

A code of practice for e-support in e-learning systems

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Committees responsible for this British Standard

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BTextact Technologies

City and Guilds

Edexcel Foundation

Education Online

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- Association for Learning Technology (ALT)

Chartered Institute of Personnel and Development (CIPD)

The Royal National Institute for the Blind (RNIB)

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RM

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Webarchitects

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Foreword

This British Standard code of practice has been prepared by Technical Committee IST/43, Information technology for learning, education and training, which comprises people with a wide experience of learning delivered using Information and Communications Technology (ICT), from a variety of different companies and organizations. BSI Committee IST/43, whose constitution is shown in this British Standard, takes collective responsibility for its preparation under the authority of the Standards Policy and Strategy Committee. The Committee wishes to acknowledge the personal contribution of Seb Schmoller and David Jennings.

Growth in the power and capabilities of ICT has led to the increasing use of e-learning systems to mediate the provision of learning in a wide range of educational and other contexts. Suitably used, e-learning systems can increase the flexibility of, and access to, learning and training courses. They can also enable effective, efficient and satisfying achievement of learning objectives. However, their increased use has raised issues about the quality and effectiveness of the e-support that learners receive as they undertake ICT-mediated learning.

The aims of this British Standard for e-support in e-learning systems are to provide a means for the provider, purchaser or commissioner of e-learning systems, materials and services among others, to:

- establish a consistent level of e-support to learners undertaking e-learning courses;
- assess the effectiveness of the e-support provided on a course;
- give an assurance of quality of e-support to users of “off-the-shelf” courses provided through e-learning systems, and to organizations providing, commissioning or purchasing e-learning systems, materials and services.

The achievement of these aims will have benefits for learners undertaking e-learning courses, which include:

- effective and efficient attainment of the courses’ learning objectives;
- high levels of satisfaction, confidence and motivation with the courses;
- positive attitudes to e-learning and motivation to do further learning;
- accessibility of e-support for learners with physical, sensory or cognitive impairments, environmental or language constraints;
- provision to learners, when appropriate, of communication tools to enable group-work, collaboration and dialogue.

The achievement of these aims will also have benefits for people directly involved in the delivery of e-learning, such as tutors, other support staff, and instructional designers, which include:

- reduced demand for e-support on tutors and other support staff, thereby increasing their effectiveness;
- clarity for instructional designers as to the e-support issues which learning materials and e-learning systems should address.

In turn, the recommendations in this standard have benefits for other stakeholders in e-learning, which include:

- higher retention, completion and attainment rates for courses;
- higher levels of participation and inclusion in e-learning courses;
- predictable and standardized requirements for learning materials, e-learning systems and e-support processes;
- improved matching of tutor- and other staff-training against the e-support requirements of e-learning provision;
- a large and open market for e-learning, by making it more cost-effective and of higher quality.

Users' attention is drawn to any existing legislation covering the subject matter of this British Standard. The following British Acts of Parliament and Regulations are relevant.

- The Disability Discrimination Act 1995 [1].
- Special Educational Needs and Disability Act 2001 [2].
- The Data Protection Act 1988 [3].
- The Welsh Language Act 1993 [4].
- The Health and Safety (Display Screen Equipment) Regulations 1992 [5].
- The Health and Safety at Work etc. Act 1974 [6].
- The Freedom of Information Act 2000 [7].

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification, and particular care should be taken to ensure that claims of compliance are not misleading.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 28, an inside back cover and a back cover.

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Introduction

This British Standard code of practice is intended for organizations involved in the use of e-learning systems to provide learning and training courses, including (but not limited to):

- a) colleges, learning centres, schools and universities that provide courses to their students using e-learning systems;
- b) training companies, charities, employers and government/military organizations providing courses using e-learning systems as part of vocational education and training;
- c) awarding bodies, professional bodies, industry organizations and others accrediting courses that are delivered wholly or partly using e-learning systems;
- d) funding, advisory, and regulatory bodies.

