The use of soft system methodology (SSM) in a serviced-focussed study on the personal tutor’s role

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Summary Soft system methodology (SSM) is described as a system-based methodology for tackling real world problems. SSM may be used as a means of articulating complex social processes in a particular way. SSM allows peoples’ viewpoints and assumptions about the world to be brought to light, challenged and tested. This paper reports on the use of SSM in a service-focussed study (SFS) to explore the role of a personal tutor in nurse education. [Checkland, P., 1981. Systems Thinking Systems Practice. John Wiley and Sons, Chichester] highlighted the importance of considering cultural, social and political systems in the analysis. The seven stages of SSM are discussed in relation to the SFS and some of the findings are expressed through a ‘Rich Picture’. It encourages commitment, brings diverse interests together and opens up the organizational culture. It also enables feasible and desirable changes to be recommended within the context of limited resources and competing demands upon lecturers’ time. The SSM was an appropriate systematic model for this study and could be potentially useful in nurse education research. © 2007 Elsevier Ltd. All rights reserved.

Introduction and background information

There are a variety of arrangements to support pre-registration nursing students while they engage with the theoretical and practical elements of their course. The personal tutor system is recognized as an effective method of ensuring that each student has access to a wide range of support services and that their academic progress and personal development is monitored by a skilled member of academic staff (Harrison, 1990). The personal tutor system has been subjected to major changes in the current context of nurse education. A successful outcome i.e. a competent student ‘fit for practice’ could be considered to rely partly on a

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clear and robust personal tutor system. A service-focussed study (SFS) was undertaken to explore the personal tutor’s role and practice in a pre-registration nursing programme at one School of Nursing and Midwifery in a Higher Education Institution (HEI) in 2005. This paper aims to discuss the process and the use of a soft system methodology (SSM) in this SFS. The findings of the study are reported in a separate paper.

Organizational development (OD) encompasses a vast area of management theory and practice. French and Bell (1999) defined OD as a planned, systematic process in which applied behavioural science principles and practices are introduced into ongoing organizations towards the goal of increasing individual and organizational effectiveness. There are a number of methodologies specifically dedicated to OD. The systems framework is fundamental to organizational development as organizations are complex, dynamic and may focus on goal-orientated processes.

Systems are complex networks of interrelationships (Senge, 1990). There are different levels of systems in a hierarchical ordering that varying in sizes and complexity. The School of Nursing and Midwifery in this study could be described in system terms as it has a predetermined objective of ‘fit for practice’ that the interrelated components strive to achieve. All systems are either open or closed. Closed systems are completely autonomous and independent of occurrences around them (Iles and Sutherland, 2001). In open systems, information and energy are constantly being imported and exported across system boundaries with constant change but also have the appearance of stability (Hatch, 1997).

The open system provides a conceptual model that is fundamental to modernist organization theories (Hatch, 1997). The system takes in inputs from its environment. These inputs are then transformed into outputs, a process that sustains the life of the system. The input in this instance is the personal tutor system which is influenced in part by external forces such as the quality assurance agency (QAA) and government policy. Understanding how these external forces affect the organization can help to explain some of its internal behaviour.

Open systems exhibit several common characteristics. The following are some of the key properties of open systems described by Cummings and Worley (2000): transformation and outputs, boundaries, feedback, equifinality and alignment.

Inputs consist of human resources coming into the system. The raw materials come from the external environment. The raw materials in this study are the people who want to become nurses. Transformation is the process of converting inputs into outputs. It is carried out by a production function composed of a social and technological component. The social component were consists of people like the lecturers, administrative staff and their working relationships. Technological components involve tools, techniques and methods of production such as E-learning and other innovative methods of teaching and assessing students.

Organizations develop mechanisms for transforming incoming resources into goods or services. This School of Nursing is identified as an open system dependent on the environment. It endeavours to transform pre-registration nursing students into autonomous competent practitioners fit for registration. The results of what was transformed by the system were sent to the environment. Nursing students who successfully completed the course represent the outputs ready to leave the system.

Boundaries help to distinguish between systems and environments. Defining social boundaries is difficult because of the continuous inflow and outflow of energy and material through the boundaries. These include new students entering the system each September, and a few lecturers exiting and new lecturers entering the organization. Just like systems which can be considered relatively open or closed, the permeability of boundaries also varied from fixed to diffuse. The boundaries of the support systems available to students depend on the personal tutor’s own interpretation of their role and some were more transparent than others. As most personal tutors are not trained for their job, there is a lack of understanding about the boundaries of their roles. Open systems have more permeable boundaries than closed systems. The interconnection of different parts in this School of Nursing and Midwifery shared an environment, with each part having some freedom to act independently.

