National Certificate of Educational Achievement

2013 Assessment Report

Technology Level 2

91358 Demonstrate understanding of how technological modelling supports risk management

91359 Demonstrate understanding of the role of material evaluation in product development

91360 Demonstrate understanding of redundancy and reliability in technological systems

91363 Demonstrate understanding of sustainability in design

91367 Demonstrate understanding of advanced concepts relating to managing shared information within information systems

91371 Demonstrate understanding of advanced concepts from computer science

STANDARD REPORTS

91358 Demonstrate understanding of how technological modelling supports risk management

COMMENTARY

Generally, candidates presented their work in a suitable manner. Most candidates provided submissions on A4 pages within the 14-page limit. Some schools still used A3 paper – it should be noted that A3 paper should still be within the 14 × A4 paper limitations. Only the first 14 pages of evidence of a large submission can be marked. A3 provides no advantages to candidates.

Candidates who submitted less than 14 pages were not disadvantaged. Reports on grade boundaries were often not improved by using 14 pages. Generally, the reverse was true with candidates presenting material they did not understand in an attempt to fill up the report. This frequently worked against the candidate.

Candidates should restrict their report to what they actually understand.

Most submissions were word-processed. The few handwritten submissions were very difficult to read.

Where candidates wrote within a formatted answer sheet, the sheet often limited the degree of detail that the candidates could provide. In some reports the questions or headings in the answer sheet restricted the candidate's response. Some templates prevented candidates from meeting the requirements of the standard.

While most reports showed some understanding of technological modelling, some candidates did not demonstrate understanding of how technological modelling supports risk management.

When candidates use case studies or generic provided information, it is important that they provide evidence that they have generated by themselves. Some candidates were able to do this well with supportive literacy prompts such as "What happened", "My opinion" or "What I think". This provided candidate submissions with their own individual "candidate voice" that showed they were able to process information to demonstrate understanding required for this standard.

Some candidates tried to demonstrate understanding from case study context by surmising what would be the best course of action required rather than commenting on what was happening in the context. This type of approach is more assumption or 'guess-ti-mation'. Candidates would do better to comment on what technological modelling did happen and what that meant in relation to the requirements of the standard, rather than suggesting other technological modelling that the candidate considers would have been more appropriate.

Many submissions used a general approach to define what is technological modelling and its role in supporting risk management. While this information is useful, subsequent evidence must be presented within a specific context. Appropriate context include the candidate's own technological practice or references to a specific case studies that focus on technological modelling and how it is used to support risk management.

Some candidates referred to case studies and related this to their own practice to demonstrate their understanding. In many submissions, it was the evidence presented in the candidate's own practice that met the requirements of the standard rather than the evidence presented from a case study of a technologist's practice. Some submissions were comparing and contrasting their own practice with technologist's case studies. This

did not help candidates demonstrate understanding relevant to requirements of the standard.

Candidates were disadvantaged if a case study or their own technological practice did not mention the input and impact of stakeholder's feedback. Candidates were also disadvantaged if this feedback was not related to technological modelling to support risk management.

Some submissions identified facets of technological practice as technological modelling. These included planning; brief development, and specification; stakeholders; materials, fashion era or food ingredient research; equipment selection; safety codes, food and nutrition guidelines, workshop safety, risk registers, HACCP and other risk management charts. These facets of technological practice do have associated forms of technological modelling, but they are not the modelling itself. These facets of practice cannot be identified as forms of technological modelling.

