ROYAL STATISTICAL SOCIETY

DATA | EVIDENCE | DECISIONS

RSS RESPONSE TO DEPARTMENT FOR EDUCATION CONSULTATION ON POST-16 L2 AND L3 QUALIFICATIONS: 2027 PROPOSED SUBJECT CONTENT

04 June 2026

This response has been submitted via an online form. Please find a copy of the questions we responded to below. Full details about the consultation can be found here.

Section B: Which qualifications are you responding about?

- V Level in Digital Systems and Data
- Foundational Certificate in Digital Systems and Data

Section C: V Level Questions

9. To what extent does the proposed content enable students to achieve the aims of the qualification?

- Partly

Please explain your answer.

The Royal Statistical Society (RSS) is a membership organisation for statisticians and data scientists, and we advocate for the importance of statistics and data. Representing over 10,000 members, we champion the role of statistics and data in society, and work to ensure that policy formulation and decision-making are informed by evidence for the public good. We believe that statistical literacy is important for all to ensure that people understand the data and statistics which influence their daily lives, their work and the world around them, and can meaningfully interpret and engage with those statistics.

We have serious concerns that the Digital Systems and Data V Level focuses heavily on digital systems, and does not contain enough subject content on data. Only one of the work-related purposes (WRP1) focuses on data skills, and the Core Knowledge and Understanding fails to make any explicit reference to statistical or data literacy. The proposed subject content document indicates that one of the core aims of the qualification is to support students to 'interpret, analyse and apply digital concepts' and to 'use that understanding to inform decisions and solve problems'. Evidence-based decision-making, however, relies on statistical thinking; statistical and data literacy must therefore have greater prominence in the subject content for this qualification.

We believe that WRP1 must align better with the investigative cycle, or the Problem, Plan, Data, Analysis, Conclusion (PPDAC) cycle. This is essential if data skills are to be framed within a purposeful process of inquiry, prioritising problem-solving, instead of being understood as isolated techniques. While WRP1 provides a welcome emphasis on preparing, analysing, interpreting and presenting data, including consideration of bias, limitations and reliability, it would better align with the aims of the qualification if there were explicit inclusion of the earlier stages of investigation - defining

the problem and planning the approach. Acknowledging that the qualification content expects students to analyse and interpret data according to a defined purpose, greater emphasis on how that purpose is established, and how appropriate data and methods are selected, would make the analytical work more coherent and meaningful. This would support deeper understanding of data quality and bias, improve the justification of analytical choices, and better reflect authentic workplace practice, where problems are rarely pre-defined and require careful framing and planning before analysis begins.

We are concerned that the Core Knowledge and Understanding section does not make any explicit reference to data or statistical literacy as concepts underpinning the qualification. This is a notable omission given that a number of the points included are fundamentally statistical in nature. For example, references to 'the implications of using AI-enabled systems in decision-making, including limitations, bias and the need for human oversight' and the 'role of prompts and structured inputs in generating outputs from AI-enabled systems' rely on understanding concepts such as uncertainty, representativeness and inference. We believe that the Core Knowledge and Understanding should clearly include statistical and data literacy, highlighting them as fundamental concepts within the qualification.

We are also concerned that the subject content does not clearly specify the range of statistical and mathematical methods that students are expected to apply when analysing data. While learners are expected to prepare, analyse and interpret data, there is little indication of the techniques they should use to derive estimates or draw conclusions. For example, there is no explicit reference to summary statistics, measures of variability, sampling approaches or basic inferential reasoning. Without greater clarity on these expectations, there is a risk that learners engage in surface-level data handling rather than developing the quantitative reasoning skills required for progression to higher-level study and technical roles.

Finally, we think that the proposed content places insufficient emphasis on how data is generated, measured and collected. Statistical literacy requires learners to critically evaluate whether the data available is appropriate for the question being asked, including consideration of sampling methods, representativeness and potential sources of bias. Explicit inclusion of concepts such as sampling bias, measurement error and data provenance would strengthen learners' ability to assess data quality and make sound, evidence-based decisions.

