The Educational Challenges of E-representing the International Classification of Nursing Practice

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Teaching about classification also plays an important role in nursing education. The International Classification for Nursing Practice is a unified professional language devoted to nurses, other health workers and broader areas. In this paper, the e-version of this classification is presented as a challenge for an efficient educational practice searching for new information solutions in different environments using information and communication technology. Clients on a personal computer, the internet and PDA-hand-held computers are all presented. The combination of those clients in health-care education is analyzed.

Key words: education, health care, nursing, classifications, information technology

Izobraževalni izzivi e-predstavitve
Mednarodne klasifikacije prakse zdravstvene nege

Klasifikacije zasedajo pomembno mesto v izobraževanju zdravstvenih delavcev. Mednarodna klasifikacija zdravstvene nege je poenoten profesionalni jezik namenjen medicinskim sestram, drugim zdravstvenim delavcem in pa tudi laikom. V članku je predstavljena e-oblika klasifikacije kot izziv za učinkovito izobraževanje z uporabo sodobne informacijske in komunikacijske tehnologije. Predstavljene so rešitve za osebne računalnike, na spletu in za dlančne računalnike. Analizirana je kombinacija treh predlaganih rešitev kot možnost za uspešno izobraževanje v zdravstvu.

Ključne besede: izobraževanje, zdravstvo, zdravstvena nega, klasifikacije, informacijska tehnologija

1　Introduction

The International Classification for Nursing Practice (ICNP®) is a professional language for communication among people (Mortensen, 1999; Hardiker and Coenen, 2006). An important goal of this is also to facilitate informatization in the whole field of health care. It is a good base to support nursing process (Potter and Griffin Perry, 2003; Taylor et al., 2001; Yu et al., 2006) and their computerization - along the lines of patient records, minimal data sets, etc (van Bemel and Musen, 1997; Šušteršič et al., 2003; van de Castle, 2006; Müller-Staub et al., 2007). Therefore, in nursing education, it is not only important that

students become familiar with ICNP®, but also that they develop critical thinking/reasoning concerning its usage in nursing documentation and the informatization of nurses' work (Eldh et al., 2007). To meet these challenges, ICNP® must be widely accessible, not just as a book (International Council of Nurses, 1999; Cibic et al., 2000), but also on electronic media such as personal computers, Internet and PDA computers (Bond, 2006; Norton et al., 2006; Saranto, 2007).

In this paper, three versions of clients for the different media above mentioned are presented. User can browse Slovene and English version of ICNP® beta 2. Each version is discussed in terms of its technical advantages and disadvantages. Teaching critical thinking enables nurses

and other health workers not only to select the most suitable access to ICNP® for a given situation, but also to evaluate the role of the information and communication technology (ICT) as a tool for adding value to their work.

2   ICNP® and its Expectations

ICNP® can be viewed as an information tool for describing nursing processes in practice (Mortensen, 1999; International Council of Nurses, 2005). It encourages the unified acquisition, storage, processing and dissemination of nursing data in the framework of a health information system. This data can then be used by practitioners, researchers and educators (van Bemel and Musen, 1997; Scholes et al., 2000; Hammon and James, 2006; Hardiker and Coenen, 2007).

This data are also the basis for quality management in nursing – and consequently the need for possible changes in education, management and health care strategy become more evident.

As an information system, ICNP® supports unified coding, which is significant for electronic patient record and data exchange among the different information solutions. A formalized health care language supports process methods of work (McEwan and Wills, 2007) and standardizes the way nurses work with patients/clients. It also makes the exchange of "best-practice" experiences easier.

With the e-representation of ICNP®, we would like to contribute to the achievement of these goals. The classification should be accessible to nurses during their education and work in different situations, where it can be used for describing nursing diagnoses, interventions and outcomes. Different clients and a book offer the possibility for all nurses to choose the most suitable access to ICNP® for themselves.