This British Standard is also relevant to organizations involved in developing or providing elements that contribute to e-support for courses delivered using e-learning systems, including (but not limited to):

- 1) developers of software for e-learning systems;
- 2) instructional designers, developers, publishers and distributors of learning materials for e-learning systems;
- 3) providers of e-support services, including freelance tutors of courses delivered using e-learning systems.

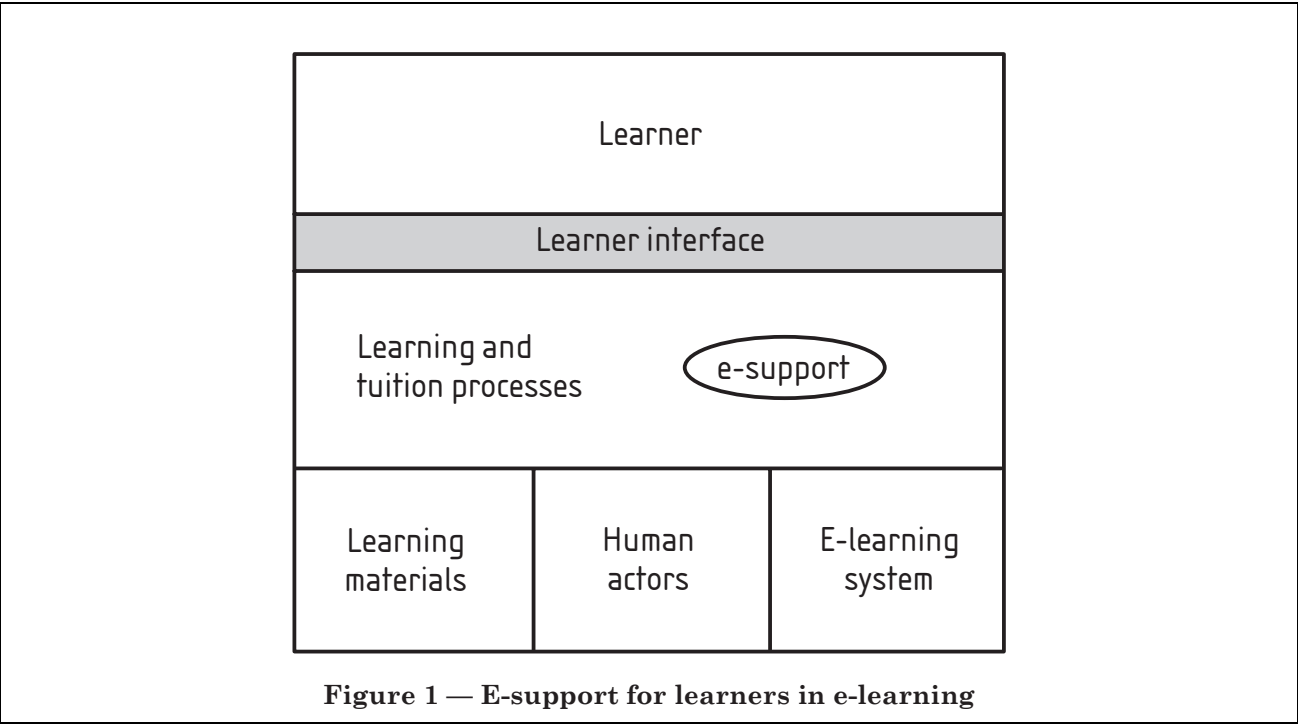
E-support as defined in this standard is a response, during e-learning, to a learner-, system- or tutor-interaction, the purpose of which is to facilitate effective, efficient and satisfying learning.

Design and delivery of e-support depends upon the learning context, the learners, the environment, and the available technology. E-support can be provided in a number of ways as part of e-learning, including:

- i) e-support provided by e-learning systems;
- ii) e-support integrated into learning materials;
- iii) e-support provided by human actors using computer-mediated communication;
- iv) e-support provided by some combination of the above.

