T-LEVELS | Institute for Apprenticeships & Technical Education

Chief examiner's report

T Level Technical Qualification in Digital Business Services (Level 3) (603/6902/4)

Summer 2022 - Core A and B

NCFE

Chief examiner's report

June 2022 – Core A and B

Assessment dates: **Core A – 14 June 2022**
Core B – 21 June 2022

Paper numbers: **P001856**
P001859

This report contains information in relation to the externally assessed core sub-component provided by the chief examiner, with an emphasis on the standard of student work within this assessment.

The report is written for providers, with the aim of highlighting how students have performed generally, as well as any areas where further development or guidance which may be required to support preparation for future opportunities.

Key points:

- grade boundaries
- standard of student work
- responses to the external assessment questions
- administering the external assessment

It is important to note that students should not sit the core exam until they have received the relevant teaching of the qualification in relation to this sub-component, and that both papers must be taken in any given series that a student sits the core exam.

Grade boundaries

Raw mark grade boundaries for the series are:

	Overall	Notional Boundaries	
		Paper A P001856	Paper B P001859
Max	212	106	106
A*	167	83	83
A	147	74	73
B	127	64	63
C	107	54	53
D	88	44	43
E	69	35	34

Grade boundaries are the lowest mark with which a grade is achieved.

Students receive a grade for the core exam sub-component as whole, and although there are no official grades for the individual assessments in the core exam, it can be useful for students and teachers to see how the core exam grade was achieved. The grade boundaries given for each assessment are known as

‘notional grade boundaries’, as they are for illustrative purposes only. For further information on notional grade boundaries, please see our guide T Levels: Notional boundaries for the Core Exam assessments available on the qualification page of our QualHub website.

For further detail on how raw marks are converted to uniform marks (UMS), and the aggregation of the core component, please refer to the qualification specification.

Standard of student work

The standard of work seen in this series showed that students struggled to recognise the demands of those questions regarding higher order skills, such as application and analysis.

Some topics seemed quite challenging for students, with some of the more conceptually difficult topics attracting largely generic answers, or simply left blank.

Work in this series tended to offer an inconsistent and largely superficial understanding of specification content. While students could give definitions, descriptions and examples of theories, concepts, and industry practices, they tended to struggle to apply their understanding to the case study data related to questions, which is a key skill required to achieve higher marks.

Extended writing questions also seemed to be an area of difficulty for many students in this series. While answers often began promisingly with sharp definitions of concepts, these were rarely applied to the case study provided with any consistency or accuracy. Many students failed to provide balanced arguments, and conclusions rarely moved beyond vague assertions about things being simply good or bad to achieve the standard of evaluative writing required to achieve the highest mark bands.

Most students seemed able to attempt most questions in most sections of both papers, although section C in paper B had many questions that were not attempted by students.

A narrow range of achievement was seen, with most students clustered at the lower end of the mark distribution. Statistical analysis of questions in both papers indicated that questions tended to perform well, providing a clear distinction between stronger and weaker students, suggesting that most students entered for this assessment were underprepared both in terms of their knowledge and understanding of specification content, and their ability to understand and apply examination technique effectively.

Providers should focus on ensuring that candidates for future series have covered all specification content, have appropriate support with revision in preparation for assessment, and that they have adequate opportunities to complete exam-style questions, receive formative assessment on their performance and have opportunities to act on this feedback to refine their examination technique. Students should approach subsequent assessments with a focus on applying knowledge to case studies, analysing issues related to case studies and making evaluations of the issues that they raise.

Responses to the external assessment questions

Core Paper A

Section A: Culture and context

Performance in this section was mixed. Students generally gained marks for demonstrating knowledge but struggled to gain marks for analysis, application and evaluation. Answers tended to be relatively simplistic and limited use was made of case study data provided. Students regularly demonstrated misunderstandings and misconceptions relating to the content of questions.

Question 1 was generally answered well by students. Most were able to outline the psychological impact of digital technology with either stress, anxiety or depression being common answers. In some cases, students did not realise that an outline means they need to elaborate on their point. For example, students did not earn a mark for simply stating that digital technology causes stress alone but did gain a mark for outlining how stress can stem from, for example, reliance on mobile devices.

Question 2 was answered well by some students, who were able to describe how developments, such as self-service checkouts lead to less human contact and thus dehumanise service.

