

An OBE–Digital Learning Media Integration Framework for Islamic Education: An Indonesian Case Study

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Abstract. *This study develops an OBE–Digital Learning Media Integration Framework for Islamic Education. It asks how programme and course learning outcomes govern the selection of digital learning media, how that selection shapes learning activities and student engagement, and whether digitally mediated assessment yields evidence of the outcomes stated. An instrumental single case study was conducted in the Islamic Education study programme at IAIN Sorong, focusing on an educational statistics course taken by a cohort of twenty-five students. Data were generated through semi-structured interviews with the lecturer and students, non-participant classroom observation and document analysis, and were analysed through data condensation, data display, and conclusion drawing and verification, with credibility resting on triangulation, member checking and an audit trail. The findings show that alignment is achieved only where media selection is derived from the intended outcome; where that derivation is absent, technology reverts to a delivery function and contributes little to demonstrable competence. Both patterns occurred within the same course. Digital media supported authentic tasks, yet engagement divided the class according to prior digital literacy, so that identical activities constituted different tasks for differently prepared students. Assessment showed the clearest gap: digital tools enriched what students did, while the instruments judging attainment remained only partly aligned with the outcome requiring methodological judgement. The framework contributes a cyclical rather than linear account of integration, in which assessment evidence recalibrates both outcome statements and media selection, and specifies the enabling conditions without which the cycle does not close.*

Abstrak. Penelitian ini menyusun Kerangka Integrasi OBE–Media Pembelajaran Digital untuk Pendidikan Islam. Pertanyaan yang diajukan adalah bagaimana capaian pembelajaran program dan mata kuliah mengatur pemilihan media pembelajaran digital, bagaimana pemilihan itu membentuk aktivitas pembelajaran dan keterlibatan mahasiswa, serta sejauh mana penilaian bermedia digital menghasilkan bukti ketercapaian capaian yang dirumuskan. Penelitian menggunakan studi kasus instrumental tunggal pada program studi Pendidikan Islam IAIN Sorong, dengan fokus pada mata kuliah statistik pendidikan yang diikuti dua puluh lima mahasiswa. Data dihimpun melalui wawancara semi-terstruktur dengan dosen dan mahasiswa, observasi kelas non-partisipan, dan analisis

dokumen, lalu dianalisis melalui kondensasi data, penyajian data, serta penarikan dan verifikasi simpulan, dengan kredibilitas ditopang triangulasi, pengecekan anggota, dan jejak audit. Hasil penelitian menunjukkan bahwa keselarasan hanya tercapai ketika pemilihan media diturunkan dari capaian yang dituju; tanpa penurunan itu, teknologi kembali berfungsi sebagai sarana penyampaian dan sedikit berkontribusi pada kompetensi yang dapat ditunjukkan. Kedua pola tersebut muncul dalam satu mata kuliah yang sama. Media digital menopang tugas autentik, namun keterlibatan mahasiswa terbelah menurut literasi digital awal, sehingga aktivitas yang sama menjadi tugas yang berbeda bagi mahasiswa dengan kesiapan berbeda. Kesenjangan paling jelas tampak pada penilaian: perangkat digital memperkaya tugas mahasiswa, sedangkan instrumen penilaiannya belum sepenuhnya selaras dengan capaian yang menuntut pertimbangan metodologis. Kerangka yang diajukan menawarkan penjelasan integrasi yang bersifat siklis, bukan linear, di mana bukti penilaian mengalibrasi ulang rumusan capaian dan pemilihan media.

A. INTRODUCTION

Islamic Education in Indonesian higher education is under pressure to demonstrate what its graduates can actually do. Accreditation instruments, national qualification standards and employers alike now ask study programmes to show evidence of attainment rather than evidence of delivery. This is demanding for a field whose subject matter includes normative commitments and dispositions that resist straightforward measurement, yet whose graduates must also perform the professional work of an educator: designing instruction, gathering evidence about learning, and evaluating it. The question at the centre of this study is how digital learning media can be made to serve that demonstrable competence rather than merely to modernise the appearance of teaching.

