

e-Textbook Writing Guidelines for Information and Communication Technology (Secondary 4 – 6)

1. Introduction

- 1.1 The purpose of this set of guidelines is to familiarise interested e-textbook publishers with the curriculum aims and objectives and related principles for writing e-textbooks of the Senior Secondary (SS) Information and Communication Technology (ICT), etc. in a bid to ensure that the e-textbooks are written in accordance with the specific requirements of the curriculum and the updated “Seven Learning Goals of Secondary Education” (www.edb.gov.hk/en/curriculum-development/7-learning-goals/secondary/index.html). For details, please refer to the *Secondary Education Curriculum Guide* (2017) and its Supplementary Notes (2021) (www.edb.gov.hk/en/curriculum-development/major-level-of-edu/secondary/CG_documents.html).
- 1.2 The *Values Education Curriculum Framework (Pilot Version)* was released in 2021 and ten priority values and attitudes (PVA) were introduced. The PVA have been optimised since 2023 with the PVA “Care for Others” extended to “benevolence” and two PVA (i.e. “Filial Piety” and “Unity”) added. Publishers should incorporate the learning elements of values education in the e-textbooks where appropriate. For details, please refer to the *Values Education Curriculum Framework (Pilot Version)* (2021) (Chinese version only) (www.edb.gov.hk/en/curriculum-development/4-key-tasks/moral-civic/ve_curriculum_framework2021.html) and the EDBCM No.183/2023 on *Enriching the Values Education Curriculum Framework (Pilot Version) – Optimisation of “Priority Values and Attitudes”* (applications.edb.gov.hk/circular/upload/EDBCM/EDBCM23183E.pdf).
- 1.3 The *Curriculum Framework of National Security Education in Hong Kong* was released in 2021. Publishers should incorporate the learning elements of national security education in the e-textbooks where appropriate. They may also refer to the government website “National Security Education Day” for information such as major fields of national security. For details, please refer to the *Curriculum Framework of National Security Education in Hong Kong* (www.edb.gov.hk/en/curriculum-development/kla/pshe/national-security-education/index.html) and the government website “National Security Education Day” (www.nsed.gov.hk/index.php?l=en).
- 1.4 For the general principles and requirements for writing e-textbooks and the requirements for submission of e-textbooks for review, publishers should refer to the latest edition of the *Guiding Principles for Quality Textbooks* and *Guidelines on Submission of e-Textbooks for Review* available on the EDB’s Textbook Information website (www.edb.gov.hk/textbook).
- 1.5 The e-textbooks should be written in line with the following CDC curriculum documents:

- Technology Education Key Learning Area Curriculum Guide (Primary 1 - Secondary 6) (2017)
- Information and Communication Technology (S4-6) 2021

2. Curriculum Aims and Objectives

2.1 Curriculum aims

The ICT Elective curriculum aims to:

- provide students with a body of essential knowledge, concepts and applications of information, communication and computer systems;
- equip students with problem-solving and communication skills, and encourage them to think critically and creatively;
- develop students into competent, effective, discriminating, ethical and confident users of ICT, so as to support their lifelong learning; and
- provide students with opportunities to appreciate the impact of ICT on our knowledge-based society, so as to foster in them proper values and attitudes towards this area.

2.2 Learning Targets

Students work towards the following learning targets:

(a) Knowledge and Understanding

- develop knowledge and understanding of the range and organisation of computer systems, and the interrelationships between hardware, software and data; and
- realise the social, ethical and legal issues pertaining to the use of ICT.

(b) Skills

- use a range of applications software effectively, ethically and with discrimination to support information processing and problem-solving; and
- demonstrate an understanding of methods for analysing problems, and planning and implementing solutions through writing computer programs and using ICT.

(c) Values and Attitudes

- appreciate how information literacy and the sharing of knowledge using ICT influence decision-making and shape our society; and

- develop responsible and positive attitudes towards the use of ICT.

