Personal reflection in medical education
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Document Version
Publisher's PDF, also known as Version of record

Publication date:
2008

Link to publication in University of Groningen/UMCG research database

Citation for published version (APA):

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Chapter 6. A conceptual framework for personal reflection in healthcare practice and education

Science arose from poetry... when times change the two can meet again on a higher level as friends. — Johann Wolfgang von Goethe

Mensen worden verontrust door de opvattingen (dogmata) die zij over de dingen hebben en niet door de dingen zelf (pragmata). — Epictus, geciteerd door Laurence Sterne

Abstract

Personal reflection is seen as an essential and trainable professional quality in doctors and other health care practitioners and is increasingly promoted in health care education. A more precise understanding of its nature and value for optimal patient care is needed for its purposeful use in practice and for effective encouragement in education. This article offers a conceptual framework to help recognize, use and encourage personal reflection. At the meta-level of reflective practice, ‘scientific reflection’ is distinguished from ‘personal reflection’, while at the operational level, ‘information processing’ and ‘determinative judgment’ are distinguished from ‘sense making’ and ‘reflective judgment’. The main difference between both modes of reflection is their focus on operational processes. Scientific reflection is mainly oriented towards testing the evidence of expert information processing, thereby aiming for the augmentation of determinative clinical judgment, while personal reflection is mainly oriented towards clarifying the process of sense making, which aims to augment reflective judgment. The article also describes the properties of ‘sense making’ and ‘reflection on sense making’ and examines the implications of this analysis for a more profound definition of reflection as a competence necessary for effective educational encouragement.

Introduction

The appropriate use of personal reflection is increasingly seen as an essential and trainable professional quality of physicians and other health care professionals and is promoted in health care education (ABIM, ACP-ASIM & EFIM, 2002; CanMEDS, 2005). Supplementary to evidence-based propositional knowledge and technical-cognitive competences
unifying models for integrative patient care, balanced health care practice and competence-based learning all emphasize personal, tacit knowledge, experience and personal-affective competences (Polanyi, 1974; Schön, 1987; Epstein, 1999; Maudsley & Strivens, 2000; Epstein & Hundert, 2002; CanMEDS, 2005). A main challenge for educators in health care sciences, therefore, is to encourage the development of personal-affective competences such as ‘personal reflection’, as deliberately and effectively as technical-cognitive competences such as ‘scientific reflection’. In this article we aim to provide a conceptual framework that can be used to recognize, use and encourage personal reflection.

Reframing clinical competence
The positive revaluation of the personal-affective dimension of the medical profession is part of rethinking clinical competence. The initial belief was that clinical competence in medicine mainly focuses on diagnostic problem solving and that this is a general and rational competence (Barrows, Norman, Neufeld & Feightner, 1982). During the last decades this conviction has changed. Clinical competence is seen as highly dependent on the particular content and context (Elstein, Schulman & Sprafka, 1978), with knowledge being an essential factor in all competences (Van der Vleuten et al., 2000).

The rise of evidence-based medicine (EBM), in 2001 welcomed in the New York Times Magazine as one of the most influential ideas of the year, was original proposed as a replacement for traditional medicine and a real paradigm shift (Haynes, 2002). A fundamental assumption of EBM is that practitioners with an understanding of the evidence from applied health care research will provide superior patient care compared to practitioners who rely on understanding basic mechanisms and on their own clinical experience. However, thus far, there is no convincing direct evidence proving this assumption, as stated by Haynes (2002), who provided one of the original definitions of the concept of EBM. He mentions that EBM has now evolved beyond the initial conception or misconception of its possibilities and is now attempting to augment rather than replace individual clinical experience and the understanding of basic disease mechanisms. Today, interpersonal skills and professional qualities are seen as essential for clinical experience, understanding and performance (Stern, 2005). The person and the professional cannot and must not be so rigorously separated because medical practice is basically a subjective ‘mindful practice’ (Epstein, 1999).