The elements and processes that support learners doing e-learning courses are illustrated in Figure 1. Providers of courses are responsible for all aspects of the learners' experience, including e-support. These providers might in turn rely on their own suppliers, whom they charge with responsibility for specific elements that underpin e-support, as well as other parts of the learning and tuition processes.

This British Standard focuses on the interface between learners and the e-support available to them, which forms a supporting part of the broader learning and tuition processes.



NOTE The areas in Figure 1 do not denote relative importance of learning materials, human actors and e-learning systems in underpinning e-support. These elements can vary widely in scale and sophistication across different instances of e-learning, though all are usually present to some degree.

This British Standard exists alongside a number of relevant international and national frameworks and emerging standards, the scope of which includes the delivery of courses using e-learning systems. These include:

- industry standards and specifications such as those issued by the Institute of Electrical and Electronics Engineers (IEEE) [8] or the IMS Global Learning Consortium [9];
- *de facto* standards such as those issued by the World Wide Web Consortium’s Web Accessibility Initiative [10], or the Unicode Consortium (ISO 10646-1:2000);
- requirements stipulated by organizations which are responsible for quality-assurance within different parts of the UK public education system, such as the Office for Standards in Education (Ofsted) [11], or the Quality Assurance Agency for Higher Education (QAA) [12];
- standards and specifications embraced within the UK Government’s Interoperability Framework (e-GIF) [13].

While this British Standard focuses on the user interface between learners and the e-support available to them, the majority of industry and technical standards referred to focus on the technology interfaces that underpin e-support provision.

1 Scope

This British Standard gives recommendations for e-support in e-learning systems.

This standard is applicable to e-support across all types of e-learning. It is applicable independently of the pedagogical approach to e-learning (e.g. whether human tutors are involved in providing e-support or all e-support is automated, whether learners work individually or in groups, or whether the underlying pedagogy of a course involves learners in constructing their own understanding or in committing course content to memory).

Where learning programmes include a combination of e-learning and other delivery methods, this standard is applicable to the e-learning components.

NOTE 1 E-support forms part of learning and tuition processes (as shown in Figure 1), and the recommendations in this British Standard are designed to enable effective implementation of these processes. However, recommendations for tuition and pedagogical methodologies are not addressed in this British Standard.

This standard is applicable independent of the type of e-learning system deployed. It makes recommendations for the e-support that is provided to learners, but does not specify whether this e-support should be provided by the e-learning system, by the learning materials or by tutors or other human intervention.

NOTE 2 This British Standard includes examples referring to both automated and tutor-generated e-support, but these examples are only illustrative and should not be taken to imply that the approaches described are pedagogically preferable.

This British Standard makes recommendations that could be implemented through the adoption of a learning object model (an object-based approach to the management of learning materials). However, the recommendations do not depend on the implementation of such a model.

The recommendations in this British Standard can be used in the procurement, design, benchmarking, development, evaluation and communication of information about e-learning courses, learning materials, e-learning systems and e-support services.

NOTE 3 Recommendations concerning user guidance for users of any systems involving office work with visual display terminals are provided in BS EN ISO 9241-13:1999, which covers information additional to the regular user-computer-dialogue that is provided to the user on request or is automatically provided by the system.

NOTE 4 BS EN ISO 9241-13:1999 does not address on-line tutorials, on-line documentation, or intelligent system performance aids. These kinds of user support are covered in this standard.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies:

BS EN ISO 9241-11:1998, *Ergonomic requirements for office work with visual display terminals (VDTs) — Part 11: Guidance on usability*.

3 Terms and definitions

For the purposes of this British Standard, the terms and definitions in BS EN ISO 9241-11:1998 and the following apply.