3. Guiding Principles

3.1 Content

- Reference should be made to the following curriculum documents: [Technology Education Key Learning Area – Information and Communication Technology Curriculum and Assessment Guide \(Secondary 4 – 6\) 2021.](#) The updated curriculum focuses on strengthening students' computational thinking and programming skills. Students are required to write computer programs with programming language such as Python, C++ etc., instead of describing the algorithms to solve problems only.
- The curriculum is organised into a Compulsory Part and an Elective Part. The Compulsory Part consists of five modules, namely *Information Processing*, *Computer System Fundamentals*, *Internet and Its Applications*, *Computational Thinking and Programming* and *Social Implications*. The Elective Part has three options: *Databases*, *Web Application Development* and *Algorithm and Programming*. Based on their abilities, interests and needs, students are required to choose two specialised areas for in-depth study.

3.2 Learning and Teaching

The following section outlines the rationale and guiding principles for effective learning and teaching in ICT.

- Knowledge
Knowledge exists in different forms and contexts. Some knowledge is established while some is dynamically changing and contextualised. In order to be useful, all knowledge has to be constructed by the learners;
- Learning
Learning takes place in different ways. Knowledge can be acquired from instruction and reading the literature. Knowledge can also be learnt through experience followed by reflection. Finally, it can be learnt through collaborative interaction with others;
- Setting clear learning targets
Each learning activity should be designed with learning targets which are clear to both teachers and students;
- Teaching for understanding
The pedagogies chosen should aim at enabling students to understand what they are learning rather than just to memorise it;
- Building on prior knowledge and experience

The learning activities should be planned with the prior knowledge and experience of students in mind;

- Using a wide range of pedagogies

A range of learning and teaching approaches and activities should be designed to suit different purposes and students' various learning styles, so that effective learning can be achieved by all;

- Promoting interaction

Teachers need to bring about interaction in which students can explore what they know and don't know, and try out ideas. Teachers should use open-ended questions that get students thinking and offering views, so that students can learn from each other;

- Promoting self-learning

Generic skills and reflection can be nurtured through learning activities in appropriate contexts of the curriculum. Students should be encouraged to take responsibility for their own learning;

- Making good use of formative assessment

Assessment activities should be designed to collect and provide information to improve learning and teaching;

- Effective use of resources

Various types of teaching resources should be employed as tools for learning;

- Enhancing motivation

Learning takes place best when students are motivated to learn. Appropriate motivation strategies should be used to arouse the interest of students;

- Maximising engagement

In conducting learning activities, it is important for all students to be actively engaged in each activity; and

- Catering for learner diversity

Learners have different characteristics and strengths. Teachers should employ various strategies to cater for such learner diversity, for example by establishing a learning community in which learners of varied ability support each other's learning.

3.3 Structure and Organisation

- The organisation of curriculum should facilitate teachers to have a better grasp on the coverage of learning elements in order to provide a broad and balanced TE curriculum for students.

- The learning and teaching materials should be arranged in an appropriate sequence, e.g. from easy to difficult, from concrete to abstract. It must also be emphasised that the sequencing of topics in the curriculum is for reference only and should not be taken as the only way in organising the topics.
- Concept clarity is an important aspect affecting students' learning. New concepts should be introduced at an appropriate pace and when needed during the development of the text. Efforts should be made to help students connect new concepts with concepts already learned.
- Structure of text should be readily apparent to students as evidenced by chapter titles, headings, outlines, introductions and conclusions.
- The text should be coherent at a local level. Pronouns should have a clear referent and the relationship between ideas should be explicit and obvious.

3.4 Language

- Publishers should refer to the Computer Education Glossary available from the Education Bureau website (https://www.edb.gov.hk/attachment/tc/curriculum-development/kla/technology-edu/resources/computer-edu/ICT_glossary.pdf).
- The language used should be clear, fluent, accurate and easy to understand.
- Pinyin should be adopted for Chinese names and places.
- The interspersing of languages (e.g. English followed by its Chinese translation or vice versa) in the text is undesirable.