While EBM initially became the symbol of one-dimensional, science-based medical expertise, CanMEDS is now the almost symbolic
expression of the enriched definition of clinical competence in medicine. CanMEDS stands for the Canadian Medical Education Directions for Specialists (CanMEDS, 2005), which formulates seven key roles of the medical specialist. Only the first role is directly related to the medical expert and decision-maker, and for strategic reasons it was placed in the centre of their model surrounded by the other six interconnected roles of communicator, collaborator, manager, health advocate, scholar and professional.

Challenges to be met
On the basis of this pluralistic view of medical competences, the understanding, use and encouragement of expert technical-cognitive competence can be more precisely organized (Schmidt, Norman & Boshuizen, 1990; Wimmers, 2006), while the central role of expert is not separated from but integrated with the other relevant roles of the doctor (CanMEDS, 2005). Reacting to criticism of EBM, Sackett, Haynes, Guatt & Tugwell (1991) explain that good doctors use both individual clinical expertise and the best available external evidence. Neither alone is enough, as without clinical expertise, practice risks becoming tyrannized by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient, while without current best evidence there is a risk that practice will become rapidly out of date (Sackett et al., 1991).

It is likely that pluralism will also lead to a greater awareness, recognition, use and encouragement of individual experience, including personal-affective relationships and reflective competences. Probably this will not only occur in externally oriented relationships to patients, but also be internally oriented towards the person of the professional him/herself. However, this will not happen automatically, for several reasons. The knowledge that is essential for all competences is also pluralistic, such as objective evidence-based and personal experience-based knowledge about the illness, the patient, the context and professional/personal expertise. The skills needed to handle and integrate these different types of knowledge and the associated feelings are beyond scientific logic and technical reasoning. What are really needed are personal and interpersonal qualities such as personal reflection.

However, authentic and critical self-reflection and observation by professionals is difficult and can be painful (Tigelaar, Dolmans, de Grave, Wolfhagen & van der Vleuten, 2006; Korthagen, 2001), as well as being difficult to acquire and maintain in combination with critical scientific reflection (Grabov, 1997; Taylor, 2007). This may explain why
EBM is easily misunderstood and misused in practice, and why doctors who methodically care for the well-being of their patients often do not take proper care of themselves and become prone to burnout or misconduct, a process that already begins while medical residents are undergoing their clerkship (Prins et al., 2007).

The value of personal reflection
It is here that the value of personal reflection and the need for a more precise understanding of its nature and function in health care practice becomes apparent. A better theoretical understanding of the concept of personal reflection is needed for its use in health care practice, for effective educational encouragement and for educational research. A move forward would be to formulate the ingredients needed for the development of personal reflection as a valid competence. Better understanding is also needed to prevent the development of unrealistic expectations and opinions by educators and students, for example, the unrealistic idea that reflection can be taught in the same way as a technical skill, or the fear that the encouragement of personal reflection will inevitably result in regression to a pre-scientific era of medicine.

Empirical background
In the domain of ‘reflective practice’ in medicine, empirical research by Mamede and Schmidt (2004) has resulted in a five-factor model. The first three factors – deliberate induction, deliberate deduction, testing and synthesizing – form the more cognitive-logical orientation. This orientation is apparent in the solid combination of clinical reasoning and scientific evidence that doctors are expected to use in every aspect of their professional conduct. This is accepted as ‘evidence-based’ practice and given the most attention in professional training (Downie, Macnaughton & Randon, 2000). The mode of ‘scientific reflection’ that we will describe further below is associated with this cognitive-logical orientation. The second orientation which Mamede and Schmidt (2004) describe as the more affective, attitudinal and meta-level dimension of reflection, consists of two factors: openness to reflection and meta-reasoning. This orientation is associated with what we call ‘personal reflection’.

In the domain of patient care, there is empirical support to suggest that mindful-based intervention programmes, provided by health care professionals who are themselves educated in and demonstrate a reflective and mindful ‘presence’ are effective for somatic and psychosomatic categories of patients (Kabat-Zinn, 2005a; Segal, Williams & Teasdale, 2002). There are good reasons to suggest that
health care professionals need to pay attention to the interactions of their own mind, body and behaviour as part of their professional responsibility for personal self-care, both for their own well-being and for balanced conduct (Epstein, 1999; Brown & Ryan, 2003).

