4.1

Improving professional practice by using the Internet

Marianne Aars,

Tromsø University College

Abstract

The paper recounts the use of a tool, called Physio-net, that integrates text and video as an aid to reflection and which has been developed for a course on professional practice,. Practitioners develop video for viewing by students and can then use these as a developing dialogue between students and teachers, clinicians and physiotherapists.

Initial research into the effectiveness of the tool demonstrate that this is an effective tool for developing reflection by students, and is also of extremely useful as a tool for practitioners to reflect on their own practice. This is also a medium which enables students and teachers to develop skills of balanced and friendly criticism.

The conclusion is that it is the blending of these three, aspects, the use of text, the use of video, and a community of trust between participants, that has led to the successful implentation of the platform.

Introduction

In this article I will present a net based tool which provides opportunities for reflecting on practice and discuss students' and clinicians'experiences in using it. it. The tool, Physio-net, was developed at Tromsø University College in 2003 and has been used for multiple purposes to support students' learning since that date. Here I will address the tool's potential to enhance reflection in order to improve professional practice in physiotherapy, and to generate knowledge from clinical experiences, with the research question: What is learned and why in analysing practice on Physio-net? Before recounting the study, I will give a brief summary of the theoretical framework for the study; the role of reflection in developing praxis, and explain the tool Physio-net and its background.

Reflection in educating professionals

Today, where evidence based practice seems to be more and more established as "the gold standard for practice" within the health care system, and where the relationship between science and practice often is understood as a rather instrumental one, it is important to seek ways to generate knowledge from practice itself. It is important to re-establish the reflective physiotherapist who is professional in the true sense of the word, not merely a technician, exerting results from science. An important

aspect of improving clinical and professional competence is to reflect upon actions and the underlying assumptions guiding practice.

The idea that reflection contributes to better practice can be traced back to philosophers such as Dewey (1938) and Schön (1995). Both emphasize the significance that reflection in – and over practice has for the acquisition of knowledge and the development of the expert clinician. An expert automatically reflects on his or her own practice and regards development of knowledge as a lifelong learning process. Within the field of physiotherapy, the development of the students' and clinicians' clinical expertise have been made the object of research by, among others, Donaghy & Morss (2007), Higgs et al (2004) and Jensen et al (2000).

A quite common definition of reflection in physiotherapy literature is this, quoted from Boud et al (1985):

> Reflection in the context of learning, is a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciation (p.19)

Here reflection can be seen as an individual activity which involves cognition and emotions. Some critical questions from Clouder (2000) regard the nature of the rather unconscious everyday reflection distinguished from the type of reflection which promotes learning. She suggests another definition which focuses on the critical analysis component:

> Reflection involves the critical analysis of everyday practises in order to improve competence and promote professional development (s.211)

This definition focuses on the scope of reflection: improvement of future practice, and opens up for a dialogical and social aspect in reflection, which I find appropriate for my understanding.

Background: The tailormade "Physio-net"

The internet resource Physio-net was made in order to support the students' learning process in a new part-time, decentralised model of bachelor physiotherapy at Tromsø University College. The programme has only run once, with 15 students enrolled in October 2003, who qualified in June 2007. This illustration in fig. 1 gives an idea of the structure:

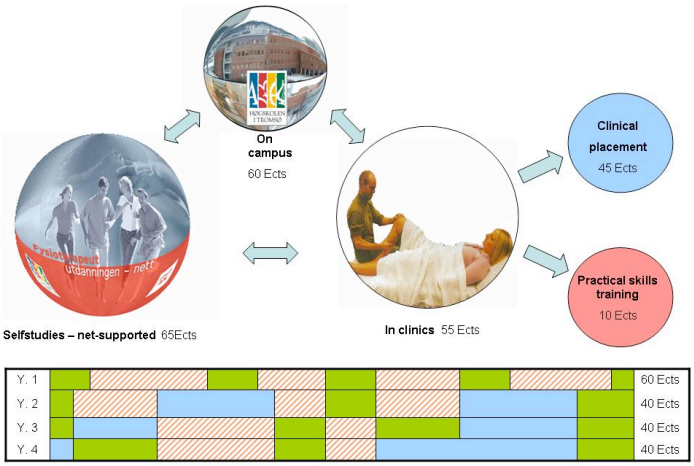

Figure 1: Green areas indicate on-campus periods of 2-4 weeks, shaded pink areas indicate periods of self-studies including weekly, individual practical skills training with the local physiotherapist, and blue areas indicate periods of 4-8 weeks of clinical placements in hospitals or community health services.

