

Methodology Chapter

Case Study: Integration of Digital Learning Tools in Three UK Secondary Schools

1. Research Design

This study adopted a **multiple-case qualitative case study design** to examine how digital learning tools were implemented and used across three secondary schools in the UK. A multiple-case approach was chosen to enable comparison across different school contexts and explore variations in digital maturity, staff readiness and pedagogical practices.

The qualitative orientation allowed for the investigation of **how teachers, students and school leaders experience and interpret the use of digital tools in classroom settings**. As digital learning is influenced by organisational culture, resources, staff confidence and leadership support, a qualitative case study was the most suitable method to capture these complex educational processes.

This design supports the study's aims:

1. To explore how digital tools are used to support teaching and learning in secondary schools.
 2. To examine staff and student experiences of digital integration.
 3. To identify barriers and facilitators shaping effective digital learning implementation.
 4. To compare digital integration approaches across schools with different digital maturity levels.
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2. Case Selection

Three secondary schools were selected using **theoretical purposive sampling** to represent different stages of digital integration:

- **School A:** Early-stage adopter with limited infrastructure.
- **School B:** Intermediate maturity with established digital tools but inconsistent usage.
- **School C:** Advanced adopter with strong digital policies and fully integrated platforms.

Selecting varied cases allowed the researcher to identify both common and unique patterns, providing a richer and more nuanced understanding of educational technology adoption.

Schools were chosen based on:

- willingness to participate,
- availability of digital learning initiatives,
- representativeness of typical UK secondary school structure,

- leadership support for research access.

This multi-case design increases the rigour of the study through replication logic—comparing whether similar themes emerge across different school contexts.

3. Participants and Data Sources

Data were collected from multiple participant groups and documentation sources to support triangulation.

3.1 Participants

Participants were selected through purposive sampling to ensure they had direct involvement in digital learning.

Across the three schools, the sample included:

- 6 classroom teachers
- 3 school leaders or digital coordinators
- 2 teaching assistants
- 12 students (focus groups across three schools)

Teachers and leaders were able to provide organisational and pedagogical perspectives, while students offered insights into day-to-day experiences with digital tools.

Participation was voluntary, and no identifying details (such as school names or teacher subjects) are included to maintain confidentiality.

3.2 Documentary Sources

The following documents were reviewed:

- digital learning policy statements
- professional development materials
- lesson plans integrating digital tools
- school improvement plans
- technology procurement documents
- safeguarding and online safety guidelines

These documents helped contextualise interview data and provided insight into institutional commitments and resource allocation.

4. Data Collection Procedures

4.1 Semi-Structured Interviews

Interviews were conducted with teachers, support staff and school leaders using a semi-structured guide. Interviews lasted 30–45 minutes and explored:

- experiences with digital tools
- perceived benefits and challenges
- readiness and confidence among staff
- student engagement and learning outcomes
- training and support mechanisms
- leadership expectations
- quality and accessibility of technology resources

The semi-structured format allowed teachers to discuss examples from their own classrooms and compare them to school-wide policies.

4.2 Student Focus Groups

Focus groups with students explored:

- how digital tools were used during lessons
- accessibility and usability of platforms
- engagement and motivation
- communication with teachers
- challenges encountered (e.g., connectivity issues)

These discussions added depth to teacher perspectives and helped verify classroom realities.

4.3 Documentary Review

Documentary analysis helped track organisational priorities and align interview responses with written policies. It also assisted in identifying disconnects between strategy and implementation.

5. Data Analysis

The study employed **cross-case thematic analysis**, guided by Braun and Clarke's six-phase framework.

Step 1: Familiarisation

All transcripts, focus group notes and documents were read repeatedly to gain an initial understanding of digital integration across schools.

Step 2: Initial Coding

Open coding was conducted manually, generating initial codes such as:

- “teacher confidence varies”
- “infrastructure not reliable”
- “students engage more with interactive tools”
- “training insufficient”
- “digital homework increases consistency”
- “school C has strong leadership support”

Step 3: Theme Development

Codes were grouped into preliminary themes:

1. **Teacher Confidence and Digital Pedagogy**
2. **Infrastructure, Accessibility and Technical Challenges**
3. **Leadership, Vision and School Culture**
4. **Impact on Student Engagement**
5. **Training and Professional Development**
6. **Differences in Digital Maturity Across Schools**

Step 4: Reviewing Themes

Themes were reviewed for internal consistency and relevance to the research questions. Cross-case comparisons were drawn to determine:

- which themes were common across all schools
- which themes appeared only in specific digital maturity levels

Step 5: Refining Themes

Themes were refined to ensure they represented the underlying data accurately and coherently. Some subthemes emerged, such as:

- “self-directed student learning”
- “digital differentiation for SEN students”
- “teacher workload concerns linked to digital tools”

Step 6: Final Analysis

Themes were integrated into a coherent narrative that compared and contrasted experiences across the three schools.

6. Ethical Considerations

Due to the involvement of minors and school settings, strict ethical measures were implemented.

- Ethical approval was obtained through the university’s research ethics committee.
- Schools provided gatekeeper consent through headteachers.

- Parental consent and student assent were obtained for focus groups.
- All data were anonymised; schools are referred to as A, B and C.
- No classroom observations were conducted to avoid safeguarding concerns.
- Transcripts were stored securely with password protection.
- Participants could withdraw at any stage.

All procedures followed the British Educational Research Association (BERA) ethical guidelines.

7. Ensuring Rigour and Trustworthiness

Several strategies enhanced methodological rigour:

7.1 Triangulation

Data from teachers, leaders, students and documents were compared to cross-validate findings.

7.2 Member Checking

Teachers reviewed a short summary of their interview interpretations to confirm accuracy.

7.3 Cross-Case Comparison

Systematic comparison across Schools A–C enabled clearer identification of patterns and contextual differences.

7.4 Reflexive Practice

The researcher maintained a reflexive diary to note assumptions, positionality and decision-making throughout the study.

7.5 Audit Trail

All analytical notes, coding decisions and theme development steps were carefully documented.

8. Limitations

The study acknowledges the following limitations:

- Only three schools were included; results may not generalise to all UK schools.
- Focus groups relied on student self-reports rather than direct classroom observation.
- Access to detailed usage analytics of digital platforms was limited.

- Teacher and student experiences may be influenced by broader post-pandemic digital changes.

Despite these limitations, the study provides valuable insights into digital integration across diverse school contexts and aligns with established case study methodology principles.

9. Summary

This methodology provided a rigorous qualitative framework for examining how digital learning tools were adopted and experienced within three UK secondary schools. By combining interviews, focus groups and documentary analysis, and by conducting systematic cross-case comparisons, the study generated a rich and nuanced understanding of digital integration in education.

The approach strengthens the credibility of findings and offers a robust structure for exploring technology-enhanced learning within real classroom environments.