Educational research has shown that focusing on separate constructs such as knowledge, skills, problem solving, attitude or unstructured practice learning is inadequate (Schmidt et al., 1990; Schuwirth & van der Vleuten, 2007). Competence-based education is an example of an integrative perspective on learning and functioning in which personal qualities are conceptualized as inbuilt elements of the definition of professional competence. In particular, reflection plays an integrating role in the accomplishment of meaningful integrated wholes, including knowledge, skills, attitudes and behaviour (CanMEDS, 2005; Epstein, 1999).

These empirical findings again make it clear that ‘good practice’ in health care requires the appropriate use of personal reflection, and that the education of balanced professionals requires the effective encouragement of personal reflection.

**An analytical model**

In order to obtain a model for clarifying the characteristics of personal reflection in more detail, we will differentiate on the operational level of reflective practice between information processing and sense making, and on the meta-level between scientific reflection and personal reflection (see Figure 1).

![Figure 1](image-url)  
**Figure 1.** Scientific reflection and personal reflection in relation to information processing and sense making

On the basis of these distinctions, the main difference between scientific reflection and personal reflection can then be explained in terms of their focus on these operational processes (information processing and sense making). We will define ‘scientific reflection’ as being mainly focused on the critical, evidence-based appraisal of clinical ‘information processing’, and ‘personal reflection’ as being mainly focused on clarifying the
process of ‘sense making’. We will argue that this difference in focus influences the aim, process and methods of both modes of reflection, the requirements and difficulties involved in integrating them into practice, as well as the educational methods and strategies for teaching and encouragement.

**Scientific reflection and personal reflection**

Scientific reflection is the critical appraisal of literature and personal practice, grounded in epidemiology and literature, with the aim of optimizing the degree of evidence-based clinical judgments (Sackett et al., 1991). The mode of scientific reflection is a component of the critical rationality orientation underpinning EBM. According to Guba & Lincoln (1994), this means: the use of applied research; the use of experimentation rather than observation only, because observations of complex phenomena can be biased; the use of probabilities to judge truth rather than expecting certainty; and the use of deductive logic to progress, rather than the inductive logic that was characteristic of the basic science underpinning traditional medicine.

Personal reflection is the exploration and appraisal of experience, thus clarifying and creating meaning for the benefit of balanced functioning, learning and development (Aukes, et al., 2007). The mode of personal reflection is a component of integrative practice epistemology in which the existence and value of the professional’s experience and tacit knowledge of ‘good practice’ is acknowledged (Schön, 1983). Our definition of personal reflection is in line with the view that reflection is a meta-activity that usually consists of three phases: awareness of thoughts and feelings during professional conduct, the exploration and analysis of these experiences, and consequently the possibility of new perspectives and behaviour (Atkins & Murphy, 1993).

**Philosophical background**

There are many theories of reflection and reflective practice (Dewey, 1933; Schön, 1987; Kolb, 1984; Habermas, 1984-1987; Mezirow, 1995; King & Kitchener, 1994; Epstein, 1999), with different focuses of attention, processes and aims. This rich assortment can be structured by distinguishing two main orientations, ‘reflectivity’ and ‘reflection’ (Gur-Ze’ev, Masschelein & Blake, 2001; Procee 2006). The purposeful use of personal reflection by health care practitioners in the micro setting of their practice is mainly in line with an orientation toward ‘reflectivity’. This pragmatic orientation emphasizes the use of concrete ‘here and now’ experience, personal knowledge and feedback for functioning, learning and changing practice on a micro-level, rather than formal knowledge and
structural theories about action, learning and organization. This ‘reflectivity’ orientation is applied in a multiplicity of ways in the domain of professional functioning, learning and organization in health care, with well-known concepts such as Schön’s ‘reflection-in-action’ and ‘reflection-on-action’, Kolb’s experiential learning cycle, and Argyris’s analysis of ‘defensive patterns to change’ in organizations. These authors come from the fields of pragmatic philosophy, social psychology and phenomenology and build further on the work of theorists such as Dewey (1933), Schutz (1967), Lewin (1951) and Polanyi (1974).

