CORE COMPETENCES FOR ITEM

A Model

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1. INTRODUCTION

As part of the 2002 ITEM Conference, a Discussion Group was formed with the mandate to explore the core competences required for ITEM. It was recognised by the group that, whereas IT for Educational Management has existed in educational institutions for almost 20 years, the history of its introduction was characterised by a generally ad-hoc approach to implementation. In particular, it was perceived that attempts to introduce new technologies into educational institutions often lacked coherent and effective training programmes, to the extent that the literature reports unsatisfactory use of ICT in teaching, learning and administration (Lambert & Nolan 2002, Ofsted 2002, Newton 2002).

The discussion group sought to develop a model or framework, which would enable educational institutions to plan their ITEM training and achieve an ITEM-competent staff.

2. BACKGROUND

In discussing the issue of how to train school managers to use managerial school information systems Visscher and Branderhost (2001) point out that there is strong empirical evidence that user training strongly influences the

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degree of information system usage. Selwood (1995) highlighted the problems concerning the lack of differentiation of training for different levels of school personnel in the England and Wales – Headteachers, trained alongside school secretaries. More recently, Selwood and Drenoyianni (1997) discussed the problems of training senior managers in the use of their school's Management Information System (MIS) to support their decision-making. Donnelly (2000) claimed that there were three levels of training appropriate to both the leadership team and administrative staff – training in generic software, training in the use of school-specific MIS software, and training in the use of the Internet. Additionally he stressed the need for the leadership team to be trained in how to use data to improve educational standards. Visscher and Branderhost (2001) specified five skill areas that they felt were needed by school staff:

1. Recognition of the value of information systems, and development of a school policy;
2. Determination of the type of information they need for their work, or for a specific problem;
3. Discovering how they can get information from their school MIS;
4. Interpreting information from their school MIS;
5. Using information from their school MIS for decision-making and policy-evaluation.

In the USA the Collaborative for Technology Standards for School Administrators have produced a set of "Technology Standards for School Administrators" (TSSA Collaborative 2001). However, whilst these are comprehensive they cover all aspects of technology including its use to support teaching and learning. These standards are aimed at not only school based education managers, but also those at a district level. Thus, they need deconstructing in order to extract standards for ITEM.

In England and Wales, currently the government is in the process of promoting its Information Management Strategy (IMS 2000). As part of this, two documents concerned with competences have been produced: one is a self-evaluation form for Information Management and ICT Competences (DfES, 2002a); the other is aimed at identifying who does what in terms of administration activities (DfES 2002b).

The group felt that whilst many of the documents referred to above were useful, in highlighting the problems and some of the competences that were needed for the effective use of ITEM, none of them really described the core competences for ITEM. Furthermore, those that did detail competences tended to concentrate on operational competences at the expense of tactical and strategic competences.

3. THE MODEL

3.1 The X Axis: ITEM Dimensions

We believe that the best way to open the lid on the ITEM black-box is to deconstruct our basic terms. Thus, four core dimensions present themselves – Information, Technology, Education and Management. ITEM links these four dimensions inextricably. It is in the interactions of these four dimensions that ITEM has its uniqueness.

3.2 The Y Axis: Organisational Levels – Operational, Tactical, and Strategic

The management process is primarily concerned with decision-making. Drawn from the management literature decision making can occur at three different levels operational, tactical, and strategic. Whenever for example, headteachers and governing bodies in a school form a vision of where the school is going establish aims and objectives prioritise them and develop a plan for the accomplishment of these objectives, they are involved in strategic decision-making. Whenever they are making decisions concerned with the implementation of the school's development plan (e.g. appoint or dismiss teaching or other staff), their decisions may be considered as tactical. Finally, whenever they have to carry out clear and specific tasks (e.g. ordering supplies) they are making operational decisions. An alternative approach in considering these organisational levels is to do so in terms of the degree of structured thinking, whereby operational decisions are highly structured, tactical decisions are semi-structured, and strategic decisions tend to be highly unstructured.