3.5 Pedagogical Use of e-Features

- The e-textbooks should meet the technical and functional requirements with appropriate pedagogical use of e-features for learning and teaching activities and assessments.
- Appropriate multimedia - video, audio and/or animation, should be included in layout according to the aforesaid requirements, and with captions / labels / synopsis where available.
- For the general principles and requirement for writing e-textbooks, publishers should refer to the latest edition of the *Guiding Principles for Quality Textbooks* for the relevant requirements.
- Multimedia, such as photographs, illustrations, pictures, graphs, videos and simulations should be relevant to the e-textbook content and be accurate with appropriate descriptions to stimulate and facilitate learning.

They should serve to direct students to the instructional focus rather than to distract them from them.

- Interactive assessment tasks should be included in the e-textbook to facilitate assessment for learning.

3.6 Technical and Functional Requirements

- Refer to the latest edition of the *Guiding Principles for Quality Textbooks* for the relevant requirements.

4. Others

- 4.1 When writing e-textbooks, publishers have to ensure that the content and information provided in the materials should be correct, complete, up-to-date, objective and impartial. The source and the date of the information should be provided as appropriate. The information in the illustrations and images should avoid showing the brand names of commercial items unless they are necessary.
- 4.2 All URLs and hyperlinks (including the publisher's self-developed learning materials and the learning and teaching resources developed by the third party) in the e-textbooks should be linked to the publisher's website for the publisher's easy management. For the third party resources, the URLs or hyperlinks should be linked to the websites with high credibility, such as the official websites and the websites of academic institutions, and avoid linking to commercial or social media platforms. In case problems arise from the hyperlinked content (including the third party resources), the publisher should take immediate follow-up actions and bear the relevant liability.
- 4.3 Publishers should avoid putting excessive hyperlinks that provide additional references in the e-textbooks so as not to violate the self-containment principles. Publishers may place the hyperlinks of their self-developed supplementary learning materials or the learning and teaching resources developed by the third party on their website. Publishers may also provide their website's URL in the Teacher's Book for teachers' reference to facilitate lesson preparation or design of learning and teaching activities. Publishers should be accountable for the learning and teaching resources they provide.
- 4.4 The maps included in the e-textbooks should be accurate and only contain essential information suitable for student learning. Reference should be made to the requirements and standard maps of the Ministry of Natural Resources of the People's Republic of China for all maps of China included in the e-textbooks, and wherever appropriate, the respective map review numbers and dates of reference should be quoted. Textbook publishers should also follow strictly the instructions in “公開地圖內容表示規範”

issued by the Ministry of Natural Resources (https://www.gov.cn/zhengce/zhengceku/2023-02/17/content_5741977.htm).

- 4.5 When using images of the national flag, national emblem, regional flag and regional emblem, the following points should be noted:
- **avoid drawing** the national flag, national emblem, regional flag and regional emblem on your own;
 - use real photos to show the national flag, national emblem, regional flag, regional emblem, etc.;
 - use the files of the national flag, national emblem, regional flag and regional emblem downloaded from the Protocol Division Government Secretariat and follow the relevant requirements stipulated by the Protocol Division Government Secretariat on the use of these images.
- 4.6 It is mandatory for the publishers to ensure that all proof-reading work, including that for e-features, language, punctuation, information, illustration, pagination, etc., is completed and the e-textbooks are error-free before submitting them for review.
- 4.7 Publishers should review the e-textbook content from time to time. When necessary, publishers can make amendments to the e-textbook content with the EDB's consent. The EDB may also require publishers to make amendments when needs arise.
- 4.8 Publishers should clear all copyright issues of the e-textbooks as appropriate.
- 4.9 The suggested time allocation set out in the curriculum documents should be taken into consideration to ensure that the learning content is designed with an appropriate quantity and level.
- 4.10 If publishers submit other versions (such as Chinese version or printed version) of the same textbook title for review at the same time, they should duly check the consistency of the content among all the versions. If another version is to be submitted at a later stage, the suggestions in the e-Textbook Review Report for the previously submitted version should be duly followed before submission.

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