This was the first time, as far as I know, that a part time programme was offered in physiotherapy. The University College wanted to offer an alternative programme for those students with family, or other obligations, that were unable to attain a full-time programme in Tromsø. We saw this as an opportunity to innovate and renew the programme in physiotherapy with more emphasis on practice and on self-study. Within the alternative programme, on-campus education consists of 60 European credit points, clinical placement 45 ECTs, as in the ordinary programme, and periods of self-study with weekly practical skills and training with local physiotherapists consist of 65 and 10 ECTs respectively. Physio-net was developed to support the students, especially in periods of self-study, by providing the students with resources and assignments throughout the programme. Physio-net consists of films, text, pictures and internet-resources which is available only to our students and teachers. The idea is that the content will guide and stimulate the students' learning and professional development within a framework where physiotherapy is expressed as a discipline of its own and something far more than put together by submedical diciplines like anatomy, neurology etc.

Physiotherapy is thus seen as a relational, communicative activity that comes out of an encounter between a physiotherapist and a patient, relies both on the physiotherapists' knowledge and competence, on the patients' contributions, and on what they create together in that particular encounter (fig. 2).

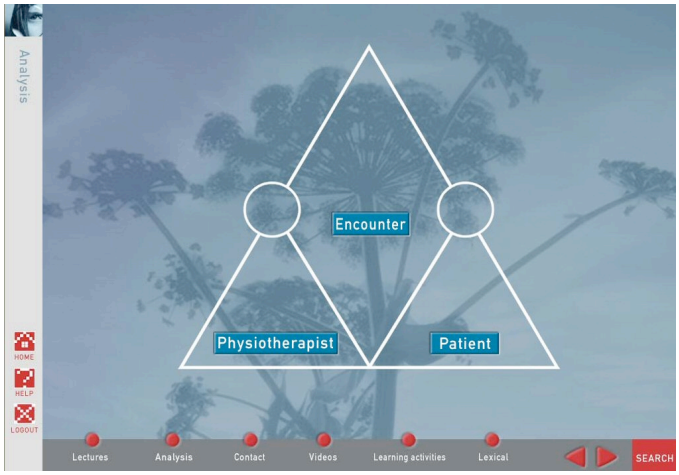

Figure 2: Physiotherapy as an interaction between physiotherapist and patient, where they both bring with them particular competencies and where something is created in that particular encounter.

The study of the tool's impact on reflection

In the particular study we used a specific element in Physio-net which combines film and text. To provide background before discussing what the expert and the students learned from using the tool in analysing their own praxis and what were the effective means in reflection, I will first explain the tool and the different steps in the analysing process.

The tool

First the practioner records themself in a clinical situation with a patient on video. Then the tape is streamed and stored at the server at the University College, and made accessible for the students to work with. They can easily edit the film themselves and divide it into the sequences they find appropriate. Next the hard work of the students describing and analysing what they see on the film begins. In this process they get feedback from a colleague or a teacher. To gain access to the tool, you have to enter ”Physio-net”. Giving the necessary information; username and password, you choose from the menu, in this case: “Analysis”.

Fig. 3 screen shot from Physio-net

Fig. 4 screen shot from Physio-net

I exemplify the guided analysis with “Kari”, which is an expert’s analysis of an assessment situation (figs 3 to 7). We get an overview of all the 55 sequences of this particular examination, where I have chosen sequence 19, which is Body assessment: Functional test: Balance.