Outcome-Based Education (OBE) supplies the organising logic. (Spady, 1994) defines what learners should be able to do at the point of exit and designs backwards from that definition, and (Biggs & Tang, 2011) express the logic as constructive alignment: intended outcomes, learning activities and assessment tasks must address the same verb, so that assessment becomes the evidence of attainment rather than a separate ritual. In Indonesia this is institutionalised through the national qualifications framework and higher education standards, which require programmes to derive Programme Learning Outcomes from a graduate profile, decompose them into Course Learning Outcomes, and assess them against criteria communicated in advance. Two consequences matter: the outcome statement is the unit that must govern instructional decisions, including the choice of media, and because course plans and assessment instruments are documentary artefacts, alignment can be inspected empirically rather than accepted on institutional self-report. Recent evidence supports the principle while complicating it, since alignment appears to improve learning efficiency largely through motivational pathways rather than directly (Ximeng, Wang, Meng, & Albattat, 2026; Rosnagel, Baido, & Fitzallen, 2021)

Digital learning media, here, are technological resources and environments through which learners access content, perform disciplinary tasks and produce evidence of competence. (Mishra & Koehler, 2006) TPACK holds that effective integration depends on the interaction between technological, pedagogical and content knowledge rather than on technological knowledge alone, while (Puentedura, 2006) SAMR describes a gradient of task transformation from substitution to redefinition. Together they yield a testable claim:

technology contributes to attainment to the extent that it enables a task the outcome verb requires and that would otherwise be unavailable. Substitution-level use may be perfectly reasonable, but it should not be mistaken for outcome-relevant integration. In Islamic Education the distinction is consequential, since digitised texts, recorded lectures and messaging groups can expand access substantially while leaving the performances students must demonstrate entirely unchanged. Indonesian work on digital media development illustrates the point: (Trisnawati, Sundari, & Musa'ad, 2024) build TPACK-oriented interactive media that widen how content can be represented, yet neither specifies the outcomes such media are meant to evidence.

Existing scholarship has treated OBE and educational technology largely as separate problems. (Setiono, Windyariani, & Juhanda, 2023) report that OBE assessment remains suboptimal because lecturers struggle to build comprehensive instruments, but stop at diagnosis without examining what lecturers do when the instrument they can build fails to capture the outcome they wrote. (Sutrisna, Putrayasa, Wisudariani, & Sudiana, 2024) argue for systematic quality assurance in OBE curriculum development, yet operate on documents rather than classrooms. (Syafriani, Darmana, Syuhada, Sari, & Amdayani, 2023) show that technology-supported project-based learning improves outcomes in statistics, but treat technology as a treatment variable rather than asking how the outcome statement governed its selection. (Tubagus, Haerudin, Fathurohman, Adiyono, & Aslan, 2023) find that online platforms broaden access in pesantren settings, measuring reach rather than attainment, while (Manggali, Hayati, & Mundofi, 2024) connect OBE to the Independent Curriculum conceptually without testing the claim against practice. Within Islamic Education, (Rijal, Panggayuh, & Sufyan, 2026) propose a hybrid model pairing traditional Qur'anic transmission with digital delivery, (Sukmawati, Mudlofir, & Rusydiyah, 2026) show that augmented-reality media can raise student motivation, and (Asiyah, Labibunnajah, Almuzakky, & Alif, 2026) theorise learning engagement in the digital era as a matter of value co-creation rather than of access alone. (Sholeh & Murhayati, 2025) evaluate OBE implementation within an Islamic Education curriculum, but treat evaluation as a programme-level audit rather than as a classroom mechanism. These studies establish that digital media matter; none treats the outcome statement as the governing variable.

The common limitation is easy to miss because each study is defensible on its own terms. Work on OBE examines curriculum documents but stops short of the classroom, while work on educational technology examines classroom practice but treats learning outcomes as background rather than as the variable determining what the technology is for. The field can therefore say that OBE requires alignment and that digital media can enrich learning, but not how the outcome statement governs media selection, how that selection propagates into activities and engagement, or whether assessment ultimately evidences the outcome written. This is a gap of mechanism rather than of setting, and it is sharpest in Islamic Education, where outcome statements combine cognitive, applied and dispositional elements.

Three research questions follow:

RQ1. How do programme and course learning outcomes govern the selection and utilisation of digital learning media, and where does that governance break down?

RQ2. How does the integration of digital media shape learning activities, student engagement and attainment, and why does engagement vary across students?

RQ3. To what extent does digitally mediated assessment produce evidence of the stated learning outcomes, and what accounts for the residual gap?

The novelty of the study lies in the framework it develops, and the claim requires specification. TPACK explains what a lecturer must know but is silent on where intended outcomes enter that knowledge. SAMR describes how far a task has been transformed but

supplies no criterion for judging whether the transformation was warranted. Constructive alignment supplies that criterion but predates digitally constituted academic tasks and does not treat media selection as a distinct decision. The framework proposed here occupies the space between them: it makes media selection an explicit link in the alignment chain, positions student engagement as the mechanism through which digitally mediated activity becomes attainment, and closes the chain into a cycle in which assessment evidence recalibrates both the outcome statement and the media decision. Section B sets out the design, Section C presents and discusses the findings across four themes and then develops the framework, and Section D concludes.