Feedback is information regarding the actual performance or the results of the systems. According to Cummings and Worley (2000), not all such information is feedback; only information used to control the future functioning of the system is considered feedback. The results of this SFS can be used to maintain the system in a steady state or to help the organization adapt to changing circumstances.

The concept of equifinality suggests that the end results may be achieved in many different ways and from different initial conditions. There is no universal best way to design an organization such as this School of Nursing and Midwifery. A system’s
overall effectiveness is determined by the extent to which the different parts are aligned with each other. This alignment concerns the relationships between inputs and transformations, between transformations and outputs, and among the sub-systems of the transformation process. The personal tutor system will need to be aligned with other systems such as the link lecturer system in the NHS Trust. The systemic perspectives view the relationships among the various parts of a system as a whole, and the search for misfits among the various parts and subsystems such as the academic, pastoral and the clinical parts correspond to making a diagnosis on the whole personal tutor system.

The PESTELI analysis

A formal analysis of the organization was carried out prior to the consultation of the various stakeholders using the PESTELI checklist (see Table 1). PESTELI is a checklist for analysing the environment of an organization (Iles and Sutherland, 2001). It was used to find out which factors in the environment are helpful to the personal tutor system in this School of Nursing and Midwifery and which may impede the School from achieving an effective system. The analysis highlights the complexity of the reality. Nurse educators are responsible for meeting the quality assurance (QAA) standards of its local stakeholders and promoting student retention and their educational progress are important aspects of this process. It is hoped that this SFS could enable the organization to respond to these forces and create a change initiative. A summary of the analysis is presented in Table 1.

The use of soft system methodology (SSM) in a serviced-focussed study on the personal tutor’s role

Table 1  The PESTELI analysis related to the organization in this SFS

<table>
<thead>
<tr>
<th>Political factors</th>
<th>Economic influence</th>
<th>Sociologic trends</th>
<th>Technological innovations</th>
<th>Ecological factors</th>
<th>Legislative requirements</th>
<th>Industry analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shortage of nurses</td>
<td>Cost of educating one nurse is £30,000</td>
<td>Demographic changes, more mature students</td>
<td>New ways of thinking and organizing the personal tutor system. It is much easier to get in touch and communicate with students via the e-mail system</td>
<td>The School of Nursing is part of a big organization. There are common aims. The ecological balance between the students’ needs, stakeholders, and NHS Trust service providers and link lecturers and personal tutors and students’ mentors in the clinical areas maintain policy makers</td>
<td>The personal tutor system is recommended and adopted in all other Schools in this organization. There are policy documents specific to the role to personal tutors</td>
<td>The organization has a worldwide reputation and thus attracts many applicants with diverse backgrounds and life experiences</td>
</tr>
<tr>
<td>Increase in nurse-training places</td>
<td>High dropout rate of nursing students</td>
<td>Located in inner city with emphasis on local recruitment. Diversity of student in ethnicity, culture and background, many with social problems</td>
<td></td>
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<td>Increase in the nursing workforce</td>
<td>Students not fit for practice</td>
<td></td>
<td></td>
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<td>Wider access to university education</td>
<td>Review by QAA for higher education</td>
<td></td>
<td></td>
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<td>Fitness for Practice curriculum</td>
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Soft system methodology

The Soft system methodology (SSM) is identified for engagement with the organization and stakeholders in this study. SSM is a qualitative methodology developed by Peter Checkland and his colleagues.
at Lancaster University (Checkland, 1981). It is described as a system-based methodology for tackling real world problems. SSM may be used as a means of articulating complex social processes in a particular way. Everyday events are perceived differently by all the people involved in a system. SSM allows peoples’ viewpoints and assumptions about the world to be brought to light, challenged and tested. The traditional SSM model comprises seven distinct stages that can be taken as an iterative process or sequentially (see Fig. 1). According to Checkland (1989), this sequence does not have to be strictly adhered to.