Fig. 6 screen shot from Physio-net

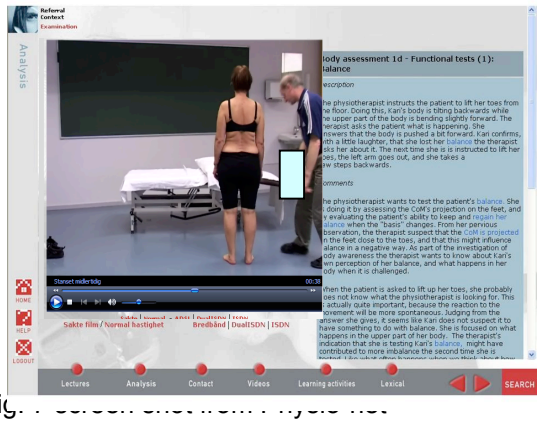

Fig. 7 screen shot from Physio-net

Here the student can see (and normally listen) to what is happening. They can also read the accompanying text which gives a further explanation. The three-dimensional perspective on physiotherapy which emphasizes the relational, communicative aspect in treatment is used as the analytical frame of the comments. Firstly, comments on the physiotherapist’s intentions with tests, observations and palpations are shown. These are followed by reflections on the patient’s reaction to this, and lastly reflections regarding the communication and interaction between patient and therapist are displayed.

The students’ analyses are built up like the experts’, and they make their video into sequences in a similar fashion. The only difference is that we have incorporated a feed back function which makes it possible for students and teachers to be involved in a dialogue of what is going on in the film and the student’s text about it (figures 8 and 9).

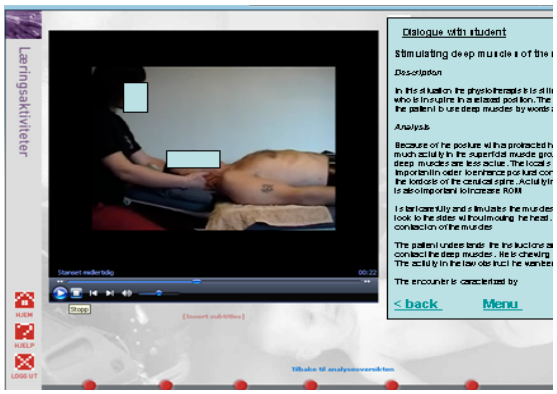

Fig 8: Dialogue about film

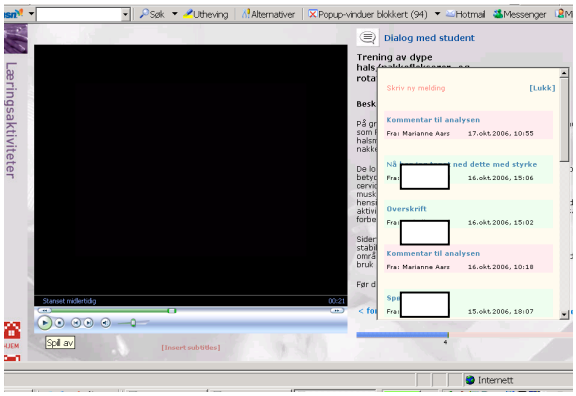

Fig: 9 Feedback function in Physio-net.

Student asks questions, teacher answers and poses new questions, and so on. This makes it possible to discuss each sequence as much as the student wants.

The study: Method and material

The sample of the study is one expert physiotherapist and four students in the beginning of their last year. In the case with the expert clinician, the purpose of making the analysis was to produce material for Physio-net for the students to use in their learning process. I collaborated with the physiotherapist along the way in making her analysis. After she had finished her work, I made an interview with her regarding learning outcomes. In addition, she wrote a personal account to highlight important experiences.

In the case of the students, the 15 students attending the particular class had a compulsory assignment to make an analysis of themselves in a clinical situation. They were all invited to write down their experiences with the assignment in reflective journals, which four of them did. I was the supervisor for one of them. The sample of the four students does, of course, not represent all experiences there are, but merely give an idea of what can be learned by using the tool.

Results and discussion: Learning from reflection?

So what did the expert clinician and the undergrade students learn – and why - from analysing their own practice on net? But first of all – how did they find the task? I have underlined what I believe are key points.

