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An Assessment of Research Quality in Distance Learning Dissertations

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ABSTRACT— This study assessed the quality of dissertation work completed in distance learning programmes and compared it across three supervision models. A cross-sectional comparative design was used with 240 postgraduate dissertations across 3 groups (Structured online supervision, Email-based supervision, Hybrid supervision). For Problem formulation and literature review (0–20), the highest mean was recorded in the Hybrid supervision group (15.20, SD = 2.40) and the lowest in the Email-based supervision group (12.40, SD = 2.80), a difference that was statistically significant ($F(2, 237) = 26.28$, $p < .001$, $\eta^2 = 0.18$). Of the 7 outcomes examined, 7 differed significantly across groups. Dissertations supervised through a hybrid model or structured online meetings scored higher overall, and showed lower similarity indices, than those supervised mainly by email, with the largest deficits for email-based supervision in research design, data analysis and ethics compliance. The findings indicate that the structure and regularity of supervision, rather than distance itself, are central to dissertation quality in distance programmes.

KEYWORDS— dissertation quality, distance learning, supervision, research methodology, academic integrity, postgraduate education

INTRODUCTION

Dissertations are the capstone of many postgraduate programmes, and in open and distance learning (ODL) they are often the part of the programme in which learners work most independently. Unlike classroom students, distance learners may have limited access to supervisors, libraries and peer groups, which raises concerns about the quality of their research. Regulators have emphasised quality assurance and learner support in ODL and online programmes (University Grants Commission, 2020) and academic integrity in research writing (University Grants Commission, 2018).

Evidence from doctoral education suggests that supervision quality is a major influence on research outcomes and student experience (Lee, 2008; Pyhältö et al., 2015). Studies of distance-delivered programmes also indicate that satisfaction with supervision depends on how it is organised (Erichsen et al., 2014). This study assesses dissertation quality in distance programmes using a standard rubric and compares three supervision models, aiming to identify which dimensions of quality are most sensitive to the way supervision is delivered.

LITERATURE REVIEW

DISTANCE EDUCATION AND LEARNER SUPPORT

Moore's (1993) theory of transactional distance proposes that the separation between teacher and learner creates a psychological and communication gap that can be reduced by dialogue and appropriate programme structure. Garrison and Cleveland-Innes (2005) argued that interaction alone is not enough in online learning; designed, purposeful interaction is needed to support deep learning and cognitive presence. These ideas imply that distance learners' independent work, such as a dissertation, depends on structured and responsive support.

SUPERVISION AND RESEARCH QUALITY

Lee (2008) described different concepts of research supervision, ranging from functional management of the project to enculturation and critical thinking. Pyhältö et al. (2015) showed that fit between students' and supervisors'

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perceptions of supervisory activities matters for the supervisory relationship. Erichsen et al. (2014) examined student satisfaction with supervision in doctoral programmes delivered mainly at a distance, and highlighted the importance of communication and support. Lovitts (2005) argued that being a good course-taker is not enough to succeed in independent research, which is relevant to postgraduate learners moving to dissertations.

Peer Learning, Integrity and Standards

Boud and Lee (2005) described peer learning as a pedagogy that can support research students beyond individual supervision. Phillips and Pugh (2015) provided widely used guidance on the expectations of research degrees and the roles of students and supervisors. The UGC regulations on academic integrity set out similarity thresholds and responsibilities for institutions (University Grants Commission, 2018), and the ODL regulations require learner support systems and quality assurance (University Grants Commission, 2020).

Research Gap

Most supervision research concerns doctoral candidates in face-to-face or online programmes. Comparative evidence on the quality of master's-level dissertations in distance programmes, assessed with a common rubric across supervision models, is limited, particularly in the Indian context.

Research Questions and Hypotheses

The study asked whether dissertation quality, in its different dimensions and in terms of similarity index, differs among supervision models used in distance programmes. Three hypotheses were tested.

H1: Overall dissertation quality differs significantly among the three supervision models.

H2: Scores for research design and methodology differ significantly among supervision models.

H3: The similarity index differs significantly among supervision models.

Methodology

Research Design

A cross-sectional comparative design was used. Completed dissertations from distance learning postgraduate programmes were evaluated against a common rubric, and the supervision model recorded in programme files was the grouping variable.