B. RESEARCH METHOD

1. Design and Case

This study employed a qualitative instrumental single case study. Following (Stake, 1995), an intrinsic case study is undertaken because the case itself is of interest, whereas an instrumental case study examines a particular case to illuminate an issue extending beyond it; the present case is of interest because it provides an unusually clear site for examining how outcome statements govern media selection. (Dewi & Hidayah, 2019) and (Yin, 2018) specify that the design suits phenomena inseparable from context and questions of how and why, and both conditions hold, since alignment is enacted in the interaction between a course plan, a lecturer's decisions and a classroom.

The case was selected on three criteria: a documented OBE architecture, so that outcome statements existed as inspectable artefacts; outcomes requiring performances not demonstrable without digital tools, making the outcome–media link visible; and location within an Islamic Education programme. A course in educational statistics satisfied all three, since its outcomes require students to manage, analyse and interpret educational data, competencies the graduate profile attaches to the professional work of an Islamic Education teacher. The case comprises one course, one lecturer, the enrolled cohort, the governing curricular documents, the assessment instruments and the sessions observed within a single semester; it excludes other courses, governance above course level, and any claim about causal effects on achievement.

2. Site, Participants and Researcher Position

The study was conducted in the Islamic Education study programme at Institut Agama Islam Negeri (IAIN) Sorong, a state Islamic higher education institution in Sorong, Southwest Papua, where an Outcome-Based curriculum operates under the national higher education standards. The observed course, Educational Statistics, was taken by a cohort of twenty-five students in the even semester of the 2025/2026 academic year. Practical work took place in the institution's computer laboratory, where the statistical package was installed but not licensed for personal use, and the institutional learning management system carried materials, assignment briefs and rubrics. The site lies outside Indonesia's principal urban centres, which makes the infrastructural conditions reported below consequential to the analysis rather than incidental to it.

Participants were the course lecturer, who had helped revise the course outcome statements, and students drawn purposively from the cohort to represent variation in prior experience with spreadsheet and statistical software. The researcher was an outsider with no teaching, assessment or supervisory relationship to the course; objectivity was supported through a reflexive journal, a structured observation protocol, cross-checking against documents and observation, and peer review.

3. Data Generation and Analysis

Three techniques were used so that a claim resting on one could be checked against the others. Semi-structured interviews with the lecturer addressed the derivation of course outcomes, the reasoning behind media selection and the difficulties encountered, while interviews with students addressed their experience of digitally mediated tasks and the obstacles they met; interviews were conducted in Indonesian, audio-recorded with consent and transcribed verbatim, and extracts below have been translated by the authors. Non-participant observation followed a protocol recording the session objective, the tools in use, the nature of the task, the distribution of student activity and the form of feedback given; the semester comprised meetings, of which were observed across the span of the term. Document analysis covered the programme and course learning outcomes, the course plan, assignment briefs, assessment rubrics and samples of student work.

Analysis followed the interactive model of (Miles, Huberman, & Saldana, 2014) in four stages, conducted concurrently with data generation. First, transcripts and expanded observation notes were coded line by line, and the resulting descriptive codes were consolidated through constant comparison into focused codes. Second, focused codes were organised into four analytical categories derived from the research questions: outcome derivation and media selection; activities, engagement and attainment; assessment of attainment; and constraints and lecturer responses. Third, data were displayed in two matrices, one showing which evidence supported each claim and from which technique, the other tracing each course outcome to its corresponding activity and assessment task; the assessment gap reported below emerged from the second matrix rather than from any single interview. Fourth, conclusions were drawn provisionally and tested by returning to the data to search for disconfirming instances, with claims that could not survive that test qualified or withdrawn. Coding was carried out manually and documented through a coding scheme, analytical memos and successive versions of the displays.

4. Trustworthiness and Ethics

Trustworthiness was addressed against the criteria of (Lincoln & Guba, 1985). Source triangulation compared the lecturer's account of a practice with students' accounts of the same practice, and where the two diverged the divergence was treated as a finding rather than as an error to be resolved in favour of one party. Technique triangulation was applied concretely: a claim that assessment measured a given outcome was checked against the rubric operationalising it and against the tasks students were observed to perform, and retained only where all three converged; where they did not, the discrepancy is reported below. Member checking returned summarised interpretations to the lecturer, who confirmed the description of course design and assessment and suggested minor clarifications. Dependability and confirmability rest on an audit trail comprising the interview guide, observation protocol, coding scheme, memos and successive displays. The study was conducted with formal research permission from IAIN Sorong; participants gave written informed consent, are identified by code rather than name, and the data are held in password-protected storage.