> *Clinician*: ”When I started looking at the video of myself, I thought: This is a gift. Oah: What a tool!
>
> *Stud 1*: ” I really liked this task. It is challenging, but it really looks professional on the net, and think of all the things I may learn from others, seeing their analyses.
>
> *Stud.2*: ”I was over the moon by this task. What a way to learning!
>
> *Stud.3*: ”Despite my bad planning, this has been the assignment I have learned most from. It is learning in many steps: First you have to plan the treatment, then to analyse yourself and the reasons for what you are doing

From these quotes it's clear that they all found the task motivating, relevant and meaningful. If we look into what the clinician learned, this is what she says:

> ”I think the most important lesson, was connected to seeing and listening to the patient. Who is she? What life has she lived? What is her hopes for future life? These are important aspects and influence treatment and treatment outcomes”. (..) ”I've had a lot of critical thoughts about how I related to the patient. Why did I do that? Why did I say that? How did her unwillingness to open up affect me?” ”It was interesting, exiting, timeconsuming and a bit scaring to do this. A lot of tacit knowledge was revealed, explored more or less critically, interpreted and tried to put together differently. (..) I have the project on my mind working with other patients. In that way the analysis-work became a platform for future practice. I try to make small changes to see what happens”

It seems that the clinician has changed focus more to the patient. She is more critical of herself, she is aware of her own knowledge-generating process, and she has made a reorientation regarding future practice. The evidence of learning, with referral to Clouder et al (2000), could be related to the change in practice, and the creation of new perspectives on practice.

The students say:

> *Stud.1*: ”When you make the analysis and pick sequences to work with, you need the ability to find what is relevant and essential. Then there is the professional knowledge part, but we get enough time to seek more information and knowledge if needed.
>
> *Stud.3*: ” Why did I place my hands there? Is this how I instruct the patients and how they react? (..) Looking at oneself treating a patient is something you should do more often.”
>
> *Stud. 4*: ”I spend a lot of time thinking: What is the problem here? What did I do? What does the patient do? (..) It is really helpful to look at my own positions and how I use my hands. I can easily see what I can improve”

The students seem to have learned something about manual skills, clinical reasoning skills and focusing. They also learned about themselves and their relationship with the patient. Even if they are not explicit about future practice, they obviously learned something which promotes reflective praxis. Compared to the expert clinician, they don't say anything about actually changing practice, but they have developed new perspectives on what is going on.

If we look into the model of skill acquisition from the Dreyfus brothers (1986), they outline a process of five steps in clinical competence, going from a novice to an expert. In step 1 and 2 the focus is on performance of manual skills and techniques, while in step 3 the student starts to evaluate the techniques to be appropriate or inappropriate with a particular patient, without being able to adjust them. In step 4 the student has developed an ability to adjust to the situation, based on reflection on his/her actions. In step 5 you are no longer a student, but an expert who is able to intuitively do the right actions. The above quotes from the students imply that they are heading towards level four, were they have identified and recognised what they need to know and how to do it. They are also able to consider different aspects of the situation and analyse systematically their own actions.

On the subject of what was important in learning from this task in analysing your own practice, the clinician says:

> ”What has stimulated my learning process the most, is first of all using so much time to view – and write about my own practice. The critical questions came when writing down.(..) And

> discussing with you and others were absolutely necessary. It gave support and I was challenged. (..) And then the three dimensional perspective (physiotherapist – patient – encounter) was important. I had never learned the same if it wasn't for that structure. It put the person forward and made the physiotherapists place in that person's life clearer. How can we meet?"

What facilitated the students' learning was:

> Stud. 3: " Looking at myself in interaction with the patient gave me moments of sudden insights. A lot of learning by itself " (..) "The work actually started when trying to write down everything. I have an idea of what I do and why when treating patients, but to write it down and make it sound plausible was another story. (..) I found out that it is not until I write down and try to sort out my thoughts that I really understand what I am doing."

> Stud. 4: "The most important lesson from working with this analysis, is how the cognitive process was stimulated while writing. (..) I wasn't really sure what structure I should use, but found inspiration from the guided analyses on Physio-net. I think I emphasized the part about the patient and the encounter." (..) " My supervisor gave feedback on my questions, but no real answers, just new questions which made me think of other aspects. Even if this kind of supervision can be frustrating from time to time, I can now see how much I actually learned from being challenged in this way".

To sum up the effective means in reflection, they were combinations of looking at - and listening to practice, and writing about it. Furthermore the dialogue, with challenge and support from others was important, as was a certain guiding. The structure with the three-dimensional perspective seems to have potentials in such a guiding, both to the clinician and to the students, within this context.