3.1

assessment

test, examination or similar, the primary purpose of which is to assess a learner's knowledge, understanding or skills in a defined area

3.2

asynchronous communication

communication which takes place where the parties to the communication are not both active simultaneously

EXAMPLES E-mail, text-based conferencing, newsgroups, bulletin board systems, text messaging using Short Message Service

3.3

course

learning materials, learner tasks, and supplementary resources designed to provide learners with a means of attaining a specified range of learning outcomes, with support to learners provided by automated or human means, separately or in combination

3.4

dialogue-related e-support

support for learners and prospective learners that assists them to engage in dialogue with other learners or with a tutor, or to learn from previous dialogue involving other learners or tutors

3.5

e-learning

learning which takes place through exchange between a combination of resources, tasks, and support-systems (human or otherwise) where the exchange is mediated through information and communication technologies

3.6

e-learning system

information technology system used to enable the provision of learning materials and support processes to learners, to help learners, tutors and administrators track the learners' progress, and to facilitate the convenient updating of learning materials

NOTE This definition includes IT products known as Learning Management Systems or Virtual Learning Environments but is not necessarily coterminous with them.

3.7

e-support

response, during e-learning, to a learner-, system- or tutor-interaction, the purpose of which is to facilitate effective, efficient and satisfying learning

NOTE 1 The exact situation and place of learning is immaterial.

NOTE 2 The response may be initiated by the e-learning system, or by a human participant in e-learning.

3.8

formative feedback

response to a learner that guides them to improve their performance on a task

3.9

high concurrency course

course that is undertaken by many learners at any one time, or by groups of learners with synchronized start and completion dates

3.10

learning materials

resources that can be used by a learner as part of course

NOTE Learning materials may include material for viewing or reading, task instructions, simulations or assessments. Learning materials may or may not comprise discrete learning objects. They may or may not be digital.

3.11

learning object

discrete digital resource that can be reused to facilitate learning and is capable of being used to achieve a specified learning objective

3.12

low concurrency course

course where learners work independently of each other, or where the number of learners is low or unpredictable

3.13**metadata**

set of words, phrases or sentences that summarizes and describes a learning object or other unit of digital content and is used to classify content so as to enable efficient searching

NOTE Metadata is not necessarily visible to the learner or end user.

3.14**performance-related e-support**

support information and help for learners and prospective learners that helps them assess and, if required, improve their performance in relation to the learning objectives of a course, and the activities within it

3.15**process-related e-support**

support information and assistance for learners following the learning processes that enables them to complete their course successfully

3.16**provider**

agency that provides e-learning courses to learners and normally having a set of responsibilities in relation to the learners enrolled on its courses

3.17**simulation**

model of a process or system with which learners can interact as a means of learning about the process or system

3.18**synchronous communication**

communication between simultaneously active parties

EXAMPLES Telephone or video conferencing, Internet Relay Chat (IRC), webcasting, application sharing.

3.19**tutor**

someone who guides, helps or leads learners through a course

NOTE 1 A tutor can but need not be a subject expert. The term tutor includes, for the purposes of this standard, a range of job titles, including but not limited to lecturer, mentor, trainer and teacher.

NOTE 2 In the case of e-support, tutors communicate with learners through the e-learning system or other computer-mediated communication.

4 Recommendations for e-support**4.1 General principles**

The guiding principles that underpin this British Standard and are relevant to all organizations concerned are as follows.

- a) E-learning systems, learning materials and learning processes should be designed so as to minimize the need for remedial e-support resulting from learners' difficulties with following the intended learning processes.
- b) E-support should be presented to learners in such a way as to be clear, personally relevant, and motivationally effective.
- c) E-support provision should be accessible to learners in all intended contexts of use, allowing for the access devices and physical environments they might use, and for any physical, sensory or cognitive impairments, or language constraints they might have.

NOTE 1 Attention is drawn to The Disability Discrimination Act 1995 [1] and Special Educational Needs and Disability Act 2001 [2]. These can have implications for the user interface of the e-support, including use of alternative user interfaces by those whose impairments make it difficult or impossible for them to use the default user interface.

NOTE 2 Attention is drawn to the World Wide Web Consortium's Web Accessibility Initiative.