There were some submissions that identified risks within technological practice but did provide any link to the technological modelling carried out to manage these risks. These identified risks tended to be physical risks such as safety in the workshop, food hygiene and cross contamination or environmental risks such as the sustainability of materials used in practice. While these risks may need to be considered, it is important for candidates to show their understanding of how different forms of technological modelling to different stakeholder groups will help to manage these and other risks to decide what 'should' and 'could' be done at each stage of technological practice in the development of an outcome. This is what the standard requires.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- described different types of technological modelling (sketches, current market product research, concept drawings, working drawings, test pieces, mock-ups, toiles, prototypes) and how these were used to support risk management
- identified types of risks (for example, resources such as expertise, time, money, correct equipment; safety concerns; design concerns; environmental concerns, stakeholder needs; material suitability; and ensuring fitness for purpose) within identified forms technological modelling
- identified at least one stakeholder other than the technologist (for example, parents, friends, classmates, teachers, experts, focus groups) involved with their or other's practice, their requirements and the impact of their feedback on the proposed outcome
- showed an understanding of the need to model the proposed outcome at different stages of technological practice with stakeholders for a successful outcome
- explained the use of technological modelling in the management of risks
- described stakeholder consultation and feedback linked to different forms of modelling which was used to identify and minimise risks in the development of a potential technological outcome
- described subsequent design changes that had to be made to ensure that identified risks are managed in the development of a fit for purpose outcome
- described forms of technological modelling in relation to what 'should' and 'could' be done to ensure the proposed outcome is fit for purpose.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- described technological modelling without identifying risks or how this modelling would support risk management
- described technological modelling from technological practice without any mention of stakeholders other than the themselves
- identified risks within the classroom situation (for example, workshop safety, cross contamination, risk management/assessment charts, lack of money, limited time, budget skills and materials or materials e.g. wood, food, ink, paper running out) but with no link to technological modelling
- described technological modelling and how it supports risk management within a generalised manner (for example, generic technological definitions) rather than within a specific context e.g. their own practice
- reproduced material such as case studies and generic definitions that did not convey "individual candidate voice" to demonstrate understanding
- identified planning and planning tools, brief development and specifications, stakeholders and their feedback, risk management charts, equipment selection as forms of technological modelling
- telling "their story of technological modelling" of what they did in their own practice with no explanation of why in relation to supporting risk management
- identified risks that are not relevant such as bad drawing for sketches, not enough research, or getting side-tracked from research on internet.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- explained different forms of modelling, the stages where these were applied and why, as well as explaining the type, severity and probability of risk that is supported by each type of modelling
- demonstrated understanding of why different forms of modelling at the different stages required reflection on what "should" or "could" be done to ensure fitness for purpose for the success of the outcome
- explained how evidence provided by different types of modelling with consultation and feedback from stakeholders other than the technologist (or themselves) supported risk management.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- provided an in-depth discussion of how different forms of modelling are used to provide a two-way communication between technologist and a range of stakeholders at different stages of technological practice to provide valid and reliable evidence to support risk management
- provided context specific examples throughout their report at various stages of modelling that analysed the differences in modelling used and why it was used with different stakeholders

- discussed design changes made following consultation and subsequent feedback from a range of stakeholders (key and wider stakeholders) to support risk management
- demonstrated a reflective approach to their risk management by discussing the interaction between stakeholders and technological modelling with practice to provide an effective outcome
- demonstrated evidence of risk management in a wider context of economic, social and political and environmental factors.

91359 Demonstrate understanding of the role of material evaluation in product development

COMMENTARY

Generally, candidates presented their work in a suitable manner. Most candidates provided submissions on A4 pages within the 14-page limit. Some schools still used A3 paper – it should be noted that A3 paper should still be within the 14 × A4 paper limitations. Only the first 14 pages of evidence of a large submission can be marked. A3 provides no advantages to candidates.

Candidates who submitted less than 14 pages were not disadvantaged. Reports on grade boundaries were often not improved by using 14 pages. Generally, the reverse was true with candidates presenting material they did not understand in an attempt to fill up the report. This frequently worked against the candidate.

Candidates should restrict their report to what they actually understand.

Of concern were the many submissions where candidate voice was not obvious and references for copied material were not included at the point of reproduction in the report.

Candidates who wrote their report in relation to their practice more easily accessed grades higher than Achieved.

Candidates who included work from their own practice and a case study to develop a discussion sometimes failed to link the two. This often meant that discussions did not develop adequately.

Many candidates struggled to describe the knowledge and techniques underpinning the material evaluation procedures used to support material selection decisions in developing a product. Many reports relied upon markers making inferences from the report as a whole. For some candidates this was a risky strategy.

Successful candidates often produced reports with clearly headed sections, e.g.:

Relationship Between Performance Properties and Performance Specifications

Material Evaluation Procedures Undertaken

Knowledge/Techniques Underpinning a Procedure.

Candidates who used these types of headings and then directly and accurately reported to the requirements of the standard succeeded at all levels of the standard.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- described in their own words evaluation procedures, and the information to be gained
- described in their own words how the information gained (from testing and research), allowed them to determine the suitability of the material for a final outcome
- described the knowledge and techniques underpinning the material evaluation procedures that were used to support the material selection decisions in the development of a product
- researched materials and explained the performance properties and related them to the specifications required for a product
- related the information in their report to their own Technological experiences.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- included a summary of the year's work with no evidence of material evaluation or performance properties research
- recounted, or described or even analysed case studies that had no material evaluation procedures
- downloaded information from the internet not related to the standard
- downloaded information that was related to the standard and presented it as if it was their own
- downloaded information that was related to the standard acknowledged in some manner that it was not their own work but did not use the information as specified. That is, they did not paraphrase, synthesise, or use, etc., the information to show their individual understanding
- explained the performance properties of the materials, however did not show any evidence of applying or understanding material evaluation or performance specifications
- did not describe an evaluation procedure
- did not show any understanding of the knowledge that supports evaluation procedures