The second orientation, towards ‘reflection’, comes from critical social theory, characterized by its criticism of technical rationality at a more social and political level (Habermas, 1972). However, a common aim of authors of either orientation is to encourage an awareness of and ability to change ‘framing processes’ through critical reflection on experience, assumptions and beliefs. For those more oriented towards ‘reflectivity’ this is done more at a micro-level, such as in ‘transformative learning’ (Mezirow, 1995), and in the second orientation of ‘reflection’, more at the macro socio-political level such as in the theory of ‘communicative rationality’ (Habermas, 1984-1987) which offers a more profound concept of rationality.

In relation to our subject of ‘personal reflection’ it is worth noting that originally even Mezirov’s theory of ‘transformative learning’ was conceptualized too much as a mere rational process. Subsequent authors who nuanced his work underlined the existence and value of the personal-affective dimension of transformative learning (Grabov, 1997; Taylor, 2007).

Information processing and sense making
The distinction between ‘information processing’ and ‘sense making’ comes from Weick (1995). An example of expert information processing is clinical reasoning and diagnosis, while an example of sense making is understanding experience, primarily one’s own experience as a health care professional, but also the experience of others, such as the patient’s situation and experience. Information processing and sense making are inevitably interconnected and form the heart of all professional practice. Consequently, adequate information processing is impossible without an adequate sense-making procedure. This is true in professional health care practice, but also in layperson situations, such as communication between patients and their families, and obviously between health care professionals and their patients.
As the two processes seem almost identical and because educational training is mainly focused on expert information processing, including evidence enhancement through EBM, there is a pitfall whereby initiatives for the improvement of balanced reflective practice become caught in ‘more of the same’ information processing instead of sense making. An appeal for attention to be paid to other key components of practice besides the evidence, such as the circumstances of the patient (as assessed through the expertise of the clinician), the preferences of the patients, and the individual experience of the health care professional (Hayes, 2002; Sehon & Stanley, 2003), will only be effective if there is a double reflective focus of attention on both information processing and sense making. Therefore, health care students and professionals must be encouraged to become aware of, clarify and make proper use of the underlying process of sense making. This is precisely the function of personal reflection.

**Differences between information processing and sense making**

Information processing and sense making are intertwined and may seem almost identical. For example, consider the term ‘interpretation’. While appearing to be synonymous with sense making, it is actually an aspect of information processing. An interpretation can be discussed, refuted or accepted fairly accurately using explicit rules or concepts (Weick, 1995). Rational thought, deliberate interpretation and high-level information processing are key elements of human striving, achievement and self-regulation, considered in general and in particular professional domains (Vohs & Schmeichel, 2007). Medical problem solving is mainly a sophisticated form of information processing: technical and logical information processing which weighs and interprets data, resulting in interpretations/diagnoses. In other words, it is the professional accomplishment of medical ‘facts’ and ‘diagnoses’.

Sense making is a necessary condition for information processing and problem solving, but it is not a technical problem in itself. Other terms for sense making that we will use synonymously are ‘framing’, ‘ordering’ and ‘constructing’ (Mezirow, 1995). For example, medical ‘facts’ are not only accomplished, they must also be ‘made’ relevant. This is done by the doctor within his/her medical treatment perspective and by the patients within their life perspective. A communicatively competent doctor is capable of adjusting his/her expert medical information to match the patient’s (layperson) information processing competence. Proper adjustment is based on awareness that one’s medical perspective is different from the patient’s life perspective, and that within these perspectives different modes of ‘relevance’ or ‘meaning’ arise (Groffen
& Aukes, 1979). This is precisely what sense making is about, and this can be made conscious and clarified through personal reflection.

Sense making influences the way we behave and react to situations, what we select and what we treat as the relevant elements or aspects of the situation or our experience. It influences how we set the boundaries of our attention, how we colour and define problems, and what we consider to be ‘normal’ behaviour by ourselves and others (Schön, 1987). The process of sense making is not just a rational process, as, for example, was initially thought in the theory of ‘transfomative learning’ (Grabov, 1997; Taylor, 2007). It contains a rich variety of components such as rational and irrational thoughts and feelings, expectations, values and intuitions, not to forget bodily sensations. Sense making is an undercurrent and a process which is often taken for granted yet colours all our interpretations, judgments, feelings and actions.