3.3 The Z Axis – Stages of Growth

The members of the discussion group felt that it was important to reflect the degree of sophistication of the organisation's IT effort. To this end, the group looked to well-exercised 'stages of growth' theories, the most popular in this arena being Nolan (1979), Visscher (1991) and Galliers & Sutherland (1991).

Each of these theorists offered a model with certain relevance to the ITEM competence debate. Both the Nolan and Galliers & Sutherland models were perceived as too generic for the ITEM domain. At the same time, although the Visscher model was perceived as being the most relevant,

we wanted to modify the stage labels to more closely reflect stages of sophistication. After some debate, the stage labels chosen were therefore Initiation, Expansion, and Embedded.

Table 17-1. Stages of growth compared [Please provide a caption for this table]

Stage	Nolan	Visscher	Galliers & Sutherland
I	Initiation	Initiation	Ad Hocacy
II	Contagion		Starting the Foundations
III	Control	Expansion	Centralised Dictatorship
IV	Integration	Integration	Democratic Dialectic and Cooperation
V	Data Administration		Entrepreneurial Opportunity
VI	Maturity		The Age of Aquarius

Figure 17-1. The proposed three dimensional model of ITEM Competences

3.4 Advantages of the ITEM Competence Model

The proposed model offered certain advantages, as follows:

- It enables us to map existing policies and programmes, and to investigate goodness of fit of those policies and programmes;
- It enables us to map ITEM competences to existing job descriptions within educational institutions;
- It is platform-independent;
- It is descriptive;
- It is prescriptive;

- It helps us in the development of more appropriate policies and programmes for ITEM competences.
- It assists in the development of an appropriate post-graduate ITEM curriculum;
- It enables the certification of other courses against the criteria noted in these competences.

3.5 The Dimension Space

	Operational	Tactical	Strategic
Information	Data	Information	Knowledge
Technology	Transaction Processing	Management Information Systems	Knowledge Management / EIS / Expert Systems
Education	Routine	Projects	Visioning
Management	Individual	Team / Department	Whole-School

3.6 Operational Competences

	Initiation	Expansion	Embedded
Information	Recognise & edit data	Link & Interpret data	Leverage & Exploit data
Technology	Initiate & Manipulate transactions	Link & Interpret transactions	Leverage & Exploit transactions
Education	Routine Recording	Routine Reporting	Exception Reporting
Management	Organise my tasks	Prioritise my tasks	Control & Transform my tasks

3.7 Tactical Competences

	Initiation	Expansion	Embedded
Information	Recognise & edit information	Link & Interpret Information	Leverage & Exploit Information
Technology	Initiate & Manipulate MIS	Link & analyse MIS	Leverage & Exploit MIS
Education	Recognise projects	Link & interpret Projects	Leverage & Exploit projects
Management	Organise my team	Control & Prioritise my team	Leverage & Transform my team.

3.8 Strategic Competences

	Initiation	Expansion	Embedded
Information	Recognise & manipulate knowledge	Link & interpret knowledge	Leverage & exploit knowledge
Technology	Initiate & Manipulate EIS	Link & analyse EIS	Leverage & Exploit EIS
Education	Recognise Vision	Communicate Vision	Leverage & Exploit (share) Vision
Management	Organise my institution	Control & Prioritise my institution	Leverage & Transform my institution

4. CONCLUSIONS AND RECOMMENDATIONS

The Discussion Group had thus identified 36 core ITEM competences – four dimensions (Information, Technology, Education, Management) at three levels (Operational, Tactical, Strategic) for three degrees of sophistication (Initiation, Expansion, Embedded). It is apparent that as one gains competence at one level and moves to the next, the cognitive processes and decision-making involved move from Structured (Level 1) to Semi-structured (Level 2) to Unstructured (Level 3). As a corollary to this, it will be expected that Level 1 competence is a pre-requisite for transition to Level 2, and Level 2 competence is a pre-requisite for transition to Level 3.

The Group recommended that subsequent work should be devoted to two key activities:

- a) To populate each of the 36 core ITEM competences with practical, real-life examples; and
- b) To use this ITEM Competence Grid to benchmark existing ITEM curricula;

As time passes, the technology landscape will inevitably change, with different competences emerging. It will be important to review the framework after two years.

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