C. RESULT AND DISCUSSION

Findings and interpretation are presented together, with each theme developed in three movements: the evidence and its source, its interpretation, and its relation to theory and prior research. The framework is then developed as a subsection in its own right.

1. Deriving Media Selection from Learning Outcomes

a. Findings and Evidence

The course operated a documented derivation from the graduate profile through programme outcomes to course outcomes and weekly sub-outcomes. Outcome statements used performance verbs — manage, analyse, interpret, present — rather than knowledge verbs, and the corresponding activities required students to work on educational datasets rather than to reproduce procedures on paper. The lecturer described the derivation explicitly:

“When we revised the course plan under OBE, we started from the graduate profile and asked: what should our graduates be able to do with data as Islamic Education teachers? From that question we formulated course outcomes such as ‘analyse educational data using appropriate statistical procedures’ and ‘interpret the results in the context of classroom decision-making’. Because these outcomes explicitly require analysis and interpretation, we selected SPSS and spreadsheet software as the main media. If the outcome had only said ‘understand basic statistics’, we might have used the same tools just to show formulas, but then the software would not really be doing the work the outcome asks for.” (Lecturer L1, interview, 10 May 2026).

Observation showed both the presence and the absence of this derivation within the same course. In the fifth meeting, students worked in pairs to analyse a dataset of religious education scores and attendance, running correlation and simple regression and producing a short report stating the research question, the procedure chosen, the output obtained and its implications for instructional decisions; outcome verb, digital activity and assessment task addressed the same performance. In an earlier meeting, by contrast, the lecturer used a projector and spreadsheet software to demonstrate the computation of a mean and a standard deviation while students watched without performing the procedure or interpreting results, although the corresponding outcome statement emphasised independent analysis. Document analysis produced the mapping in Table C.1.

Table C.1 Mapping of Course Learning Outcomes to Digital Media, Activities and Assessment

CLO	Outcome statement (performance verb)	Digital medium selected	Learning activity	Assessment task
CLO-1	Manage and analyse educational data using appropriate descriptive statistical procedures.	Spreadsheet software	Students enter, clean and compute descriptive statistics for a provided dataset.	Practical assignment: processed dataset with descriptive tables and graphs.
CLO-2	Interpret the results of statistical analysis in the context of classroom decision-making.	Spreadsheet software	Students write short interpretations linking statistical patterns to instructional implications.	Written report section on interpretation of descriptive results.
CLO-3	Select and apply inferential procedures appropriate to a stated educational research question, and judge their appropriateness.	Statistical software (SPSS)	Students formulate research questions, run correlation and regression, and save outputs.	Data-analysis project: output file with brief methodological description.
CLO-4	Present the findings of an educational data analysis clearly to an academic audience.	Presentation software	Students prepare and deliver a presentation summarising their analysis and interpretation.	Group presentation assessed with a rubric on clarity, accuracy and relevance.

Source: analysis of the semester course plan and assessment instruments. Outcome statements are given in summary form; the full wording appears in the course plan.

b. Interpretation

Two patterns emerge. Where the outcome verb named a performance that could not be executed without the tool, media selection was traceable to the outcome and the activity

reproduced the performance described; where the verb named an understanding, the medium reverted to a delivery function, displaying content that could equally have been displayed without it. The distinction is not one of tool quality but of derivation, since the same spreadsheet software appeared in both patterns and what differed was whether the outcome statement had specified a performance for the tool to serve. This qualifies the common claim that digital media support alignment: media do not support alignment as a property of their own, but only when the outcome statement has already specified a demonstrable performance. The causal work is done by the outcome statement, as the lecturer's own remark about "understand basic statistics" anticipates.

c. Dialogue with Theory and Prior Research

The pattern is what constructive alignment predicts: a medium serving an activity is aligned only insofar as the activity instantiates the outcome verb. Read through SAMR, the two patterns correspond to redefinition and substitution, and substitution-level use signals not a failure of technology but an outcome statement written in terms that gave the technology nothing to do. TPACK locates the required competence at the intersection of technological, pedagogical and content knowledge, and the case adds a curricular specification to that intersection, since the lecturer's decisive judgement concerned not the software but whether the outcome named a performance at all. This extends (Muzakir & Susanto, 2023) and qualifies (Tubagus et al., 2023), since expanded access is a substitution-level gain unless the outcome requires a performance that the access makes possible.