Because sense making is such an influential force in information processing and behaviour, it is often taken as the systematic level and is targeted as the point of impact. This occurs for example in patient education, such as in the therapeutic training of patients using Cognitive Emotive Therapy (Beck, 1975), but it is also targeted in an attempt to influence the professional behaviour of doctors, as well as the behaviour of potential patients, such as in pharmaceutical marketing strategies (De Laat, Windmeijer & Douven, 2002; Moynihan, Heath & Henry, 2002).

Each professional discipline is first and foremost identified as ‘professional’ by its characteristic mode of expert information processing which stands in the foreground, for example, lawyers are experts in legal information processing and have their own behavioural codes. However, this characteristic expert information processing is, as mentioned, inevitably connected with the underlying process of sense making which is therefore just as characteristic for the professional. In addition, it is essential to note that patients also use both information processing and sense making to establish ‘facts’, ‘diagnoses’ and ‘meaning’. This phenomenon - the customary ‘methods’ that people use to accomplish meaningful facts (so-called ‘ethnomethodology’) - was studied intensively by Garfinkel (1967).

**Judgments**

A major difference between information processing and sense making in health care is the use of different modes of judgment: ‘determinative judgments’ and ‘reflective judgments’, based on a Kantian epistemology (Procee, 2006; Khushf, 1999). Determinative judgments situate
something particular under a given universal concept or idea, they are used, for example, when ordering signs and symptoms to form a medical diagnosis. Professional expert information processing, such as in sophisticated clinical diagnosis in medicine, is mainly built on determinative judgments. Determinative judgments are to a great extent rule governed and can therefore be appraised in formal examinations or peer discussions with explicit criteria and great accuracy. In the process of sense making it is mainly reflective judgments that are in operation. Reflective judgments are operational ‘when one seeks to bring forward some kind of unity about particulars without having at one’s disposal a general concept or idea’ (Procee, 2006). This occurs, for example, when a doctor tries to understand the patient’s situation, experience, perspective or way of making sense, or when a doctor tries to understand his/her own experience, thoughts, feelings and bodily sensations. Reflective judgments are not based on explicit rules but on intuition, feeling or tacit knowledge, and can therefore not be appraised with the same criterion of accuracy that is used for determinative judgments. This does not mean that they cannot be appraised at all, as we will see.

**Product and process**

Another subtle difference between information processing and sense making is the distinction between product and process. Sense making is clearly about an activity or a process, whereas ‘interpretation’ and ‘puzzling’ (both forms of information processing) can be processes, but are mostly used to describe a product, such as a diagnosis. People make sense of something, but even so, it is the activity rather than the outcome that is in the foreground (Weick, 1995). Being result-oriented in thinking and action (thinking within an action mode) is not only a professional but also a human habit: ‘Ordinarily, when we undertake something, it is only natural to expect a desirable outcome for our efforts. We want to see results, even if this is only a pleasant feeling’ (Kabat-Zinn, 2005b). Scientific reflection is typically focused on testing the claimed results, whereas personal reflection is typically focused on exploring the tendency or the desire for results and the tendency to believe what we desire.

**Properties of sense making**

The main properties of sense making will now be described in more detail. Initially it is worth mentioning that reflection on sense making at the meta-level is not the same as sense making at the operational level, just as scientific reflection on clinical reasoning (meta-level) is not the
same as clinical reasoning (operational level). The operational and meta-levels are interwoven, theoretically and practically, and are therefore experienced as a ‘whole’ by health care professionals in daily practice. This ‘whole’ is deconstructed to provide a better understanding of its components, as well as to recognize and use them properly and integrate them to the benefit of enhanced balanced conduct. We will describe the following properties: identity, self-referential / subjectivity, requisite variety, and unconscious aspects.