Basically SSM starts with a real world problem i.e. the systems which contain the problem follow by developing some ‘ideal’ models of how those systems might work better. The ‘ideal’ models are then compared to the actual situation. The differences between the models and reality become the basis for planning change (Dick, 2002) and these differences need to be understood before change can be planned (Iles and Sutherland, 2001).

According to Checkland and Scholes (1990), Stage 1 is about finding out the problem situation first experienced by the author. The personal tutor system has been in operation in the School for many years and was designed to help all students when they commence higher education. The current practice varied between lecturers with some taking their role more seriously than others. Not all students get to see their personal tutor regularly in the first year. This can be less than satisfactory in some instances where lack of support is identified as the main cause of student dropout. This stage involved identifying who the key players were. A stakeholders’ analysis was carried out which identified the lecturers and students as the primary stakeholders. A stakeholder is a person or group having a vested interest in the organization’s functioning and objective (Cummings and Worley, 2000).

The problem situation is expressed through a Rich Picture in Stage 2. Rich Pictures are diagrammatic representations of a situation’s entities, structures, processes, relationships and issues (Checkland and Scholes, 1990). It provided a representation of how the personal tutor system can be looked at and thought about (see Fig. 2).

Stage 3 involves articulating a ‘root definition’ of relevant systems. Root definition is normally regarded as a rigorous description of what systems have to do, who is going to do it and who is responsible for it being done (Mason and Willcocks, 1994). There are six elements that make up a well-formulated root definition using the mnemonic CATWOE (Underwood, 1996). The application of this definition to consider the elements of this study is shown in Table 2 below.

From the root definition of a system, a conceptual model of system was developed in Stage 4. Such models are designed to be the ‘ideal’ system to do the job (Underwood, 1996). The models monitor and control the effectiveness, efficacy and efficiency of the model system. By undertaking consultations and interviews, descriptions of how the relevant parts of the personal tutor’s role might ideally function were developed.

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**Figure 1** Seven-stage model of SSM (adapted from Checkland and Scholes (1990)).
Stage 5 is the stage that refers back to the real world. At this stage, the conceptual model built at Stage 4 was compared with the real world expression at Stage 2. The purpose of this comparison was to generate debate about the possible changes which might be made within the personal tutor system and what the implications of that might be for all those involved.

Stage 6 is used to identify the possible changes which vary in desirability and feasibility. In this

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**Figure 2** Rich Picture of personal tutors. Key: CAD: Competency assessment documents, DoH: Department of Health; NMC: Nursing Midwifery Council; PT: Personal tutor.
Table 2  Root definition in theory applied in practice

<table>
<thead>
<tr>
<th>Key elements of the theoretical mode</th>
<th>Key elements applied in practice</th>
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<tbody>
<tr>
<td>C (Customers)</td>
<td>Students</td>
</tr>
<tr>
<td>A (Actors)</td>
<td>Lecturers</td>
</tr>
<tr>
<td>T (Transformation)</td>
<td>Educational, pastoral and clinical support</td>
</tr>
<tr>
<td>W (Weltenshanung)</td>
<td>To support students to complete pre-registration course successfully</td>
</tr>
<tr>
<td>O (Owners)</td>
<td>Head of School, Head of Pre-registration Education</td>
</tr>
<tr>
<td>E (Environment)</td>
<td>Colleagues, teaching work load, administrative, personal tutees caseload, available information resources, knowledge about others sources. Shared offices- lack of privacy</td>
</tr>
</tbody>
</table>

study, this stage raised several question such as: Are the changes in the practice of the personal tutor role desirable? Is it technically an improvement rather than a superficial change? Are the changes feasible and does this fit the culture within the organization? Stage 6 developed from the data analysis and discussion of findings and enabled specific recommendations to be made as to how per-
sonal tutor’s role could be enhanced to support pre-registration students to complete their course programme successfully. Stage 7 is the last stage where the most desirable and feasible changes identified at Stage 6 are implemented.

