

Liberal Journal of Language & Literature Review

Print ISSN: 3006-5887

Online ISSN: 3006-5895

<https://llrjournal.com/index.php/11>

**MEASURING THE EXTENT OF SOCIAL MEDIA INTEGRATION
IN COLLEGE TEACHING: A STRUCTURED OBSERVATIONAL
STUDY ACROSS TWO PRIVATE COLLEGES IN KARACHI**



Komal Malik Shivji¹, Dr. Meher Rizvi^{*2}

¹Research Associate, Aga Khan University Institute for Educational Development, Karachi, Pakistan

*^{*2}Associate Professor, Aga Khan University Institute for Educational Development, Karachi, Pakistan*

*¹komal.malik25@alumni.aku.edu, ^{*2}meher.rizvi@aku.edu*

Abstract

While teachers' self-reported beliefs about social media in education have been studied qualitatively, comparatively little research has objectively measured the extent to which those beliefs translate into observable classroom practice. This study addressed that gap by developing and administering a structured classroom observation tool to quantify the level of social media integration among ten teachers (five per college) across two private colleges in Karachi, Pakistan. The 22-item tool, derived from prior qualitative findings and organized around six dimensions — sharing and access to information, engagement, communication, transparency and reputation, presence, and relationship — was content-validated by five experts using content validity indices and piloted with three teachers at a third college. Each teacher was observed twice; the two observation scores per item were combined using a five-level integration criterion ranging from No Integration to Optimal Integration. Internal consistency was acceptable to strong for four of the six dimensions (Cronbach's $\alpha = .74-.82$) and below the conventional threshold for two dimensions (Transparency and Reputation, $\alpha = .49$; Presence, $\alpha = .77$ overall but $.33$ at College 2), with an overall scale reliability of $\alpha = .818$ across 22 items. Descriptive analysis of frequencies and percentages revealed markedly uneven integration across dimensions: practices were most consistently observed for Sharing and Access to Information, Engagement, and Communication, while Presence and, especially, Relationship-building practices were rare or entirely absent, particularly at College 1. College 2 teachers showed consistently higher observed integration in four of six dimensions, while College 1 showed marginally higher Presence-related practice. No inferential statistical tests were computed; comparisons are descriptive. Findings suggest that college-level social media integration in this context is concentrated in informational and communicative functions rather than relational or identity-oriented ones, with implications for targeted professional development and future comparative research using formal significance testing.

Keywords: Classroom observation; social media integration; content validity; reliability; descriptive statistics; higher secondary education; Pakistan

Introduction

Background

Teachers' beliefs about social media are frequently studied through self-report — interviews, surveys, and focus groups which capture what teachers say they believe and, at times, what they say they do. Self-reported practice, however, is not the same as observed practice, and the correspondence between the two is rarely tested directly within the same study (Ertmer & Ottenbreit-Leftwich, 2010). This is a meaningful gap in the context of Pakistani college-level education, where social media use is widespread among students (DataReportal, 2024) but its purposeful, pedagogical integration by teachers remains inconsistent and poorly documented through direct classroom measurement (Khan & Raza, 2021).

Research Problem and Gap

Existing research on social media in education in Pakistan and internationally has relied predominantly on self-report instruments — interviews or Likert-type surveys — to characterize teachers' integration practices (e.g., Muyingo, 2021). Structured, validated observation instruments capable of objectively quantifying the extent of classroom-level social media integration, dimension by dimension, are comparatively rare, particularly in the Pakistani college context. Without such measurement, claims about “how” teachers integrate social media rest on what teachers report rather than what can be independently verified.

Purpose and Research Question

This study addressed the second research question of a larger mixed-methods thesis, answered quantitatively: How do teachers connect with social media at the classroom level? To answer it, the study developed a structured classroom observation instrument, grounded in prior qualitative findings, and used it to quantify the extent and distribution of social media integration practices across six conceptual dimensions, ten teachers, and two private colleges in Karachi.