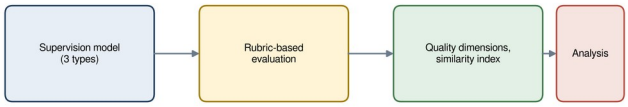


Figure 1. Study framework linking supervision model to dissertation quality

Sampling and Participants

Two hundred and forty dissertations completed over three academic years were selected through stratified random sampling from the records of distance learning postgraduate programmes in management, education and science disciplines, with eighty dissertations for each supervision model. The final sample comprised 240 postgraduate dissertations, distributed as shown in Table 1.

Table 1. Distribution of postgraduate dissertations by supervision model (N = 240)

Supervision model	n	% of sample	Description
Structured online supervision	80	33.3	Scheduled video or phone meetings
Email-based supervision	80	33.3	Mainly asynchronous email exchange
Hybrid supervision	80	33.3	Online meetings plus contact sessions
Total	**240**	**100.0**	

Measures and Procedures

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Dissertation quality was assessed with a 100-point analytic rubric of five dimensions, each scored from 0 to 20: problem formulation and literature review, research design and methodology, data analysis and interpretation, writing, referencing and originality, and ethics and compliance. The overall score was the sum of the five dimensions.

Two independent evaluators who were not involved in supervision scored every dissertation without knowing the supervision model. Inter-rater reliability was high (intraclass correlation coefficient for the overall score = .87; Koo & Li, 2016), and the mean of the two evaluators was used. The similarity index (%) was obtained from plagiarism-detection software reports excluding references.

Ethical Considerations and Quality Control

Dissertations were anonymised before evaluation and identifiers removed, and institutional permission was obtained for using the records for research. Results are reported at the group level only.

Statistical Analysis

Data were summarised as means and standard deviations. Group differences on each outcome were tested with one-way analysis of variance (ANOVA), with eta squared (η^2) as the effect size (small ≈ .01, medium ≈ .06, large ≈ .14; Cohen, 1988). Where the omnibus test was significant, Tukey–Kramer post hoc comparisons were applied. Pairwise comparisons for overall quality were used to identify which models differed. The significance level was set at $\alpha = .05$, and all tests were two-tailed.

Results

Group Differences on Study Outcomes

Table 2. Dissertation quality scores and similarity index by supervision model, M (SD)

Outcome	Structured online supervision	Email-based supervision	Hybrid supervision	F	p	η^2
Problem formulation and literature review (0–20)	14.60 (2.50)	12.40 (2.80)	15.20 (2.40)	26.28	<.001	0.18
Research design and methodology (0–20)	13.90 (2.60)	11.60 (2.90)	14.60 (2.50)	27.60	<.001	0.19
Data analysis and interpretation (0–20)	13.60 (2.70)	11.20 (3.00)	14.40 (2.60)	28.88	<.001	0.20
Writing, referencing and originality (0–20)	14.80 (2.40)	12.90 (2.70)	15.30 (2.30)	20.98	<.001	0.15
Ethics and compliance (0–20)	15.10 (2.30)	13.30 (2.60)	15.50 (2.20)	19.51	<.001	0.14
Overall dissertation quality (0–100)	72.00 (9.00)	61.40 (10.40)	75.00 (8.60)	46.57	<.001	0.28
Similarity index (%)	9.80 (4.10)	14.60 (5.30)	8.70 (3.90)	39.30	<.001	0.25

Note. Values are mean (SD). F-tests have (2, 237) degrees of freedom.

Table 2 shows the descriptive statistics and ANOVA results. For Problem formulation and literature review (0–20), the groups differed significantly ($F(2, 237) = 26.28$, $p < .001$), with large effect size ($\eta^2 = 0.18$). Statistically significant group differences were also found for Research design and methodology (0–20), Data analysis and interpretation (0–20), Writing, referencing and originality (0–20), Ethics and compliance (0–20), Overall dissertation quality (0–100), Similarity index (%). Effect sizes ranged from 0.14 to 0.28.