Question 3 required students to use the data provided to support their answer. Without doing so, it is not possible to gain full marks. Students needed to develop 2 of the points from the data, such as adults always having their phones with them, sharing personal information on social media, or not being able to participate in online activity due to low skill levels. To achieve full marks for this question, students needed to pick 2 points from the data, describe why that point is negative and develop their response to show how this affects adults.

Question 4 was generally well answered with most students able to describe 2 stakeholders. A minority of students simply identified the stakeholders and did not give a description each group, which meant they were not able to gain any marks.

Question 5 required students to use case study data to support their answers. Answers not in the context of the music event business did not gain marks. Students needed to include 2 elements in their answer. They needed 2 points relating to digitalisation, such as promoting events via social media or analysing large data sets. But these answers had to be contextualised, for example, noting that social media promotion of music festivals would be seen by younger people who might be more likely to be interested in purchasing tickets to such events. This point would then need to be developed to show how this would impact on the profits of the case study business. For example, showing how getting promotional messages to the right audience would lead to more purchases at relatively low cost, increasing profits.

Question 6 was split into 2 parts. Students had to describe 2 benefits of the preparation activities carried out as part of a change initiative. Students then needed to explain how each activity would increase the likelihood of the change (the introduction of a booking system) being successful.

Many students missed the point of the question and talked about the benefits of the booking system itself. This did not gain them any marks. Where students did gain marks, they identified relevant preparation activities, such as holding consultations with staff or putting up posters and described a benefit of that activity. For example, holding the consultation meetings helped to gain buy-in and gave staff a chance to ask

questions, leading to them understanding the change and being more willing to engage with it. Only a small number of students answered the second question in context. For example, showing why consultation meetings would lead to the implementation of the booking system being successful. Students should be aware that when a question is made up of 2 or more parts, they should ensure they answer each part in turn, and where a case study is provided, each part of their answer should be contextualised to that case study if required by the question.

Question 7 required students to do 2 things; to describe 2 risks and then explain a potential impact of each risk. There were several risks noted in the case study, such as staff working with people they do not know or using systems they are unfamiliar with. Many students simply copied these points from the case study without describing why it is a risk. Students should be aware that they need to manipulate data provided to achieve application marks on this type of question.

Relatively few students successfully answered the second question. Once a student had described a risk, they should have made a judgment about the potential impact of each. For example, a student describing the risk of poor communication might have noted that this meant information about clients was not shared with colleagues. A potential impact of this might be poor customer service leading to clients not being given the most appropriate IT support and subsequently using a different company for IT support.

Question 8 required students to describe 2 ways that an app provides value to customers. There were 2 points identified in the case study; exclusive special offers and a facility to ask questions and get notifications of responses. Many students were able to identify these points, but few were able to say why they add value for customers, meaning that they could not receive any marks.

A common mistake seen on this question was to focus on the benefits of these sources of added value for the business, such as, customer retention or extra profits. Where students have described the ways that the app adds value for customers, they should have then assessed the impact of adding value for customers. To achieve those marks, students should develop their previous point and consider the impact of adding value for customers. Few students attempted this part of the question, and most who did gave generic answers, such as noting that customers would like the app features. This did not provide the level of evaluative depth needed to achieve marks. Students should have focussed on issues such as the convenience of the question feature leading to customers being less likely to switch to other banks due to the convenience that they get from the features in the app and the satisfaction of getting quick responses.

Question 9 was the first of 2 extended writing items on this paper. This question included up to 12 marks for answering the question and up to 3 marks for the quality of the written communication demonstrated.

Most students attempted this question, but few gained more than 4 marks due to their answers being relatively simplistic and lacking analytical or evaluative depth. Students were generally able to gain marks for demonstrating knowledge of white hat hackers, but few could demonstrate any knowledge of the codes of practice with which these hackers operate. Students were given a list of relevant codes of conduct in the data accompanying the question and could have used any of these to examine the use of white hat hackers. Even the best responses tended to focus on simplistic answers about the risk of white hat hackers abusing their position to steal data. Students should be prepared to give more comprehensive and sophisticated answers to achieve the higher marks available for this type of question, using all the information provided and addressing all the requirements of the question set.

Section B: Diversity and inclusion and digital environments

Question 10 was generally answered well by students, with most able to recognise RAM as temporary, volatile storage.

Question 11 was also generally well answered with most students able to correctly give an example of a protected characteristic.