2. Digital Activities, Engagement and Attainment

a. Findings and Evidence

Across the term, digital media featured in of the scheduled meetings, and in those sessions the greater part of instructional time was given to practical work rather than exposition. In the third meeting students entered and cleaned a dataset and computed descriptive statistics; in the fifth they ran correlation and regression and interpreted the coefficients; in the eighth they designed an analysis plan on their own project data, executed it and presented the findings. Engagement, however, was not uniform. Observation showed that in sessions involving data analysis the class divided within the first few minutes into those who began processing data independently and those who waited for peer assistance or asked for step-by-step guidance, with requests concentrating on locating functions, formatting cells and interpreting error messages. Student accounts corroborated the division:

"At first I was confused about which menu to click for correlation. I kept opening the wrong window. Then my friend showed me the correct steps, and after that it felt easier." (Student S03, interview, 10 May 2026).

"I already used Excel for my previous course, so I could focus more on what the numbers meant instead of how to make the table." (Student S07, interview, 10 May 2026).

A change in orientation was also observed. In early sessions students commonly asked which procedure to apply; in later sessions several began by identifying the research question and considering whether the selected procedure was appropriate. The shift appeared across the later meetings of the semester and was reflected in student accounts:

"In the beginning I only followed the steps the lecturer showed. Later, when we got a new dataset, I first thought about what I wanted to know, and then chose the analysis." (Student S05, interview, 10 May 2026).

"I felt more confident because I could see my own results on the screen and explain them to my friends during the presentation." (Student S09, interview, 10 May 2026).

b. Interpretation

The unevenness is the analytically important finding. Students arriving with functional digital literacy moved quickly into the analytical work the outcome described, while others spent much of each session on operational difficulty and reached the analytical task late or not at all. Both groups were present in the same activity but were not performing the same task: for the first the tool afforded the performance, for the second it consumed the resources the performance required, as the two accounts quoted express, one describing attention absorbed by the interface and the other attention released for meaning. The later change is best characterised as a shift in orientation toward unfamiliar analytical tasks rather than a measured improvement in achievement, and the confidence reported is attributed to visible results and to the act of explaining them, not to the technology as such.

c. Dialogue with Theory and Prior Research

Zone of proximal development explains why mediated activity produces development only when the task sits within reach given available support, and the students who stalled were working outside that zone, the mediating tool having become the obstacle rather than the scaffold. Experiential cycle explains why the analytical gain depends on reaching conceptualization (Pamungkas, Widiastuti, & ..., 2019), and (Sweller, 1988) cognitive load theory supplies the mechanism directly, since operational demands imposed extraneous load that displaced the germane load on which schema construction depends. (Bandura, 1997) account of self-efficacy explains why efficacy rose fastest among students who completed the analytical cycle, mastery experience being its strongest source, while (Fredricks, Blumenfeld, & Paris, 2004) clarify why an undifferentiated report would mislead: behavioural engagement was high across the cohort, cognitive engagement was not.

Technology also carries costs, including cognitive overload and attentional displacement toward the interface, and (Crompton, DeBrabander, Heasman, Milton, & Sasson, 2021) caution that expanded provision does not translate automatically into learning gains. The case confirms (Tubagus et al., 2023) at the level of opportunity while showing that opportunity distributes unequally within a single classroom, and indicates why aggregate reporting of engagement, as in (Bhardwaj, Zhang, Tan, & Pandey, 2025), can mislead, since the mean conceals a bifurcation that determines who attains the outcome. (Asiyah et al., 2026) reach a compatible conclusion in Qur’anic learning, treating engagement as something co-created rather than delivered. (Pekrun, 2024) offers a further reason for reading engagement at this level of detail, since the emotions that accompany a task shape whether effort is sustained once the task stops going smoothly.

3. Assessment and the Residual Evidence Gap

a. Findings and Evidence

Assessment comprised practical assignments (20 per cent, weeks three and four, measuring CLO-1 and CLO-2), quizzes (15 per cent, week six, CLO-1), data-analysis projects (30 per cent, weeks seven to ten, CLO-2 and CLO-3), group presentations (15 per cent, week twelve, CLO-4) and a final examination (20 per cent, CLO-1 to CLO-3). Each instrument was criterion-referenced, with indicators and rubrics communicated in advance. Formative assessment ran alongside in the weeks preceding the project, through short quizzes and draft analysis tasks; feedback was returned before the following session through written comments and class discussion, and students then revised the draft or completed a similar task with a new dataset. The rubric for the data-analysis project, reproduced in Table C.2, illustrates the criteria applied.