In summary, we recommend that the subject content explicitly include:

- Core statistical measures (eg, averages, spread, distributions)
- Basic inferential ideas (eg, sampling, estimation, uncertainty)
- Data collection principles (eg, sampling methods, bias, representativeness)
- Critical evaluation of data sources and data quality
- Clear expectations about when and why different analytical approaches should be used

10. How well does the draft content support progression to higher-level study (defined as level 4+), or an apprenticeship?

- Fairly well

What changes, if any, should be made to the content to strengthen progression?

We believe that WRP1 would be strengthened by more clearly reflecting the PPDAC cycle, with greater emphasis on defining the problem and planning the approach. This is essential for supporting learner progression, as it enables students to engage with problems in a way that more closely reflects how they arise and are addressed in real-world workplace contexts. RSS research (2023) on Level 3 Data Technician and Level 4 Data Analyst apprenticeships found that employers felt that while apprentices had many of the right skills, they often lacked an understanding of the fundamental principles which help people to discern what statistical techniques to apply and when to do so. Using the PPDAC cycle to structure the teaching of data skills would address this gap, supporting learners to make more informed methodological choices and equipping them with the tools and confidence to apply their skills in context.

Greater specification of statistical methods and data collection principles would also support progression by addressing a known gap in learner preparedness. Employers and higher education providers consistently report that learners struggle not with using tools, but with selecting appropriate methods and judging the reliability of data. Embedding these principles within the qualification would help learners to move beyond procedural competence to informed analytical decision-making.

11. Is the content set at an appropriate level of demand for level 3 students? What changes, if any, are needed to the content to ensure it meets the expected level of learner demand for a Level 3 qualification?

- Appropriate

12. Are there any issues associated with delivering this content that should be considered to ensure that the content is manageable for providers to deliver?

There is a shortage of teachers with the combined statistical and technical expertise needed to deliver this course effectively at Level 3. While providers offering existing Level 3 IT qualifications (such as BTEC Information Technology) may be able to transition more readily, there is currently limited established provision specifically focused on data skills at Level 3. Effective delivery will therefore require targeted professional development, clear guidance for teachers and sufficient lead-in time.

13. Does the content have the potential to have a disproportionate impact, positive or negative, on specific groups, in particular those who share a 'protected characteristic' (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation) or those from lower socio-economic backgrounds?

- Yes

If yes, please explain.

This qualification has the potential to have a disproportionate negative impact on learners from lower socio-economic backgrounds. Learners are likely to require regular access to a laptop or computer, in addition to a reliable internet connection, in order to engage in learning outside of the classroom.

Those who do not have consistent access to devices or reliable connectivity are therefore likely to be at a disadvantage in terms of completing independent study, practicing technical skills and keeping up with course requirements.

However, courses with a more even balance of application and technical skills are more likely to recruit female students than courses which focus purely on technique and process.

14. Is the title of the qualification appropriate?

- Yes

15. Is any of the content unclear or unambiguous?

- No

Section D: Foundational Certificates and Occupational Certificates Questions

17. To what extent does the proposed content enable students to achieve the aims of the qualification?

- Partly

Please explain your answer.

We have significant concerns that the Digital Systems and Data Foundation Certificate is heavily oriented towards digital systems, with only one (LO1) of the six specified learning outcomes relating to data skills. The transferrable skills set out in the qualification aims refer to skills such as planning, analysing, critical thinking, investigating, evidence-based decision-making and evaluating. We strongly believe that the content should therefore include explicit references to statistical and data literacy, with statistics and data education forming a larger proportion of the subject content. The content should place greater emphasis on the investigative (PPDAC) cycle, helping learners to frame problems and interpret findings in context; this is also essential if the qualification is to provide a progression pathway into further study. At present, the foundational certificate does not link well with the proposed V Level qualification content, specifically the investigative elements at Level 3. Greater alignment between the two qualifications would help ensure a coherent and effective progression pathway.