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- explaining why different material evaluation procedures were undertaken to determine the suitability of materials for use in the development of a product
- explaining how knowledge and techniques underpinning material evaluation procedures were used to support the material selection decisions in the development of a product
- in their own words, explained how the performance properties of the materials to be used were determined
- explained how materials were evaluated in relation to the specifications for an outcome
- in their own words, explained their understanding of an evaluation procedure used to select materials

- in their own words, explained why the evaluations procedures performed on a material were relevant to the specifications
- in their own words, explained how evaluation informed final material selection.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- moved their explanation to discussions by relating their findings to other possible outcomes
- discussed the maintenance and disposal of their outcome as well as the other criteria
- demonstrated a full understanding of what they have discovered about the material and why they chose to use what they did and how this could be used for future projects
- created a report that discussed their experiences from their practical work and not from a case study.

91360 Demonstrate understanding of redundancy and reliability in technological systems

COMMENTARY

Generally, candidates presented their work in a suitable manner. Most candidates provided submissions on A4 pages within the 14-page limit. Some schools still used A3 paper – it should be noted that A3 paper should still be within the 14 × A4 paper limitations. Only the first 14 pages of evidence of a large submission can be marked. A3 provides no advantages to candidates.

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Candidates should restrict their report to what they actually understand.

Candidates were required to demonstrate their understandings of redundancy and reliability in technological systems. Candidates chose from a wide range of appropriate systems. Those that included diagrams or images used them to support their own explanations and discussions.

Candidates who based their reports upon existing, rather than their own, electronic systems generally did better because the candidate's own practice seldom included the redundancy aspects of systems required to meet the standard.

Candidates who purposefully chose systems where there was sufficient information on the design and maintenance aspects of technological systems did well. When choosing systems to write about in the report candidates need to make sure that they have access to all the information they need. Many candidates did not satisfactorily cover the design and maintenance aspects; those who did presented information on aspects such as automatic detection and indication of errors, systems that can automatically correct errors, extra reliability or redundancy to avoid human input and features of the systems that assisted maintenance personnel.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- selecting an appropriate technological system or systems to report on
- described the application of redundancy to a specific technological system
- described the application of reliability to a specific technological system
- had a clear understanding of redundancy as duplication of function
- had a clear understanding of reliability as consistency of function
- provided clear evidence using technical details
- described the social, cultural and or environmental importance of reliability and redundancy
- provided references for their work.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- had a limited understanding of what a system is
- misunderstood the meaning of redundancy
- wrote in general terms about redundancy and/or reliability without linking it to a specific technological system.
- had an imprecise understanding of a technological system; sometimes candidates reported on organisational systems such as people making backup copies of data
- reproduced technical detail without linking it to redundancy or reliability.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- explained why decisions regarding redundancy were made in the development of a specific technological system
- explained why decisions regarding reliability were made in the development of a specific technological system
- candidates made the links explicit in the development stages of a specific technological system to redundancy and reliability.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- explained why decisions regarding reliability were made in the development of a specific technological system
- explained why decisions regarding redundancy were made in the development of a specific technological system
- made explicit links in the development stages of a specific technological system to aspects of redundancy and reliability.

91363 Demonstrate understanding of sustainability in design

COMMENTARY

Candidates who submitted less than 14 pages were not disadvantaged. Reports on grade boundaries were often not improved by using 14 pages. Generally, the reverse was true with candidates presenting material they did not understand in an attempt to fill up the report. This frequently worked against the candidate.

Candidates should restrict their report to what they actually understand.

Improvements were most evident at the Merit and Excellence grade levels. At the not achieved grade, a large number of candidates submitted evidence that did not adequately align with the requirements of the standard. Often ‘sustainability in design’ was wrongly interpreted as being limited to either ‘recycling’ or ‘how raw materials are made’, refined and/or produced, rather than exploring how innovative design decisions can impact on, and enhance the sustainability of a product. Candidates who misinterpreted the standard in this way received a Not Achieved grade.

Many successful candidates explored the lifecycle of a product and then superimposed the ‘Sustainability Venn Diagram’ over this to identify the economic, environment and societal factors that affected the sustainability of the product. Often candidates identified alternative design decisions that increased the sustainability of a product within the practice of others and their own technological practice.

