Rationale and basis for the design of a schools ITQ Award

Notes in bold italics give details of how the School ITQ Award provides compatibility with the National Curriculum Programmes of Study for England, Wales and Northern Ireland. Assessment criteria are linked to both the National Curriculum Statements of Attainment and the knowledge and performance criteria of the ITQ. We can therefore provide level equivalence between the National Currciulum for schools and the Qualifications Credit Framework which is itself mapped to the European Qualifications Framework.

The importance of information and communication technology

The increasing use of technology in all aspects of society makes confident, creative and productive use of ICT an essential skill for life. ICT capability encompasses not only the mastery of technical skills and techniques, but also the understanding to apply these skills purposefully, safely and responsibly in learning, everyday life and employment. ICT capability is fundamental to participation and engagement in modern society. ICT can be used to find, develop, analyse and present information, as well as to model situations and solve problems. ICT enables rapid access to ideas and experiences from a wide range of people, communities and cultures, and allows students to collaborate and exchange information on a wide scale. ICT acts as a powerful force for change in society and citizens should have an understanding of the social, ethical, legal and economic implications of its use, including how to use ICT safely and responsibly. Increased capability in the use of ICT supports initiative and independent learning, as learners are able to make informed judgements about when and where to use ICT to enhance their learning and the quality of their work. ***(In the field of technology aspects of education and training are interdependent rather than antipathetic. TLM's International Schools ITQ (TISI) is designed to fully meet the requirements of schools internationally, supporting learning about contemporary technological changes of global significance such as Open Source software and Open Systems, the shift to hand held and "cloud technologies" and preparation for community participation.)***

1. Key concepts

There are a number of key concepts that underpin the study of ICT. Students need to understand these concepts in order to deepen and broaden their knowledge, skills and understanding.

1.1 Capability

1. Using a range of ICT tools in a purposeful way to tackle questions, solve problems and create ideas and solutions of value. ***(TISI learners will use a range of tools , especially those related to accessing creating and processing information on the internet)***

2. Exploring and using new ICT tools as they become available. ***(Tisi's emphasis on open systems and open source encourages the use of freely available tools on the internet as they become available)***

3. Applying ICT learning in a range of contexts and in other areas of learning, work and life. ***(The Tisi Open Systems unit specifically requires this)***

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1.2 Communication and collaboration

1. Exploring the ways that ICT can be used to communicate, collaborate and share ideas on a global scale, allowing people to work together in new ways and changing the way in which knowledge is created. ***(This is fundamental to Open Source communities and inherent in the ITQ website software and using collaborative technologies units with TLM guidance)***

1.3 Exploring ideas and manipulating information

1. Solving problems creatively by using ICT to explore ideas and try alternatives. ***(Problem solving approaches to meeting the assessment criteria are actively encouraged in the Tisi approach)***

2. Using ICT to model different scenarios, allowing people to identify patterns and test hypotheses. ***(Programming aspects of Tisi Specialist Software unit, optional spreadsheets units)***

3. Manipulating information and processing large quantities of data efficiently. ***(Tisi Improving Productivity using ICT and optional Spreadsheet and Data Base units.)***

1.4 Impact of technology

1. Exploring how ICT changes the way we live our lives and has significant social, ethical and cultural implications. ***(All references to Open Systems throughout the handbook guidance are relevant)***

2. Recognising issues of risk, safety and responsibility surrounding the use of ICT. ***(Safe use is emphasised throughout with a specific units in Internet security and safety)***

1.5 Critical evaluation

1. Recognising that information must not be taken at face value, but must be analysed and evaluated to take account of its purpose, author, currency and context.
2. Reviewing and reflecting critically on what they and others produce using ICT. ***(ITQ IPU A3, aspects of internet safety and security in the ITS unit and aspects of UCT)***

2. Key processes

These are the essential skills and processes in ICT that students need to learn to make progress.