Table C.2 Rubric for the Data-Analysis Project (CLO-2 and CLO-3)

Criterion	Very good (4)	Good (3)	Sufficient (2)	Needs improvement (1)
Selection of procedure	Procedure matches the research question and data type; justification is clear.	Procedure is appropriate; justification is mostly clear.	Procedure is partially appropriate; justification is vague.	Procedure is inappropriate or not justified.
Accuracy of data processing	Data are entered and processed correctly; no technical errors in output.	Minor technical errors that do not affect main conclusions.	Several technical errors affecting some results.	Major errors; output cannot be interpreted reliably.
Interpretation of results	Interpretation is accurate, contextualised and linked to educational implications.	Interpretation is mostly accurate and somewhat contextualised.	Interpretation is superficial or weakly linked to context.	Interpretation is incorrect or absent.
Presentation of findings	Findings are presented clearly, logically and with appropriate visual support.	Findings are clear with minor organisational issues.	Findings are understandable but poorly organised or visualised.	Findings are unclear or difficult to follow.

Source: course assessment instruments.

Cross-referencing the instruments against the outcome statements revealed that the correspondence was partial. The judgemental element of CLO-3, which requires students to decide whether a procedure is appropriate to the educational question at hand, was not adequately represented; the rubric assessed computational accuracy and clarity of presentation but not methodological judgement, and the outcome was linked only indirectly to the final examination. The lecturer articulated the difficulty:

"It is relatively easy to assess whether students can run a procedure correctly, but more difficult to design an instrument that captures their judgement about whether that procedure is appropriate for a particular educational problem." (Lecturer L1, interview, 10 May 2026).

b. Interpretation

The gap is not a failure of effort. The instruments that aligned well measured performances with visible products: a dataset processed, an output interpreted, a finding presented. Reading Table C.2 against the outcome statements makes the boundary visible, since its four criteria each produce an inspectable artefact, whereas methodological judgement is exercised before any artefact exists, in deciding whether a question warrants a given procedure at all. Digitisation neither created this difficulty nor resolved it: it altered the richness of the tasks students performed while leaving untouched the instruments through which those performances were judged.

c. Dialogue with Theory and Prior Research

Authentic assessment, in the formulation of (Gulikers, Bastiaens, & Kirschner, 2004), requires correspondence between the assessment task and the professional situation across task, context, result and criteria; judged so, the well-aligned instruments were authentic in task and result but weaker in social context, since the collaborative judgement characteristic of educational evaluation was assessed individually. Following (Black & Wiliam, 1998), formative assessment is effective where feedback identifies the gap between current and intended performance and supplies means to close it, and the revision cycle met that condition for computational accuracy but not for judgement. The finding confirms and specifies (Setiono et al., 2023), since the difficulty concentrates on outcomes whose evidence resists documentary capture and persists after digitisation because digitisation addresses

the task rather than the instrument. (Ali, 2024) argues that OBE assessment requires frameworks integrating direct measurement with technology rather than transferring conventional instruments into digital format, and the case supports that argument empirically. Two further lines of work indicate where the remedy might lie. (Tempelaar, Rienties, & Giesbers, 2024) show that digital environments can make the evidence for formative feedback continuously available rather than episodic, and (Rodriguez Rincon, Munarriz, & Magrenan Ruiz, 2024) show that continuous assessment produces meaningful learning only when it is built around self-reflection rather than accumulated marks. Both point away from transferring existing instruments into digital form and toward redesigning what the instrument is asked to capture.

4. Constraints, Responses and Their Implications

a. Findings and Evidence

Five constraints recurred: uneven initial digital literacy, so that students with limited literacy spent more time on operational tasks than on interpretation; a practical portion of each session too short for some students to carry an analysis from data entry to interpretation; intermittent internet disruption and a limited number of laboratory computers, which delayed submission and required device sharing; unequal participation, with a small group dominating discussion; and constrained software access, since the statistical package was installed only in the laboratory and not licensed for personal devices. The lecturer responded with short introductory tutorials, by pairing students of differing experience to encourage peer scaffolding, by relocating procedural demonstration to pre-class materials, and by scheduling additional laboratory slots, but described the residual limits directly:

"I know that not all students have the same starting point. That is why I try to combine short demonstrations, peer work and additional practice time. But the limited laboratory capacity and the fact that SPSS is not available on all personal devices remain a real constraint." (Lecturer L1, interview, 10 May 2026).