3   Clients

A client must offer flexible access to ICNP® with the aid of information and communication technology. Therefore the book version (International Council of Nurses, 1999) is extended significantly. Besides the usual advantages of e-representation, it is important to mention multilingual access to ICNP® - in our case a combination of Slovene and English.

Different clients can be used in different areas of nursing education and work. Therefore, the advantages and disadvantages of each client must be known. From our experience, no single solution can serve as a replacement for the others. We propose a complementary approach to the use of different clients. Thus, a nurse should have access to all the clients. It is up to her/him to choose the most appropriate for each case.

3.1   The Internet Version

The Internet client can be accessed on the web (http://lopes1.fov.uni-mb.si/icnp). A screenshot is shown in Figu-

re 1. It offers browsing in a hierarchical tree structure, searching for keywords (in both languages and for codes) and full-text search. Searching is conducted on the server side and results are transferred to the user. In the case of multiple search results, the user can move backwards and forwards among them. Access to the database is only possible through the search engine on the server in order to secure the database.
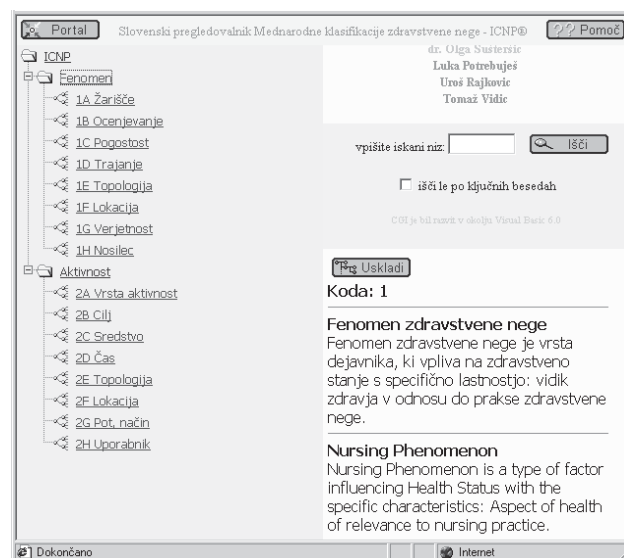

Figure 1: Screenshot of the web-based client

One of the main advantages is the ease with which changes are implemented on the central computer, always offering users the latest version of ICNP®, which is a live language and still undergoing some changes. Access to this version is based on access to the Internet. To a certain degree, the Internet connection can present a problem. Therefore, the tree structure is built on the client's side.

From an educational point of view, this is a good example of using internet the when teaching students about the ICNP® and ICT concepts together. In combination with other teaching materials, it also encourages distance learning.

3.2   The Personal Computer Version

A user must install this version in order to use it. It is available on a CD-rom together with installation software. A screenshot is given in Figure 2. There is a flexible user interface offering more ways for searching than the other versions. Having the database on a personal computer means that this client is the fastest.

It offers keyword and full-text searching. There are alphabetically ordered lists of codes and keywords in both languages. The tree structure changes instantly according to the position of a search result in a the hierarchical structure.

Compared to the Internet version, we would like to emphasize the speed and multiple search methods. The friendly user interface offers flexibility so it can be custo-
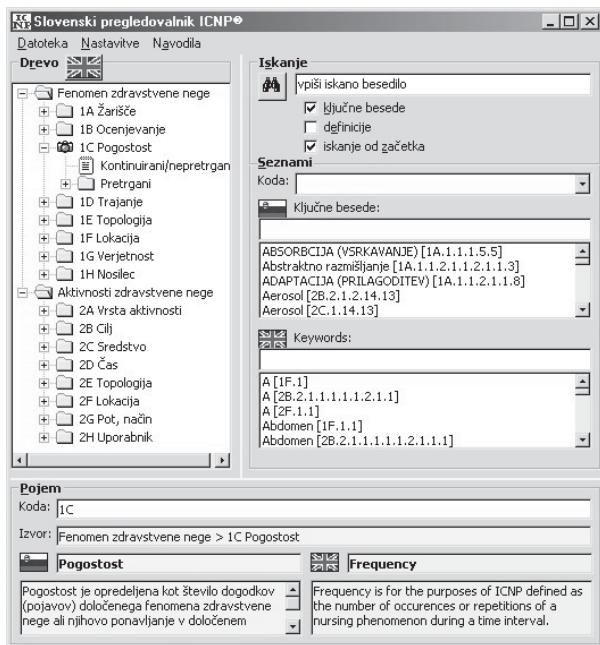
Figure 2: Screen of the client for a personal computer