Candidates who concentrated on particular aspects of the Lifecycle that they could influence through their design choices and decisions were more likely to gain higher grades. These candidates often explored the prioritization and interaction of societal, economic and environmental based attributes within a product. Findings from this exploration were then applied in a manner that enabled candidates to ‘blend’ and ‘manage’ the ‘best sustainable fit’ within their outcomes. This allowed candidates to report upon authentic design decisions and how the design decisions impacted upon the sustainability of a product.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- explained or demonstrated their understanding that ‘sustainability in design’ that related to social, economic or environmental concerns within a product or outcome. This often included reference to a Venn diagram to show the interrelationship of these factors
- explained the general nature of social, economic and environmental aspects that related to the sustainability of technological outcomes
- demonstrated understanding of the complete life cycle of a technological outcome
- understood that Life Cycle Analysis (LCA) included every stage of a technological outcome’s life
- explained how design decisions or interventions occurred as a result of life cycle analysis
- explained how life cycle analysis of a technological outcome conducted by technologists and/or themselves identified innovative practice that contributed to social, economic or environmental sustainability

- sometimes explained how innovative practice at different points within a products life cycle may lead to environmental, economic or societal 'gains' which can increase the sustainability of an outcome.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- omitted components of a lifecycle analysis
- focused heavily on the reuse and recycling elements – lifecycle analysis should also include use, economic, and social components
- misinterpreted the meaning of 'sustainability' and 'innovation'
- focused on the 'processing' of materials
- limited their report to descriptions of 'how' materials may be recycled or reused
- limited their report to general descriptions of environmental aspects related to sustainability, e.g. the nature of a sustainable house
- were unable to explain how innovative practice through the application of economic, societal and environment aspects could lead to varying degrees of sustainability
- did not report on design decisions that impacted upon technological outcome's life cycle
- selected a product that restricted their ability to achieve.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- submitted evidence derived from their own Technological Practice
- conducted an LCA of an existing product and applied the 'lessons learnt' to their own context
- explained how the competing priorities and compromises were managed within the development and lifecycle of a sustainable technological outcome
- showed an in depth understanding of sustainability in design. In particular, design decisions that impacted on the sustainability of the outcome.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- demonstrated an independent voice
- showed accurate and comprehensive understanding of sustainability in design
- discussed how life cycle analysis can influence a technologist's design decisions to improve the social, economic or environmental sustainability of a technological outcome
- often discussed their own technological practice, and that of other technologists, in relation to sustainability in design.

91367 Demonstrate understanding of advanced concepts relating to managing shared information within information systems

COMMENTARY

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Successful candidates either wrote in their own words, or, clearly referenced at the point of use throughout their report.

Reports generated from prescriptive templates or closed questions made it difficult for markers to identify where the candidate demonstrated their own understanding. Similarly, reports generated from supplied information, often limited candidates to the Achieved grade.

When writing about attribution and Creative Commons many candidates wrote what these were rather than linking these to an information system. Many candidates made the same error when reporting on the different methods for backup etc. Candidates were more successful when they discussed the current method used for backup etc. in an actual organisation system. Reports that did not relate to a specific organisation were often too generic to demonstrate that the candidate had actually processed and understood the information they were presenting.

Candidates who were successful at Excellence often discussed whether alternatives, e.g. back-up processes, were suitable and if so why. Less successful candidates often only reported definitions.

Candidates whose reports were developed within the context a social media organisation that the candidate had used as a consumer often did so from the basis of their own personal experience of this organisation. This often led to shallow reports that did not and could not address the requirements of the standard (file Management, Ethical and Legal Issues, the role of a shared information system and the backup procedures).

Some candidates chose to write about two organisations. This often led to a confused report that did not cover the requirements of the standard with reference to either organisation.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- used their own words to cover all five areas of the standard
- were familiar with an information management system within an organisation
- referenced their own school's acceptable use policy
- referenced the Privacy Act and some or all of the Privacy Principles linking these to how they work within their organisation

- explained collaboration on shared files giving examples by making good use of annotated screen dumps
- explained the role of a shared information system by describing how the five components (hardware, software, data, procedures, and people) interact
- included annotated diagrams to describe the criteria e.g. backup system, file management system.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- did not state the role of an information system
- did not relate the information system to a specific organisation resulting in a generic report
- provided little or no evidence of their own understanding
- copied material from source without using the information as specified
- used provided evidence without using the evidence to demonstrate understanding
- used bulleted lists without further expansion
- did not cover all five criteria
- described how to interface with a social media provider rather than describing and explaining the information management system within the social media provider
- were confused about issues associated with legal, ethical, copyright and or licensing, for, example how to attribute authorship.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- used their own words to provide clear and detailed explanations
- referenced at the point of use and supplied a bibliography
- explained the implications of operation of one part of the system e.g., back up, on other parts of the system