b. Interpretation and Implications

These constraints are not incidental obstacles to an otherwise sound design; they determine whether the alignment chain closes at all, and each operates on a specific link. Uneven prior literacy determines whether a digitally mediated activity instantiates the outcome verb for a given student; limited practice time determines whether the experiential cycle reaches conceptualisation; and licensing determines whether the task can be attempted outside class, which is consequential because it restricts the repeated mastery experience on which the efficacy gains reported above depend, so that an administrative decision propagates into an attainment effect. The lecturer's responses show the limits of pedagogical judgement: peer scaffolding and the relocation of demonstration operate on links the lecturer controls, but neither compensates for a constraint located outside the classroom. Differentiated entry support is therefore a condition of alignment rather than a pastoral addition, course sequencing should establish digital competence rather than presuppose it, and professional development that raises tool proficiency without addressing outcome-driven media selection will not produce alignment, which is a particular instance of the gap between reform intention and classroom translation that (Abdusshomad, Kurnianto, & Kalbuana, 2026) document in Islamic Religious Education across Indonesia and Malaysia.

5. The OBE–Digital Learning Media Integration Framework

The findings support a framework that differs from the linear sequence proposed in earlier accounts of this integration. Figure C.1 presents it.

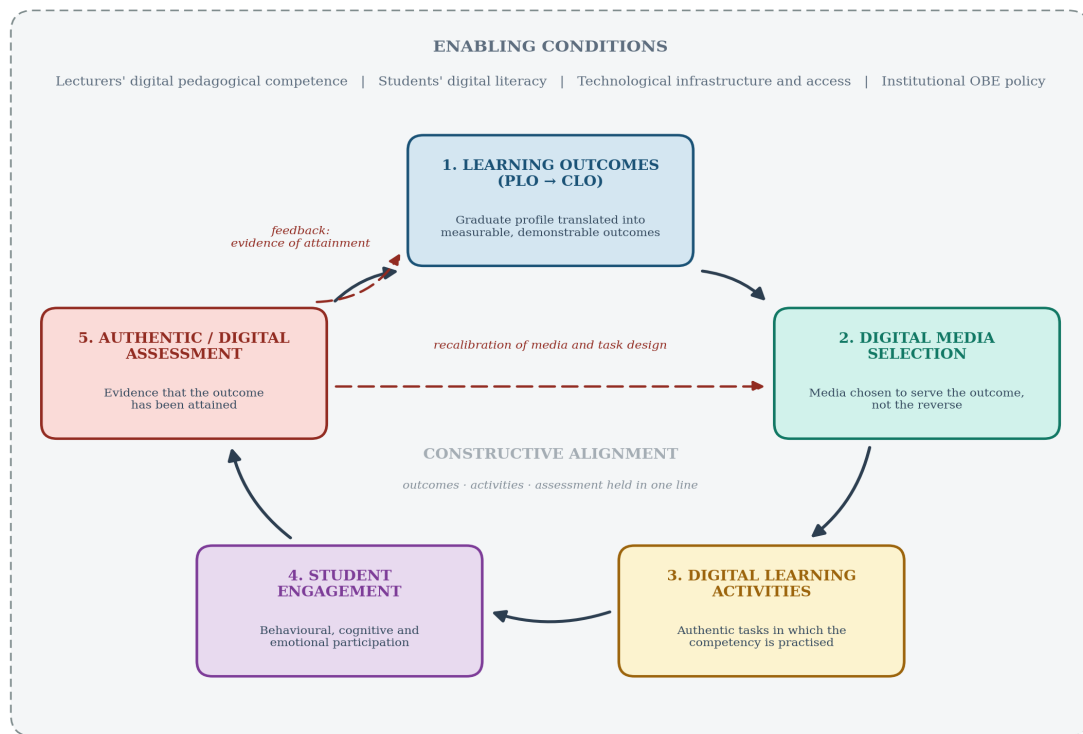


Figure C.1 The OBE-Digital Learning Media Integration Framework

Source: authors' analysis

Learning outcomes are the governing element: programme outcomes are decomposed into course outcomes stated as demonstrable performances, and the outcome verb, not institutional enthusiasm for technology, determines whether digital media have work to do. Media selection is treated as an explicit decision rather than an implementation detail, the criterion being whether the medium enables the performance the outcome names; this is the framework's principal addition to constructive alignment, which does not treat selection as a distinct link. Digital learning activities must instantiate the outcome verb rather than merely occur in a digital environment, as the contrast between the two observed sessions illustrates. Student engagement is the mechanism by which activity becomes attainment, its inclusion warranted by the finding that identical activities produced different tasks for differently prepared students. Assessment produces the evidence of attainment, and its dual feedback function is the structural difference from the linear sequence: evidence returns to the outcome statement, where it may reveal that an outcome cannot be evidenced as written, as the judgemental element of CLO-3 shows, and to media selection, where it may reveal that the medium did not afford the performance. Enabling conditions lecturers' digital pedagogical competence, students' digital literacy, infrastructure and access, and institutional OBE policy surround the cycle because they condition every link simultaneously, as the licensing constraint demonstrates.