Identity
The establishment and maintenance of identity is a core preoccupation in sense making. Identities are to a great extent constructed out of a permanent process of interaction (Strauss, 1956; Weick, 1995). This process starts initially with the interaction between mother and infant that facilitates the child’s basic trust and the transition to a true or a false self, being more or less autonomous, and offers a healthy or unhealthy sense of omnipotence which will naturally be frustrated as the child matures (Winnicott, 1989). According to Mead, identity construction is continuous, with identity undergoing continual redefinition throughout life as a consequence of the interaction between child and family, and later on between individual and school, work and society (Strauss, 1956).

In education, the choice to become a doctor, to undertake the necessary study, and the choice to eventually stop this or to undertake specialist training, is part of an enduring process of sense making. Encounters with significant others, within and outside the curriculum, play an important role in this process. The self-concepts of students, the shaping of their personal and professional identities, their ability to connect with and their commitment to patients, peers and the profession, are partly formed and modified by how they experience or believe in significant others, such as their parents and teachers in the past and their supervisors, peers and patients in the present. Examples are (a) the first encounters of students with real patients, colleagues and supervisors on the ward, (b) how others react to, evaluate, give feedback or assess their performance, and (c) how students in turn respond to these reactions. ‘Interaction’ works as a three-stage process of action, reaction and reaction-on-reaction (Weick, 1969), and it is the last stage in particular that is important for exploring the effects of interaction on sense making.

Self-referential/subjectivity
The close connection with the development of identity reveals that sense making by health care professionals is not only goal and action-driven, enabling appropriate diagnoses (information processing) and therapeutic
action, but also occurs in the service of maintaining a consistent, positive and ‘true’ professional and personal self (Winnicott, 1989). In other words, making sense out of another’s experience, such as the doctor’s contextual understanding of the patient’s situation, is also to a great extent simultaneously self-referential. A reflective health care professional is aware of this phenomenon or has an open mind to this possibility.

Emotions and feelings play an important role in colouring and shaping the process of sense making and the self. Personal reflection can be seen as a cone of light that spreads backward from a particular situation in the ‘here and now’. This cone of light will give definition to portions of lived experiences, and because it begins in the present, projects undertaken and feelings that occur in this particular context will affect any backward glance and illuminate what is seen (Schwartz, 1991). Emotions also affect sense making because recall and retrospection tend to be mood congruent (Weick, 1995).

Requisite variety
The self-referential quality of sense making by the health care professional indirectly influences the quality of patient care, professional development and cooperation, and self-care. The more and the richer the experience that young health care professionals foster and maintain access to (instead of completely identifying with the professional role), and the more reflective perspectives on a situation they can utilize, the more complementary meanings they should be able to read into any situation, and there will be less likelihood that they will find themselves confused, surprised or astonished (Louis, 1980). For this reason, a criterion for the quality of reflection is the number and variety of perspectives the health care professional is able to apply to a given situation (Boenink, de Jonge, Smal, Oderwald & van Tilburg, 2005).

In other words, the richness of personal experience, language, thoughts and feelings is a crucial resource and starting point in sense making, personal reflection and empathetic communication with others. This principle is an example of Ashby’s law of requisite variety (Ashby, 1958) which states that ‘the larger the variety of actions available to a control system, the larger the variety of perturbations it is able to compensate’. Thus, if health care professionals have a limited range of thoughts, feelings and language, they are not sensitive enough to detect and handle the richness of the external input properly, or thus will experience the potential richness as ‘perturbation’, or will not be aware of their selective perception and enactment. ‘Enactment’ is the phenomenon that
environments are not ‘given’ but to a high degree constructed by the actors (Weick, 1969).

**Unconscious aspects**
The psychological events of ‘transference’ and ‘counter transference’ are well-known examples of the unconscious aspects of sense making and reaction. Transference is the unconscious displacement of thoughts, feelings and behaviours from a previous significant relationship onto a current relationship (Patterson, 1959). This strong unconscious mechanism, which was conceptualized by Freud, occurs not only in therapeutic relationships but also takes place in any relationship characterized by affection, hierarchy and/or dependency (Patterson, 1959; Baumlin & Weaver, 2000), which is true of all health care relationships and educational relationships. ‘Counter transference’ is the complement to transference. Usually, two types of counter transference are distinguished: transference by a person higher in a hierarchy, such as a doctor or a teacher, to a dependent person such as a patient or a student; or the unconscious reaction of a person higher in a hierarchy to another person’s transference. Obviously, this last type is more interesting because it takes into account the actual three stage process of interaction – action, reaction and reaction-on-reaction – between both persons (Robertson, 1999). Transference and counter transference can differ in intensity, stability and differentiation (Körner, 1999).