2.1 Finding information

Learners should be able to:

1. analyse systematically the information requirements to solve a range of problems. ***(Problem solving approaches to IPU. Planning, execution, evaluation)***

2. scope the information flow required to develop an ICT- based solution. ***(Plan presentation of information through web pages as an e-portfolio)***

3. select appropriate information from a wide range of sources, showing discrimination in their choices and judging the value, accuracy, plausibility and bias of information. ***(Research***

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methods in the IPU mandatory units)

4. explore, develop and interpret information to produce solutions that meet user needs. ***(Information searches, finding information about free tools and content)***

5. evaluate critically and justify information choices and act on feedback from others where appropriate. ***(ITQ IPU A3, evaluation of e-portfolio work, evaluation of software tools in WSS and UCT units)***

2.2 Developing ideas

Learners should be able to:

1. develop efficient and effective ICT-based solutions to a range of problems for themselves and others. ***(Problem solving approachs are encouraged throughout)***
2. select and use, with increasing integration and efficiency, the appropriate ICT tools for given problems. ***(Choice and justification of tools is encouraged eg Open Source, proprietary, advantages, disadvantages etc)***
3. independently explore, develop and interpret increasingly complex ICT-based information to solve problems. ***(Research in IPU and finding information for e-portfolio in the context of a range of subjects)***
4. use ICT safely and responsibly. ***(AUPs, resources to support e-safety etc from the INGOT community site, requirement for cooperative attitudes, ITS unit)***
5. critically evaluate and justify the choice of ICT tools and act on feedback from others where appropriate. ***(ITQ IPU A3, ITQ WS)***

2.3 Communicating information

Learners should be able to:

1. use a range of ICT tools and media to share, exchange and present information effectively in a variety of contexts. ***(e-portfolio, research aspects of IPU)***

2. create quality solutions that show they have considered how the information should be interpreted and presented in forms that suit audience, purpose and content.***(WSS and IPU units)***

3. communicate and exchange information (including digital communication) safely, responsibly and securely. ***(Working with others in the UCT)***

2.4 Evaluating

Learners should be able to:

1. review, modify and evaluate work as it progresses, reflecting critically and responding to user feedback. ***(ITQ IPU, WSS all require evaluation)***

2. evaluate the effectiveness of their own and others' ICT-based solutions, using the results to improve the quality of their work and to inform future work. ***(ITQ IPU, WS all require evaluation - emphasis on peer review and self-assessment)***

3. Range and content

This section outlines the breadth of the subject on which teachers should draw when teaching the key concepts and key processes.

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The study of ICT should include:

1. use of increasingly demanding problems and more complex information from a wide range of sources in a variety of contexts. ***(encouraged throughout, G&T learners can tackle Level 3 units in specific areas of interest)***

2. use of a range of ICT tools to meet the needs of the user and solve problems. ***(trying new tools and problem solving approaches are encouraged)***

3. developing an understanding of the need to:

- employ safe working practices in order to minimise physical stress. ***(IPU and ITS units but themed throughout)***

- keep information secure and minimise risks from computer viruses and other malicious practice. ***(Safety and security are in all units, with extensive support on the web site from free puzzles and games)***

- manage information, storage and access to secure content and enable efficient retrieval. ***(Specific parts of WSS unit)***

4. the impact of ICT on individuals, communities and society, considering the social, economic, legal and ethical implications of access to, and use of, ICT. ***(Extensive references in the guidance to including intellectual property, ethical use of dominant market position, equality of opportunity issues and inclusion)***

4. Curriculum opportunities

During the key stage students should be offered the following opportunities that are integral to their learning and enhance their engagement with the concepts, processes and content of the subject. ***(Encouraged throughout)***

The curriculum should provide opportunities for students to:

1. make choices about when and where it is appropriate to exploit technology to support them in other areas of learning and everyday life.

2. work creatively and collaboratively, taking different roles in teams.

3. be independent, discriminating and reflective when choosing when to use technology.

4. use ICT to manage themselves, their work and their learning.
5. apply ICT to real-world situations when solving problems and carrying out a range of tasks and enquiries.
6. use initiative to find out about and exploit the potential of more advanced or new ICT tools and information sources.
7. evaluate their experiences of using ICT, considering the range of its uses and its significance to individuals, communities and society.
8. use ICT in other subjects and areas of learning with contexts that are relevant and interesting to them.

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