The framework complements TPACK and SAMR rather than replacing them. TPACK characterises the knowledge a lecturer requires but is silent on curriculum, so it cannot say which technology a given outcome demands; the framework supplies that determination and locates TPACK among the enabling conditions. SAMR describes the depth of task transformation but, as commonly applied, treats greater transformation as better; the framework supplies the missing criterion, since transformation is warranted when the

outcome verb requires it and gratuitous when it does not. Three limitations should be stated: the framework was developed from a case whose outcomes were readily operationalised as observable performances, so outcomes concerning disposition may not decompose in the same way; it describes conditions for alignment rather than predicting magnitudes of gain; and its enabling conditions come from a single setting. Studies of OBE implementation outside Islamic Education suggest that the cycle described here is not peculiar to this setting: (Shi et al., 2025) report that pairing OBE with problem-based learning improves clinical performance only where assessment follows the same logic, (Wabiser & Mawene, 2024) build continuous improvement into an OBE engineering programme through an explicit feedback loop, and (Zhang, Li, Ahrentzen, & Zhang, 2019) find that student satisfaction with OBE teaching depends on the coherence students perceive between what is taught and what is assessed. Each supports the claim that the return of assessment evidence, rather than the initial design, is what keeps the arrangement working.

D. CONCLUSION

This study examined how outcome statements govern the integration of digital learning media in an Islamic Education study programme, and reaches a conclusion more qualified than the field commonly asserts. Digital media do not support attainment as a property of their own; they support it when the outcome statement specifies a demonstrable performance from which media selection can be derived, and revert to a delivery function when it does not. Governance by the outcome statement was traceable where outcome verbs named performances and broke down where they named understandings, both patterns occurring within the same course. Digitally mediated activities sustained engagement but distributed it unevenly, since identical activities constituted different tasks for students with different prior digital literacy, and the observed change was one of orientation rather than a measured gain in achievement. Assessment produced adequate evidence for outcomes with visible products and left a residual gap for the outcome requiring methodological judgement.

The study is bounded in four respects. It examines a single course taught by a single lecturer within one study programme over one semester, so it describes how alignment was enacted in that setting rather than how it is generally enacted. Its qualitative design supports claims about mechanism and meaning but not about magnitude or causal effect. The case was selected because its outcomes could be operationalised as observable performances, which makes it well suited to examining alignment and correspondingly less representative of courses in the Islamic sciences whose outcomes are less tractable. Whether the competencies demonstrated transfer beyond the course therefore lies outside its evidence.

Theoretically, the study contributes a framework that makes media selection an explicit link in the constructive alignment chain and renders that chain cyclical through the return of assessment evidence to both the outcome statement and the media decision, thereby connecting three literatures that have developed separately. It further shows that engagement functions as a mediating rather than a resultant component, which is why aggregate reports of engagement can conceal the bifurcation that determines attainment.

For practice, the framework yields a usable decision rule: establish what performance the outcome names before selecting a medium, and treat a medium that adds no performance as a delivery choice rather than as outcome-relevant integration. It also indicates that differentiated entry support is a condition of alignment rather than an optional accommodation, and that assessment instruments require attention precisely where outcomes resist documentary capture.

For policy, the finding that enabling conditions are determinative carries direct implications. Software licensing and laboratory capacity are conditions of attainment rather

than administrative details, since they govern whether students can accumulate the practice on which competence and confidence depend. Institutional evaluation that inspects curricular documents alone cannot detect the substitution pattern identified here, because that pattern is fully compliant on paper and visible only in the classroom.

Further research should test the framework in courses within the Islamic sciences whose outcomes concern interpretation, judgement or disposition, where its applicability remains genuinely uncertain. Mixed-method and longitudinal designs would allow the magnitude of contribution and the durability of competence to be estimated, and the differential engagement identified here warrants study in its own right, since the conditions under which digitally mediated activity narrows rather than widens the gap between differently prepared students remain poorly understood.

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