Question 12 was challenging for some students, who lost marks as their responses simply stated a form of direct discrimination, such as racism, but did not provide any detail as to what this might involve, for example, racism is discrimination against someone based on their ethnic origin. Without relevant elaboration, students were not able to earn marks for this question.

Question 13 required students to describe an appropriate network for sharing confidential data. There were 2 common but significant errors on this question. Firstly, students gave an incorrect description of an appropriate network, their answer needed to reflect the increased security needs for sharing confidential data between an office and workers homes. As such, commonly given answers such as MAN or LAN were not appropriate. The second mistake that students commonly made was simply to name a type of network, without giving any description of the network or why it might be appropriate.

Question 14 required students to name 2 web protocols and explain why 1 web protocol could be used to transmit confidential data. While most students were able to name 2 web protocols, relatively few were able to explain why 1 of these protocols was appropriate for sending confidential data. This was often because students tried to explain a less appropriate protocol such as POP3 which was not appropriate for the task of sending sensitive data.

Question 15 required students to explain why virtual machines are appropriate for examining data from external sources. Most students recognised that a virtual machine provides a sandboxed environment, but relatively few were able to link this to the security benefits of having external files opened on a machine that is separate from the main company network.

Question 16 was generally answered poorly by students with few, if any, able to demonstrate any understanding of the concept of hypervisor systems. Most students gave a more general answer about virtual machines which did not answer the question. It is important that providers ensure that students are familiar with all the relevant specification content when preparing them for this assessment.

Question 17 was comprised of 3 sub questions. Most students were able to answer the first part of the question, giving a simple definition of cloud computing, but few students were able to answer the second and third parts of the question successfully, confusing forms of cloud computing, such as SAAS, with brands offering cloud services, such as Google Drive. Students need to be able to be aware of this common misconception when preparing for future assessments and should be able to differentiate between forms of cloud computing and examples of the cloud services offered by different brands.

Question 18 required students to explain 2 impacts of not applying digital inclusion principles for a case study business. To achieve marks on this question, students needed to give an answer that was applied to a specific context. Unfortunately, many students gave a general answer to this question which identified a potential drawback of failing to be inclusive, such as difficulty in recruiting staff, but failed to contextualise the response to the question, for example by linking the difficulty in recruiting to the need for staff with certain qualifications.

Question 19 required students to discuss the benefits of using virtual machines. Answers needed to be contextualised to reflect the needs of a business which carried out analysis of malicious software. Most students were able to identify relevant benefits of a virtual machine, but many lost marks because they did not contextualise their response.

Question 20 was composed of 2 sub-questions, asking students to describe 3 benefits of inclusion and then to explain how each benefit might affect the brand reputation of a specific business. Most students were able to describe 2 or more benefits of inclusion, but relatively few were able to link these benefits to the brand reputation of the business. Providers should ensure that students are aware that some questions on this assessment might be composed of 2 or more sub-questions and that they should ensure that they answer all parts of each question.

Question 21 was the second extended writing question on this paper. Students were required to analyse the benefits of a resilient digital environment. 12 marks were available for answering this question, with a further 3 marks available for the quality of written communication (QWC).

Most students failed to demonstrate any clear understanding of a resilient digital environment. Many answers made generic comments such as having a good reputation or making customers happy, but very few students were able to demonstrate knowledge of this concept, nor were they able to apply it to the context provided. Avoidable spelling and grammatical errors tended to leave most students unable to achieve more that 2 marks for QWC.

Section C: Learning and planning

Question 22 was generally answered accurately by students with most able to correctly identify skills as the resource created by training.

Question 23 was generally answered poorly with only a small number of students showing any understanding of the concept of professional development and how it applies to workers. Some students made points that related to the benefits of continuous professional development (CPD) to businesses rather than workers, such as improved efficiency or productivity. Providers should help students prepare for future assessments by giving them opportunities to practice similar questions, giving them feedback on whether their responses focus on the correct subject.

Question 24 was generally well answered, with most students able to give a reasonably well contextualised response, such as pointing out that 3D printing would create working prototypes of products that could be play tested.

Question 25 required students to apply Kolb's learning cycle to a specific scenario. Few students were able to show any understanding of the learning cycle with only a very small minority able to name or describe any stages of the learning cycle. Consequently, few were able to explain how the cycle could apply to the given staff development scenario. Providers should ensure that students are familiar with and able to describe and apply the elements of the different models in the specification.