The stakeholder identification and engagement

This study involved several stakeholders. Identifying the key stakeholders in the personal tutor system was a prerequisite before any consultations could take place. Stakeholders were identified as primary, secondary and tertiary stakeholders. The primary stakeholders were the tutors and students who were closely and directly affected by the personal tutor system. The secondary stakeholders comprised of the pre-registration Programme Leader, Common Foundation Programme coordinator and Branch Leaders (in adult, child and mental health nursing) who was not directly affected by the personal tutor system but could affect the outcome of the system. The tertiary stakeholders had a strategic influence on the organization and included the Head of the School of Nursing, the Head of Pre-Registration Education and the NHS Trusts. Permission for undertaking the initial stakeholder consultations to contract for the service analysis was sought from and agreed by the Head of the School. As the views of the key stakeholders were to be sought, a non-probability, purposeful sampling approach was utilized, thereby enabling access to the most representative groups (Robson, 1993). The rationale for this was that the aim and objectives of the study were to provide an insight into the personal tutors’ experiences of supporting pre-registration students and not to generate large-scale statistical findings that could be generalized to a wider population (Seidman, 1998). All lecturers who were personal tutors to pre-registration nursing students were included for selection. Ten lecturers were randomly selected by means of an Excel programme.

The secondary stakeholders were recruited via telephone calls and in person to discuss the aim of the study and why their contributions were vital. Some of the findings were expressed through a Rich Picture which is a diagrammatic representation of the structure, processes and issues arising in the personal tutor system (See Fig. 2). The Rich Picture captured the relationships, the value judgements people made and the ‘feel’ of the situation in the personal tutor system.

The methods used in this SFS included documentary analysis and semi-structured interviews. The interview schedule was developed from the critical review of the literature. Content analysis was used to categorize the data. Analysis of documents relevant to the School policy on personal tutors, the personal tutor handbook, the pre-registration handbook, the students’ file records and guides on being a personal tutor was undertaken.

The conceptual model formulated from the root definitions of the personal tutor system is presented in Fig. 3. The model would monitor the effectiveness, efficacy and efficiency of the personal tutor system. The number of students successfully completing the pre-registration programme and the attrition rate will test the effectiveness to some extent even though some students may never complete the programme due to a variety of reasons. How the personal tutor system operates will test the efficacy of the system and how much ‘effort’ is used in the transformation process would test its efficiency (Stokes and Lewin, 2004).

Discussion

The encounter between a personal tutor and student essentially delineates all inputs and outputs of an education system. At this fundamental level, the responsibility and accountability for quality is individual and interpersonal. This service-focussed study has shown that the personal tutor’s role is multifaceted and difficult to fulfill with increasing student numbers and the competing demands on lecturers’ time. The limited literature that was available for review attempted to clarify the personal tutor’s role in terms of functions and not in relation to outcomes (Gidman, 2001; Philips, 1994).

All students like to feel that they receive the same level of support as their peers. The organization has a responsibility to its staff to identify clearly what is being offered by a personal tutor and under what terms, since providing quality support is extremely time consuming yet rarely considered when reviewing staffing establishment (Wilson, 1996). Feasible and desirable changes are identified in Stage 6 and 7 of the SSM. It generates debates about possible changes which can be made within the organization. According to Orlikowski (1996), most organizations adopt the principles of continuous change by being flexible to accommodate everyday contingencies, breakdowns, exceptions, opportunities and unintended
consequences. Organizations that perceive change as constant and inevitable will be proactive and take the chance that change offers (Davies and Nutley, 2000).

It is vital to have clarity and ongoing discussion about how the personal tutor could support students to successfully complete the programme leading to their registration as a qualified nurse taking into account changes in the environment. The SSM approach to the review of the personal tutor’s role has proved useful. It enabled the analysis of a complex role within a large organization. Checkland (1981) highlighted the importance of considering cultural, social and political systems in the analysis.

It is hoped that the evidence and insights gained from the SFS will give the organization the impetus to focus on enhancing the support provided by the personal tutor system. A successful outcome, i.e. a competent student ‘fit for practice’, could be considered to rely partly on a clear and robust personal tutor system.

Conclusion

Checkland’s (1981) soft systems methodology was an appropriate systematic model for this service-focussed study. The methodology relies on a series of stages that elicit information from complex real world practice. It gives structure to deal with problematic situations where there is a large social and human activity component. SSM encourages commitment, openness and togetherness. These are its implicit and explicit values. It brings diverse interests together and opens up the organization culture. The knowledge about interaction and perception are helpful in understanding and improving these systems. With SSM, the process is as important as the outcome. The other advantage of this SSM methodology is that it forces the user to look for a solution that is more than technical. Although this service-focussed study involved a small scale empirical data collection, the triangulation of different information sources was not only pertinent to this School of Nursing and Midwifery but it also encouraged learning and problem-solving possibilities.

References