The effect of transference and counter transference in health care practice and education can be positive or negative. A positive effect, for example, is the stimulation of the identification of a resident with a supervisor as a positive role model. Positive transference is a central mechanism in ‘modelling’, one of the strongest characteristics of interactive practice learning (Bandura, 1986). However, transference can be negative, for example, when cynical reactions from established experts and managers towards newcomers with a so-called idealistic or unrealistic attitude towards becoming ‘a good’ doctor lead the latter to develop a similar attitude. Another case might be a disappointing discovery by a student, who finds that his/her belief in ‘a good doctor’ or ‘a good nurse’ has inevitable personal, professional and practical limitations. Depending on the intensity, stability and differentiation (Körner, 1999) and on the quality of personal reflection on that experience, cases of negative or counter transference can result in either discouragement and frustration or in encouragement and the taking of another step in the process of professional and personal growth.

**Properties of reflection on sense making**
It is essential for personal reflection that the individual learns to focus personal reflection on the process of sense making rather than focusing automatically on expert information processing. Usually three stages of reflection are mentioned in educational models: (1) awareness of experience, (2) the inquiry into selected experiences and, out of these, (3) the possibly of establishing new perspectives and action. These are described in practical terms in educational strategies such as reflective learning, enhanced experiential learning and portfolio-based learning (Kolb, 1984; Korthagen, 2001; Schön, 1987; Snadden, 1999). However, even in these instances attention too readily passes to information processing. As the ability to focus reflective attention on the underlying process of sense making is so delicate and easily mistaken, we will describe two basic properties of ‘personal reflection on sense making’: its retrospective nature and the quality of mindfulness.

The retrospective quality
The act of personal reflection on sense making is retrospective (Weick, 1995). This is particularly with the inquiry into selected experiences. The idea of reflection in retrospect is derived from Schutz’s analysis of ‘meaningful lived experience’ (Schutz, 1967). People only know what they are doing after they have done it. This retrospective character has to do with the fact that time exists in two distinct forms, as pure duration and as discrete segments. Pure duration can be described as a ‘stream of experience’ with a rich wholeness of thought, feelings and sensations (Kabat-Zinn, 2005a). However, when talking about or reflecting upon experience, distinct episodes are implied. In Schutz’s words:

‘When, by my act of reflection, I turn my attention to my living experience, I am no longer taking up my position within the stream of pure duration, I am no longer living with that flow. The experiences are apprehended, distinguished, brought into relief, marked out from one another. For the act of attention, and this is of major importance for the study of meaning, presupposes an elapsed, passed-away experience, in short, one that is already in the past.’ (Schutz, 1967. p. 51)

The mindfulness quality
The other quality of personal reflection is mindfulness: it is basically a non-judgmental and open-minded attitude towards experience (Kabat-Zinn, 2005a). This is particularly true with awareness of experience. Mindfulness ‘simply is a practical way to become more in touch with the fullness of your being through a systematic process of self-observation, self-inquiry, and mindful action’ (Kabat-Zinn, 2005b, p. 16). When a person only reflects automatically, superficially or in too much of a hurry,
the results do not make sense. Therefore, mindfulness is a basic aspect of personal reflection and balanced conduct. It entails being aware in the present moment, without self-judgment or other forms of conceptual overlay, of the arising and passing away of phenomena in the field of direct experience.

This mindful aspect can be understood in terms of attention, intention and attitude (Shapiro & Schwartz, 1998). ‘Attention’ refers to paying attention and the extent to which this is continuous, selective and percussive. ‘Attitude’ refers to the manner in which attention is paid, examples being equanimity, curiosity, acceptance or in a non-judgmental manner. ‘Intention’ refers to the motivation leading to personal reflection and why it is undertaken (Shapiro & Schwartz, 1998).