Question 26 required students to answer 2 sub-questions. Some students were able to answer the first sub-question, describing an appropriate source of knowledge, but few students were able to answer the second

sub-question explaining why that source of knowledge was appropriate for the staff in the case study business.

Question 27 was generally not well answered by students. Few were able to show an understanding of project management, instead giving generic answers that simply suggested that customers would be unhappy, and profits would be lost. Students should have identified aspects of the project that were badly managed from the case study, such as a lack of clear goals, and discussed the consequences of that issue, such as confusion among staff leading to a lack of productivity and deadlines being missed.

Question 28 required students to discuss the benefits of critical path analysis (CPA) to a publishing business. Few students were able to demonstrate any knowledge of critical path analysis and how its application to the provided scenario might be beneficial. Most students simply gave vague and generic answers, such as 'the project will be completed quicker' or 'the business will make more money.'

Students should be prepared for questions such as this by practicing linking the benefits of tools, such as CPA to given scenarios. Providers should empathise the need to link responses to the focus of each question and those generic answers will not be awarded marks.

Core Paper B

Section A: Tools and testing

Question 1 was generally answered accurately by students with the majority able to identify the definition of an interface.

Question 2 was generally not well answered by students. Some students gave the names of presentation software, others simply described the features of presentation software, such as being able to change font sizes or manipulate images. Providers should ensure that students are familiar with the language of the specification and the way that content is framed within it.

Question 3 required students to apply the root cause analysis process to a specific problem. Some students were able to describe one stage in the root cause analysis process, but few students were able to apply that model to the problem of website downtime. Providers should ensure that students are able to apply the models in the specification to a range of different scenarios.

Question 4 required students to give a contextualised answer, showing why a business that regularly needs to send and receive sensitive information globally might engage in penetration testing on a regular basis. While several students were able to achieve the first mark by describing the process of penetration testing, few students were able to develop this point to show why penetration testing was necessary for this specific business.

Question 5 required students to discuss reasons why a business that is intending to expand a web-based service might wish to stress test its service. This question proved challenging for students with many struggling to accurately discuss the concept of stress testing. Most students seemed to confuse stress testing with usability testing, discussing testing site features and user experience. Providers are reminded that students should be familiar with and able to differentiate between the different types of testing listed in the specification.

Question 6 was composed of 2 sub-questions. The first sub-question required students to outline 2 reasons for creating a dashboard and the second explaining how each reason will benefit the users of the

dashboards. Many students were able to partially answer the first part of the question, giving at least one reason for creating a dashboard. Relatively few students were able to give a contextualised answer to the second sub-question.

Question 8 required students to answer 2 sub-questions, the first of which asked for a description of communication tools that allow collaboration on documents. Some students were able to give somewhat accurate answers to this question, citing examples such as video chats where documents could be shared and discussed. Many students lost marks on this section because they did not describe communication tools that facilitated collaboration on documents, instead focussing on communication tools in general such as text messaging. Most students did not answer the second sub-question at all. Providers are reminded that students should be able to practice items of this type and should read questions carefully, ensuring that they answer all questions and sub-questions.

Section B: Legislation and security

Question 8 was generally answered accurately by most students, with most correctly identifying medical information as an example of confidential human resource data.

Question 9 was not well answered by students with relatively few showing any awareness of the requirements of the Health and Safety at Work Act 1974. Providers are reminded that students should know the basic requirements of the legislation listed in the specification and should be able to apply that understanding to different scenarios.

Question 10 required students to explain how criminal law might protect clients of a business. Most students seemed unaware of the functions of criminal law. Most responses seemed to confuse criminal and civil law, referring to clients being able to sue the business if they failed to protect data. Providers are reminded that students should know the difference between criminal and civil law and be able to apply the functions of each type of law to different business contexts.

Question 11 was generally not well answered. Most students seemed unaware of the benefits of ISO standards and how they could be applied to a given business scenario. Most responses seemed to focus more generally on standards, making vague points about high quality or improving profit without giving any indication of how this might relate to the documents produced by the ISO and how it might be useful to a digital business. Providers are reminded that students should be taught about the ISO standards, how they might be used by firms, and how this might influence business and customer behaviour.