  discussed the advantages and disadvantages advantages and disadvantages of aspects of the system for the system, for example, levels of security which allow access to different areas of data
- made reference to the organisation policies e.g. cyber safety agreement and relating it to the legal or ethical issue they were discussing
- discussed measures in place for meeting the requirements of the Privacy Law e.g. privacy policy in place, clearly stating on enrolment forms what will happen to data.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- used their own words to develop a report
- referenced where required
- evaluated the effectiveness of an Information System within an Organisation
- often made evaluative comparisons between alternative practices or policies
- evaluated aspects of the application of Privacy Law and or principles in an organisation

- evaluated the advantages and disadvantages of practices offsite backup, automated backup, cloud computing and so on
- evaluated aspects of the system that allowed it to function e.g. speed of connection showing evaluation of the trade-offs e.g. speed vs cost, **shared information within information systems.**

91371 Demonstrate understanding of advanced concepts from computer science

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Candidates who clearly demonstrated understanding of basic concepts from computer science wrote in their own voice, providing evidence from their own work and experience to support any factual or referenced material.

Candidates who simply reproduced information from sources such as Internet sites or teacher notes often did not demonstrate their own understanding.

Candidates who reproduced supplied or sourced material without relating the identified knowledge to a specific context such as a digital device, often did not demonstrate their own understanding.

Photographs and diagrams presented as evidence without specific annotation often did not demonstrate understanding.

Annotated photographic and diagrammatic evidence developed to demonstrate their own understanding assisted candidates to achieve.

In considering human computer interfaces, some candidates confused functionality of devices with usability. Some candidates did not refer to the usability heuristics.

Some reports closely followed the exemplars with just minimal changes of data.

Candidates who produced neatly formatted documents were advantaged as this contributed to their demonstration of understanding.

Some candidates missed one of the three encoding requirements for Achieved – error control, encryption and compression.

ACHIEVEMENT

Candidates who were awarded Achievement for this standard demonstrated the required skills and knowledge. They commonly:

- described ways in which different types of data could be represented using bits, such as text, colour, audio, numbers, images, etc.
- described the concept of encoding information using compression coding and described typical uses of compression coding such as images, audio, etc.
- described the concept of encoding information using error control coding and described typical uses error control coding such as parity, ISBN, etc.
- described the concept of encoding information using encryption and described typical uses of encryption such as protecting the confidentiality and integrity of sensitive user data
- provided examples from human-computer interfaces, such as a chosen device, and described how they illustrated usability heuristics.

NOT ACHIEVED

Candidates who were awarded Not Achieved for this standard lacked some or all of the skills and knowledge required for the award of Achievement. They commonly:

- described only one or two of the three required concepts of data representations, encoding, and usability heuristics
- described only one way in which different types of data could be represented using bits, such as text, numbers, images, etc.
- copied material verbatim from other sources (particularly the internet) and, in doing so, failed to show their own understanding
- copied material verbatim from other sources and did not differentiate between copied data and their own understanding
- lacked detail in their descriptions
- attempted to paraphrase without understanding
- used the allowed pages unnecessarily with cover sheets or extensive printouts of device specifications, or tables of data from the Internet.

ACHIEVEMENT WITH MERIT

In addition to the skills and knowledge required for the award of Achievement, candidates who were awarded Achievement with Merit commonly:

- compared and contrasted different ways in which different types of data could be represented using bits; such as ASCII and Unicode, 8 bit and 24 bit colour, etc., and discussed the implications
- discussed how a widely used technology was enabled by one or more of compression coding, such as JPEG, ZIP, etc.; or error control coding such as ISBN, etc.; or encryption, such as email, etc.
- observed others using a given human-computer interface, such as a chosen device, software application, etc., so that they could evaluate the human-computer interface against Nielsen’s usability heuristics
- used annotated photographic and diagrammatic evidence to demonstrate their understandings.

ACHIEVEMENT WITH EXCELLENCE

In addition to the skills and knowledge required for the award of Achievement with Merit, candidates who were awarded Achievement with Excellence commonly:

- evaluated a widely used system for compression coding such as ZIP, or error control coding such as ISBN, or encryption such as e-mail message encryption technologies
- suggested a number of relevant improvements to a given human-computer interface such as their chosen device, based on their evaluation in terms of Nielsen's usability heuristics
- wrote in their own voice, providing evidence from their own work and experience to support any factual or referenced material
- used 'student voice' related to their own investigation to show comprehensive understanding
- produced neatly formatted documents as this contributed to their demonstration of understanding.