By reflecting non-judgmentally on their own or another’s experience, health care professionals are more likely to recognize situations for what they are. When they function mindfully, their attention is not entangled in the past or future, they do not act judgmentally or reject what is occurring at that moment, they are present (Germer, Siegel & Fulton, 2005, p.p. 5). ‘Presence’ is a significant quality of balanced personal and professional conduct, and ‘good practice’. When the second phase of personal reflection, the inquiry into selected experiences, is undertaken mindfully it is characterized by the willingness and ability to bring interest, enthusiasm and an attitude of detailed exploration to experience (Germer et al., 2005).

Reflection as a competence

After this analysis of sense making and personal reflection on sense making, we will now describe the implications for reflection as a competence of the doctor and other health care professionals. In our opinion, a definition of reflective competence is required to enable its effective encouragement in education. In this context it is remarkable that in CanMEDS 2005, which laid down the doctors’ competence framework, the ‘professional’ is one of the roles distinguished, yet reflection is not distinguished as a competence (Slaets, 2007). An explanation for this weakness is the fact that the CanMEDS uses the concept of ‘role’ which differs from the concept of ‘competence’. The CanMEDS role concept is in line with socio-psychological role theory (Merton, 1968). It is the basis of a redefinition of the position of doctors in terms of a set of seven new functions or roles to be played that are connected with internal and external expectations. The advantage of the CanMEDS framework is that ‘roles’ are usually
more concrete and recognizable than ‘competences’. The wide application of CanMEDS may result in a rising awareness and acceptance of these new roles, including their internal and external expectations, possibly resulting in more explicit norms which will conform to practice as well as educational encouragement and assessment. The disadvantage, as mentioned above, is the misconception of the ‘professional’ as a separate role. Analysing the professional aspect as a particular role may lead to the mistaken belief that the ‘professional’ can and should be trained and assessed separately from other roles. This is odd, because it seems more coherent that the ‘professional’ doctor is the one who is able to integrate all the other roles and use them professionally when necessary. The role of the ‘expert’ is at the heart of the CanMEDS’ framework, suggesting that it is the expert who is the integrator.

We have explained that the overall function of personal reflection by the doctor is to coordinate and optimize balance. We therefore suggest taking reflection – scientific and personal reflection – as a valid competence that is required to preserve the doctor’s ‘reflective equilibrium’ as a prerequisite for balanced conduct, that is, the accomplishment of all roles when needed.

Components of a reflective competence

A profound definition of reflection as a competence should contain the two modes of scientific reflection and of personal reflection, that is, purposeful attention for and critical inquiry of clinical information processing and of sense making. Such a complete competence integrates both the critical-logical and the personal-affective dimensions of medical conduct.

Personal reflection has (a) an internal oriented application: being self-reflective and attentive, taking internal data seriously, such as sensations, images, feelings, and thoughts (SIFT) that arise during interaction with patients and colleagues (Epstein et al., 2008); (b) an external oriented application: reflective / communicative / empathetic conduct in the interaction with patients, family, and colleagues; (c) and awareness of the interaction between these two applications.

Personal reflection is founded on a mindfulness attitude – how attention is paid, such as with equanimity, curiosity, acceptance, and in a non-judgmental fashion.

The intention of personal is important: the motivation behind reflection and why it is undertaken: for the benefit of balanced conduct, learning and development, and own well-being.
Recapitulation
Our conceptual analysis clarifies that without a complete and profound reflective competence the several fragile aspects of integrative medicine, balanced conduct, professional and personal learning, and the self-care for the doctor’s own well-being, are too easily eroded or lost. Because scientific reflection is well described and acknowledged as the critical meta-component of ‘deliberate practise’ in medical education - and because from that perspective personal reflection is often not well understood - we have concentrated mainly on the dimension of personal reflection. The mentioned components of personal reflection as a genuine part of an excellent doctor, make clear that personal reflection is inevitably connected with the fragility of the doctor / student. These components must be considered in more detail for encouragement, assessment and further educational research.
References