mized to fit the user. This version can be viewed as a step forward toward information system solutions.

According to our experience, the PC version is suitable for the classroom and for individual student's work on documentation in nursing. Because the Slovenian Ministry of Health produced the CD-ROM and PC client (Rajkovic et al., 2004) and made it available free of charge, students can use the software at their homes on their own PCs.

3.3 The PDA (Palm) version

The PDA hand-held computer version (Figure 3) is based on the Palm operating system and the database was adapted to suit it. The solution takes advantage of the PDA's characteristics such as convenience, short start-up time, different user interfaces, etc. The most significant one is that a nurse can always carry a PDA in her/his pocket. This way, ICNP® is kept close at hand. Among the disadvantages, we should mention the processing speed and small screen size.

The PDA does not offer a wide view of the tree structure. A user can browse the hierarchical structure by moving up or down one level, searching for keyword, code or through full-text. In the latter case, the client returns the list of keywords where the search string was found.

Even when PDAs and mobile phones will be combined into a single device, this version will allow cheaper access in comparison to the mobile version using the WAP protocol.

Using PDAs, students can realize the strengths and weaknesses of the available mobile applications. They always have some ICT support with them, which is especially important as they work with patients at sites that

are far from classrooms and often far from other ICT support.

Figure 3: Screenshot of the client on a PDA

4 Conclusion

Classification ICNP®, which is widely accessible in the professional community by electronic means, contributes toward the more rapid development of the standardization of nursing diagnoses, interventions, outcomes and documentation in the field of nursing care. It also encourages a multilingual approach, which is important in a multicultural environment where different languages are used. Consequently, it means a better information picture of the whole nursing process. It encourages integration with other segments of health care as well as the usage of existing data for research and development purposes (Bohanec et al., 2000; Sustersic et al., 2002). With the e-representations of ICNP®, we also bring the spirit of e-services nearer to practice.

To achieve these goals, we recommend the use of the clients presented here as tools in education on several levels from ICT literacy through the whole nursing process to the students' practical work with patients.

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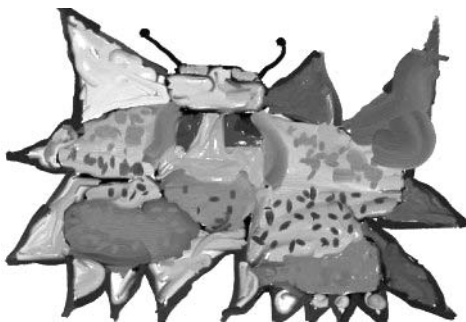
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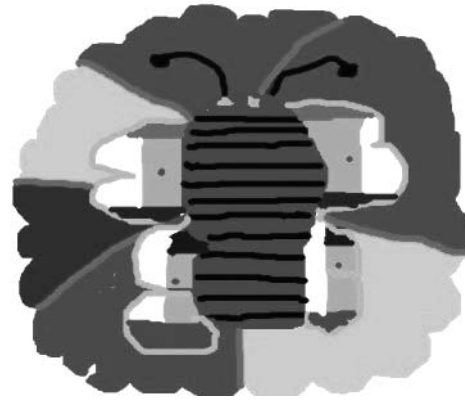
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