Research regarding the importance of reflection for continuing professional development and students' learning from practice, all focus on the dialogic, critical element in reflection. This could happen working alone, for instance by writing (Bolton, 2005) and by the use of film and text together (Engebretsen, 2006). But most authors emphasize the need for discussions with others, for instance Bolton, 2005, Boud et al, 1985, Clouder & Sellars, 2004, Donaghy & Morss, 2007, Eisner, 1991 and Higgs et al, 2004. Physio-net put all these elements together: the use of film and text, working alone and discussing with others. The tool therefore seems to give very special opportunities to improve reflective competence and professional practice for students and physiotherapists.

So far I have claimed that reflection serves learning as such. This has been opposed by many, for instance Burton (2000), Clouder, (2000) and Higgs et al (2004), who are concerned about whether the reflection is critical enough. Reflection can also serve as conserving and justifying established practice, rather than promote learning, especially when reflection is based on recollection of what happened. The use of Physio-net can oppose this criticism, because the visibility of practice itself and because of the threefold possibility for challenge: the written text, the structure and the dialogue-function. But to actually promote learning and develop practice, the critique from others has to adequate and balanced. From my experience, especially with the students, we have to make careful considerations regarding the students' need for assertion and security, while engaging in discussions over practice. If we scrutinize every aspect of the students' practice, they get frustrated and confused, and limited learning will occur. This concurs with Bolton's finding (2005), who states that too much criticism can be a risk to our whole identity. Therefore we need to adopt an attitude of friendly criticism, collaborating with others if learning and development of practice is the scope.

Conclusions

Internet tools have made it possible to engage in asynchronous discussions over visible practice, and serves as a less private mean compared to other available means so far. Analysing your own practice on net, combining film, text and feedback have strong potentials in the development of reflective clinicians, improvement of practice and in generating knowledge from clinical experiences. The clinician and the students in this particular study became more aware of the patient, their actions, assumptions and the communicative aspect in physiotherapy. What they learnt from doing one analysis of one patient enhanced reflective competencies, which to some extent changed future practice. In order to learn from a dialogical exploration of practice, there must be a fine balance between challenge and assertion, within an atmosphere of trust.

References

Bolton, G (2005): Reflective practice: writing and professional development. London: Sage publ.

Boud, D, Keogh R, Walker, D (1985): Promoting reflection in learning: a model. In Boud, D, Keogh R, Walker, D (eds): Reflection: turning experience into learning, pp18-40, Kogan Page, London

Burton, AJ (2000): Reflection: nursing's practice and education panacea? Journal of Advanced Nursing, 31 (5); 1009-1017

Clouder, L (2000): Reflective Practice in Physiotherapy Education: a critical conversation. Studies in Higher Education, 25 (2);211-223

Clouder, L,. and Sellars, J (2004): Reflective practice and clinical supervision: an interprofessional perspective. Journal of Advanced Nursing, 46 (3); 262-269

Dewey, J (1938): Experience and education. New York: Collier Books

Donaghy, ME, Morss, K (2007): An evaluation of a framework for facilitating and assessing physiotherapy students' reflection on practice. Physiotherapy Theory and Practice, 23 (2); 83-94

Dreyfus, H, Dreyfus S (1986): Mind over machine: The power of human intuition and expertise in the era of the computer. Oxford, Basil Blackwell

Eisner, EW (1991): The enlightened eye: Qualitative enquiry and the enhancment of educational practice. New York; Macmillian Publ. Co

Engebretsen, M (2006): Making sense with multimedia. A text theoretical study of a digital format integrating writing and video. Seminar.net –International journal of media, technology and lifelong learning, 2 (1); 1-18

Higgs, J, Richardson, B & Dahlgren, MA (eds)(2004): Developing practice knowledge for health professionals. Butterworth Heinemann

Jensen, G. M., Gwyer, J., Shepard, K. F., & Hack, L. M. (2000): Expert Practice in Physical Therapy. Physical therapy, 80, 28-43.

Kolb, DA (1984): Experiential learning: experience as the source of learning and development. Englewood Cliffs: Prentice-Hall

Schön, D (1995): The reflective practitioner: how professionals think in action. Aldershot: Arena