than 135,000 active members. Members reside in more than 90 countries. 39 percent of active members hold master's and/or doctoral degrees; 51 percent are in staff positions; 19 percent are administrators or supervisors; 18 percent are faculty/academics; and 12 percent are in advanced practice.	organisations (healthcare/students) Organisations (healthcare providers/colleges and universities) can become members.			more than 180 000 people
History	1899 in Britain.	1922	2007?	2006		1992
Organisational Structure	The (ICN) is a federation of more than 130 national nurses associations (NNAs), representing the more than 20 million nurses worldwide.	The Sigma board of directors consists of 11 voting members and the chief executive officer. There are 7 regions, Europe is one region, as example. There are roughly 520 chapters linked to more than 700 institutions of higher education in different countries. An example is Rho Chi - the Dutch Chapter of Sigma.	Vilans is a large organisation with 167 fte employees.	The Finnish Nurses Association owns HOTUS. Foundation has a board Foundation has local nursing research HOTUS hosts two international collaboration centres: - WHO Collaborating Centre for Nursing - The Finnish Centre for Evidence-Based Health Care	The governing bodies of the Association are: 1) General Meeting of the Association is the highest governing body; 2) Board - the executive body; 3) Control and revision commission	The governing bodies of the Association are: 1) Conference (The conference of the Association consists of delegates from regional branches and representatives of members of the Association - legal entities) 2) Board 3) Coordinating Council 4) Executive Directorate

Funding	ICN derives around 80% of its funding from membership dues, which cover core responsibilities along with	Members pay a fee of 73\$ and are strongly motivated to donate. There is a web shop with gifts, books etc. Income is	Vilans is mainly funded by the Dutch government. Sometimes in small-scale projects at one organization,	The Finnish Nurses Association owns HOTUS and finance activities. The Nursing Research Foundation also	The financing is based on membership fee. Entry fee – 1000 tenge, monthly membership fee – 200 tenge.	Members have to pay a fee. * Fees are paid to the RNA regional association in the
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	administrative and governance functions. It relies on grants or donations from foundations, corporates and governments to cover programming, special projects, conferences and congresses, awards and fellowships	generated by organizing congresses. There are several journals.	sometimes in large national programs with multiple partners and with subsidy from VWS (Ministry of Health, Wellbeing and Sports'	receives donations and decrees (wills). Funds received as donations are used to implement the Foundation's purpose and basic mission.	*Association pays taxes. Non-profit legal entity. Association has 2 branches in Petropavlovsk and Atyrau cities of Kazakhstan.	amount of 1% of the official salary; ** The Regional Association transfers to the RNA account 30% of the amount of fees RNA has 39 branches in Russia
Internet/ e- platform	www.icn.ch	Most information can be found after log in.	www.vilans.nl is the website from the organisation www.zorgvoorbeter.nl is the e-platform for providing information, guidelines and educational materials. Most information on the internet is for free. Members can log in to use the guidelines "kick protocollen".	HOTUS has an intranet pages. Access to intranet has managed by common password. Intranet include own pages for Hotus board of directors Advisory Board and The recommendation Working groups		All information on the website is available for everyone. a. e-library b. educational material/training c. RNA bulletin d. online resources e. literature
Nursing topics	<ul style="list-style-type: none"> • eHealth • Leadership Development • Ethics and Human Rights • Communicable Diseases • Noncommunicable Diseases • Primary Health Care • Immunisation/Vaccines • Mental Health 	--	On www.zorgvoorbeter.nl for example: Daily care: medication safety, hygiene, food and drinks, skin problems; Mental wellbeing: dementia; personalised care Changes in healthcare: informal care takers	--	--	--
guideline s	--	--	Yes different guidelines after log in	Yes, but on the open website not more than 10 guidelines right now.	--	--



research	There is a special member area for discussions and free publications	The research page contains information about grants and research guidelines. Library, available after log in, open access for research articles of own journal of organisation	Vilans is involved in research and brings research findings to practice by translating it into practical information for professionals. Vilans has participated in several EU projects, as a scientific director and as participants in. Vilans has large digital dissemination expertise. Research, knowledgesharing and advise/consultancy is the core business of Vilans.	Research interests of the Nursing Research Foundation Systematic reviews and clinical practice guidelines Implementation of evidence-based health care Evaluation of evidence-based practices Structures to support evidence dissemination		Members can use e-library
educational materials	ICN has entered into a partnership agreement with the WCEA to create a global network of continuing nursing education courses. The network of courses is accessed by organizations around the world who can select the courses that they would like for their nursing team / members. ICN member organizations receive special terms for accessing the platform and associations can also share education with each other through the network. An important focus of the initiative is to distribute education to nurses in developing regions.	Learn & Grow: pages with information about the E-learning possibilities, the publications which are available if you are a member, and about the Leadership program.	There are 3 different websites "knowlegde plafforms" that contain educational materials for teachers and students at vocational training level and bachelor level. Also on other Vilans sites information can be found.	--	--	yes



collaboration/discussion facilities	--	Sigma provides you with opportunities to engage with other nurses to develop your professional and leadership skills. There is a mondial collaboration facility, called "the Circle", only for members, after log in. There different communities of interest. Members can for example join online conversations about community health, critical care nursing and nursing informatics.	--	--	--	There is a possibility to log in the forum for everyone.
other	The main content of the website is the responsibility of the ICN's office in Geneva. The actuality of the information of the networks is the responsibility of the networks selves and is not always actual.	Advise for an e-platform: Keep it simple. Work with photos and with text. Make it easy to find things on your website.		This website is good example of an Excellent Centre of Nursing.		There is a possibility to log in for the directors of regional offices.