Question 12 required students to discuss a financial consequence of failing to maintain confidentiality. Many students seemed to struggle to identify any financial consequences, instead talking in more general terms about issues such as reputational damage or unhappy customers without linking these issues to any financial impact. Students also failed to use the data provided to support their answers. For example, few students picked up that the confidentiality breach impacted a lucrative client. This meant students were not able to access the full range of marks for this question as higher marks required a contextualised analysis.

Question 13 required students to address 2 sub-questions. Firstly, how would botnets and malware affect the network of a business, and secondly, how would the impact of botnets and malware on the network affect the operation of the business. Most students attempted the first of these questions but not the second. Students were generally able to define malware and botnets but were not able to describe the impact of either on a business network.

Question 14 was the first extended writing question on this paper. This question included up to 12 marks for answering the question and up to a further 3 marks for the quality of written communication. This question asked students to consider non-technical factors that might cause the launch of a new service to fail. Many students simply suggested factors that might cause a failure without linking them to the case study. In some cases, students seemed confused about the difference between non-technical and technical factors. Providers are advised to support students in improving their extended writing skills. Opportunities for regular practice of this style of question alongside timely formative assessment should help students construct more sophisticated answers that blend theory, context, and analysis.

Section C: Digital analysis and data

Question 15 was generally answered accurately by students with most identifying geospatial data as the correct answer.

Question 16 divided students, with some able to correctly name iteration and others seeming to lack a knowledge of the characteristics of algorithms, making suggestions such as different types of loops.

Question 17 asked students how a business could use algorithms for analysis. While many students were able to point to the outcome of this process, such as identifying patterns in sales, few were able to describe how an algorithm could be used to do this (for example, by categorising data and carrying out calculations).

Question 18 required students to discuss the importance of unambiguous code for a given business. Few students seemed familiar with this concept, with most answers simply giving explanations of why code needs to be error free.

Question 19 requires students to explain how a process could be decomposed. The case study provided students with information that needed to be used to support this task. Few students seemed to understand that decomposition involves breaking a problem down into smaller steps. Consequently, many answers to this question tended to focus on why a business might need to check IP addresses against known threats, but few showed how they might organise that process.

Question 20 was divided into 2 sub-questions. The first question asked students to identify 2 tools that could be used to design algorithms. The second question asked students to explain how the case study business could use each tool to design an algorithm. Most students seemed unable to answer this question. Typical answers included Word and PowerPoint, suggesting that many students were not familiar with the tools used to design algorithms. Where students got the first part of the question wrong, they were not able to gain any further development marks as their explanations were invariably wrong, for example, suggesting that each stage in an algorithm be explained on a separate presentation slide. Providers should ensure that this aspect of the specification is taught to students and that they have opportunities to use relevant tools, such as flowcharts and pseudocode.

Question 21 was divided into 2 sub-questions. Students needed to describe the characteristics of a relational database and then explain how each characteristic helps the target business to manage its orders efficiently. Unfortunately, few students attempted this question. Most who did gave generic answers about the benefits of analysing data. Providers should ensure that students are familiar with the characteristics of relational databases and that they are able to apply this knowledge in a range of business scenarios.

Question 22 was composed of 2 sub-questions. Firstly, students had to outline 3 methods of visualising data, they then needed to describe how these visualisations could be used to make decisions by the directors of a company. In general, most students attempted the first sub-question but not the second. Few students

demonstrated sufficient knowledge of visualisation methods. Students demonstrated several misconceptions, for example describing models such as entity relationship diagrams. Students should be familiar with visualisation techniques and should be able to explain their use. For example, the appropriateness of line graphs for visualising time series data and the use of this in highlighting trends over time, allowing decisions to be made based on the nature of these trends.

Question 23 was the second extended writing question on this paper. This required candidates to analyse the impact of monitoring KPIs on a manufacturing business. This question tended to be badly answered with few students demonstrating knowledge of KPIs. Little use was made of the data provided and thus most responses to this question were awarded relatively few marks. Providers should ensure that students are aware of the concept of KPIs, how they might be monitored and the impact of this on business performance. Students should be able to apply this concept to scenarios and then analyse and evaluate the use of KPIs in different settings.

Administering the external assessment

The external assessment is invigilated and must be conducted in line with our Regulations for the Conduct of External Assessment.

Students must be given the resources to complete the assessment, and these are highlighted within the Qualification Specific Instructions Document (QSID).