Literature Review

From Belief to Practice: The Measurement Gap

A substantial literature documents teachers' beliefs about educational technology (Tondeur et al., 2017) and the institutional conditions — leadership support, access to resources, and continuous professional development — that predict adoption (Olaniyan & Uzorka, 2024). Comparatively fewer studies have measured technology-related classroom practice directly through structured observation rather than self-report. Where observation-adjacent designs have been used, they have tended to focus on specific tools or platforms in controlled or quasi-experimental settings — for example, Tang and Hew (2022) used a quasi-experimental design to measure the behavioral, emotional, and cognitive effects of mobile instant messaging on student engagement, while Chawinga (2017) evaluated Twitter and blog integration in two undergraduate courses in Malawi through course-level outcomes rather than systematic observation of teaching practice itself.

Instrument Development and Validation in Educational Research

Content validity is a foundational concern when developing a new observational or survey instrument for educational research, typically established through expert panel review and content validity indices (Zamanzadeh et al., 2015). Reliability, most commonly assessed via Cronbach's alpha for multi-item scales, provides a complementary check on internal consistency within each conceptual dimension. Prior instrument-development work in adjacent educational contexts in Pakistan — for example, studies examining barriers to blended learning adoption at a private university (Rizvi et al., 2017) — underscores both the feasibility and the necessity of locally validated measurement tools rather than the uncritical import of instruments developed in other national or institutional contexts.

Institutional and Contextual Variation in Technology Integration

Comparative studies consistently find that technology integration varies by institutional context resource availability, professional development access, and organizational culture (Bennett et al., 2020; Al-Khalidi & Ghoneim, 2023). Trust et al. (2020) similarly find that teachers' professional learning networks, often themselves social-media mediated, vary in depth and reach depending on institutional and personal factors. This literature motivates the present study's explicit cross-college comparison of observed integration levels, while cautioning against causal interpretation absent formal statistical testing (Zaman et al., 2026).

Theoretical and Conceptual Framework

As in the companion qualitative paper, this study is grounded in connectivism (Siemens, 2005), which frames learning as an emergent property of networked connections among people, information, and technology. The observation instrument operationalizes this framework through six dimensions adapted from Kietzmann et al.'s (2011) social media honeycomb model: sharing and access to information, engagement, communication, transparency and reputation, presence, and relationship. Unlike the companion paper, which examines these dimensions as they are subjectively experienced and described by teachers and students, this paper operationalizes the same six dimensions as directly observable, countable classroom behaviors, enabling a quantitative account of the same underlying constructs.

Methodology

Research Design

This study reports the quantitative phase of a mixed-methods sequential exploratory design (Creswell & Plano Clark, 2011). Consistent with a developmental sequential approach, the quantitative instrument used here was constructed directly from patterns identified in a prior qualitative phase (teacher interviews), strengthening the instrument's contextual and content validity (Creswell & Creswell, 2018; Merriam, 2009).

Participants and Sampling

The observation sample comprised the same ten teachers (five per college) who participated in the qualitative interview phase of the parent study, purposively retained to permit direct comparison between reported belief

Liberal Journal of Language & Literature Review

Print ISSN: 3006-5887

Online ISSN: 3006-5895

and observed practice within the same individuals. All ten teachers were observed, yielding a full-sample census of the qualitative-phase teacher cohort rather than an independently drawn quantitative sample.

Instrument

A structured Classroom Observation Tool was developed, comprising seven sections (including a demographic section) and 22 substantive items distributed across the six conceptual dimensions, as summarized in Table 1.

Table 1

Structure of the Classroom Observation Tool

Dimension	Number of Items
Sharing and Access to Information	6
Engagement	3
Communication	3
Transparency and Reputation	5
Presence	2
Relationship	3
Total	22

Note. Item structure adapted from thesis Table 3.

Validity and Reliability

Because the tool was derived directly from qualitative findings, its content validity was strengthened at the design stage. It was further validated by five subject-matter experts using content validity indices (Zamanzadeh et al., 2015), who rated each item for clarity, grammar, wording, and relevance on a 4-point scale (4 = Highly Relevant to 1 = Not Relevant); items requiring direct access to teachers' personal social media accounts, or not directly observable in a classroom setting, were removed following expert review, and no retained item scored below 2. The revised tool was piloted with three teachers at a third college to assess time demands, clarity, and feasibility, which the pilot confirmed were acceptable.

Each of the ten teachers was observed on two separate occasions. For each item, the two observation scores were summed and classified into one of five integration levels using the criteria in Table 2.