18. Is the content set at an appropriate level of demand for level 2 students?

- Not demanding enough

What changes, if any, are needed to the content to ensure it meets the expected level of learner demand for a Level 2 qualification?

At present, the expected knowledge and understanding set out in LO1 risks being procedural and decontextualised; students are learning how to perform basic data skills, but not when, why or whether to use them. This issue is compounded by the limited attention given to how data are produced. Learners are not explicitly required to consider how datasets are constructed, nor to question their reliability or representativeness. Introducing these ideas at Level 2, at an accessible level, would help establish good analytical habits early, such as questioning sources, recognising bias and understanding that data do not speak for themselves.

We believe that subject content should be structured according to the PPDAC cycle in order to contextualise data skills and foreground problem-solving. This is closely linked to the development of statistical thinking, which goes beyond applying techniques to include questioning, interpreting and critically evaluating data in context – skills which are highlighted as aims of the qualification.

Structuring learning in this way can also make data more accessible and engaging for learners who may lack confidence in their mathematical ability. Beginning with the problem and planning stages enables learners to connect data work to real-world questions that matter to them, and to develop a clear sense of purpose before encountering technical content. This can help reduce anxiety and increase engagement, as learners are better able to see the relevance of data and approach analysis with greater confidence. Encouraging learners to articulate their plan and reasoning also provides a useful reference point if they encounter difficulty later in the process, supporting persistence and deeper understanding.

For example, while the subject content references ‘the role of graphical and tabular formats… in supporting the interpretation and communication of findings’, this is primarily framed in terms of use and presentation, rather than critical evaluation. When we introduce statistical thinking, learners understand that data visualisation is not just about constructing charts correctly, but about interrogating them. This includes questioning how choices around scale, categories and format influence interpretation, identifying misleading representation, and judging whether a given form of visualisation is appropriate for the questions being asked. These are fundamentally statistical judgements, not just technical skills.

Without this emphasis, there is a risk that students learn procedural skills without developing the statistical thinking necessary to harness data effectively. Embedding a clearer focus on statistical thinking, by using the framework of the PPDAC investigative cycle, would help ensure that students engage more critically with data.

19. Are there any issues associated with delivering this content that should be considered to ensure that the content is manageable for providers to deliver?

As with the proposed Level 3 Digital Systems and Data qualification, we are concerned that there is a shortage of teachers with the relevant expertise needed to deliver the Level 2 qualification. Effective delivery will therefore require targeted professional development, clear guidance for teachers and sufficient lead-in time.

20. Does the content have the potential to have a disproportionate impact, positive or negative, on specific groups, in particular those who share a 'protected characteristic' (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex and sexual orientation) or those from lower socio-economic backgrounds?

- Yes

If yes, please explain.

As with the proposed Level 3 Digital Systems and Data qualification, the foundational certificate also has the potential to have a disproportionate negative impact on learners from lower socio-economic backgrounds. Learners are likely to require regular access to a laptop or computer, in addition to a reliable internet connection, in order to engage in learning outside of the classroom. Those who do not have consistent access to devices or reliable connectivity are therefore likely to be at a disadvantage in terms of completing independent study, practicing technical skills and keeping up with course requirements.

Courses with a more even balance of application and technical skills are more likely to recruit female students than courses which focus purely on technique and process.

21. Is the title of the qualification appropriate?

- Yes

22. Is any of the content unclear or ambiguous?

- No

25. How well does the draft content support progression to Level 3 study (i.e. A Levels, T Levels and V Levels)? What changes, if any, should be made to the content to strengthen progression?

- Not very well

What changes, if any, should be made to the content to strengthen progression?

We believe that the Foundational Certificate must include greater emphasis on building statistical thinking, structuring skills around the investigative cycle, in order to better support progression to Level 3 study.

The RSS did not provide answers to the following questions:

16. Is there anything else about the content that you would like to provide feedback on?

23. Is the content deliverable within the proposed size for the qualification?

24. Is there anything else about the content that you would like to provide feedback on?