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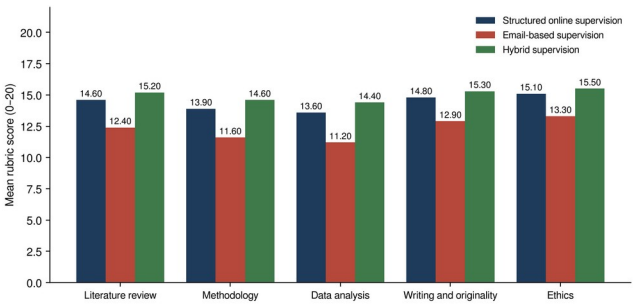


Figure 2. Mean rubric scores for the five quality dimensions by supervision model

Post Hoc Comparisons

Table 3. Tukey–Kramer pairwise comparisons for Overall dissertation quality (0–100)

Comparison	Mean difference	p (adjusted)	Interpretation
Structured online supervision vs Email-based supervision	+10.60	<.001	Significant
Structured online supervision vs Hybrid supervision	-3.00	.108	Not significant
Email-based supervision vs Hybrid supervision	-13.60	<.001	Significant

Of the 3 pairwise comparisons for Overall dissertation quality (0–100), 2 reached significance. The largest difference was between the Email-based supervision and Hybrid supervision groups (-13.60, p < .001). The hybrid and structured online models did not differ greatly from each other, but both scored substantially above the email-based model.

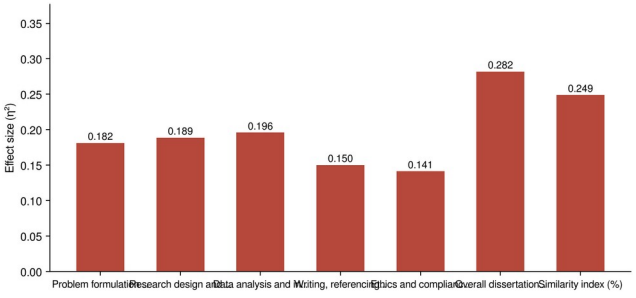


Figure 3. Effect sizes (η²) for each outcome; darker bars indicate statistically significant group differences.

Summary of Hypotheses

Table 4. Summary of hypothesis testing

Hypothesis	Outcome tested	Result	Decision
H1	Overall dissertation quality	F(2, 237) = 46.57, p < .001	Supported
H2	Research design and methodology	F(2, 237) = 27.60, p < .001	Supported
H3	Similarity index	F(2, 237) = 39.30, p < .001	Supported

In summary, all 7 of 7 outcomes differed significantly among supervision models. Email-based supervision was associated with the lowest quality scores and the highest similarity index.

Discussion

Dissertation quality differed significantly across supervision models, with a medium to large effect ($\eta^2 = 0.18$ for the first dimension and larger for the overall score). Hybrid and structured online supervision produced higher scores than email-based supervision on every dimension. This supports the view that the quality of independent research depends on responsive, dialogic support, as proposed in transactional distance theory (Moore, 1993) and in the argument that purposeful interaction, rather than interaction alone, supports learning (Garrison & Cleveland-Innes, 2005).

The largest gaps were in research design and methodology and in data analysis and interpretation, which are the dimensions that require iterative feedback and technical guidance. This is consistent with Lovitts' (2005) argument that students need support in making the transition from course work to independent research and with evidence that the fit and clarity of supervisory activities matter (Pyhältö et al., 2015; Lee, 2008). The higher similarity index in the email model is also notable: weaker guidance on writing and referencing may leave learners more reliant on source text, which regulators regard as a risk to academic integrity (University Grants Commission, 2018).

The small difference between hybrid and structured online supervision suggests that scheduled, regular, synchronous contact may be the key ingredient, and that face-to-face

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sessions add comparatively little once regular dialogue is ensured. This is encouraging for distance programmes, because online supervision is scalable. It echoes findings that communication and support are central to satisfaction in distance-delivered programmes (Erichsen et al., 2014) and that peer learning can complement supervision (Boud & Lee, 2005).

Practical Implications

Distance programmes can require scheduled supervision meetings, structured milestones, feedback templates and methodology workshops, and can use plagiarism screening early in the writing process rather than only at submission. Institutions can also build peer groups for dissertation learners and train supervisors in online mentoring.

Limitations

The study was observational, and supervision models were not randomly assigned; programmes with more resources may also use more structured models. Quality was assessed by rubric scoring, which involves judgement even with high inter-rater agreement. Student ability and prior research training were not controlled, and the dissertations came from a limited set of disciplines and institutions.

Future Research Directions

Future studies could follow learners from proposal to submission, control for prior achievement and research training, compare disciplines, and test interventions such as milestone-based supervision or peer-review circles in randomised or quasi-experimental designs.

Conclusion

Dissertation quality in distance learning programmes differed significantly by supervision model, with email-based supervision showing the weakest results across quality dimensions and the highest similarity index. Structured online and hybrid models performed similarly and better, which suggests that regular, purposeful interaction is the key to dissertation quality in distance education.

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