Table 2

Criteria for Determining Level of Integration

Criteria (Two Observation Scores)	Level of Integration
Both 1s	No Integration (1)
One 1 and the other 2 or 3	Limited Integration (2)
Both 2s	Moderate Integration (3)
One 2 and one 3	Effective Integration (4)
Both 3s	Optimal Integration (5)

Internal consistency reliability, computed via Cronbach's alpha, is reported by dimension and overall in Table 3.

Table 3

Reliability by Dimension and Overall

Dimension	Items	Cronbach's α (Overall)	Assessment
Sharing and Access to Information	6	.784	Acceptable
Engagement	3	.737	Acceptable

Liberal Journal of Language & Literature Review

Print ISSN: 3006-5887

Online ISSN: 3006-5895

Communication	3	.678	Satisfactory
Transparency and Reputation	5	.492	Below threshold
Presence	2	.770	Acceptable
Relationship	3	.820	Strong
Overall Scale	22	.818	Strong

Note. No items were deleted from any dimension, since all were judged conceptually essential even where alpha fell below the conventional .70 threshold (Transparency and Reputation). Values reproduced from thesis Table 5.

Data Collection Procedure

Observations were scheduled around teacher and institutional availability across the two colleges; all ten teachers were observed twice, following formal permission from each college and signed teacher consent.

Data Analysis

Data were entered and cleaned in IBM SPSS Statistics (Version 23). For each item, the two observation scores per teacher were summed and classified using the integration-level criteria in Table 2. Frequencies and percentages were computed for each item, overall and separately by college, and Cronbach's alpha was computed for each of the six dimensions and for the scale overall. Consistent with the descriptive nature of the observation data (small cell counts, $N = 10$ teachers per comparison), no inferential statistical tests (e.g., chi-square, t-tests) were computed to test the statistical significance of between-college differences; all comparisons reported below are descriptive.

Ethical Considerations

Formal permissions were obtained from college principals, supported by supervisor and Ethical Review Committee letters. Written consent was obtained from all observed teachers prior to data collection, and data were stored securely on a password-protected device accessible only to the researcher.

Results

Overall Pattern of Integration Across Dimensions

Across all ten teachers, integration was distributed unevenly across the six dimensions. Practices associated with Sharing and Access to Information, Engagement, and Communication showed the broadest observed range — spanning from No Integration to Optimal Integration across items and teachers — indicating that these informational and communicative functions were the most consistently, if variably, practiced. By contrast, Presence-related practices were rare across both colleges, with the majority of observations falling in the Limited or No Integration categories for both items in that dimension; the two Presence items showed particularly divergent reliability by college ($\alpha = .889$ at College 1 versus $\alpha = .333$ at College 2), suggesting inconsistent item interpretation or practice at College 2 specifically. Relationship-building practices were the least frequently observed dimension overall, with the great majority of teachers, especially at College 1, falling in the Limited or No Integration categories.

Cross-College Comparison

Table 4 summarizes the proportion of teachers at each college observed at Optimal or Effective Integration levels — the two highest categories — for each dimension, following the parent thesis's focus on higher-range practice as the more informative comparison point given the small sample.

Table 4

Comparative Overview of Higher-Range (Optimal + Effective) Integration by College

Dimension	College 1	College 2
Sharing and Access to Information	32%	40%
Engagement	20%	36%
Communication	12%	16%
Transparency and Reputation	28%	32%

Presence	4%	0%
Relationship	0%	4%

Note. Values are the summed percentage of Optimal + Effective Integration ratings for the dimension, reproduced and recombined from thesis Table 14. Cell counts are small ($n = 5$ teachers per college); percentages should be interpreted descriptively, not inferentially.

College 2 teachers showed higher observed higher-range integration than College 1 teachers in four of six dimensions — Sharing and Access to Information, Engagement, Communication, and Transparency and Reputation — while College 1 teachers showed marginally higher Presence-related practice (4% versus 0%) and College 2 showed marginally higher Relationship-related practice (4% versus 0%), though both dimensions remained close to floor at both colleges. Item-level results within Transparency and Reputation showed a more mixed pattern: College 2 teachers more frequently modeled source-crediting and respectful-commenting norms (items TR1–TR2), while College 1 teachers more frequently used deliberately misleading posts as a critical-analysis exercise for students (item TR4), suggesting that the two colleges' relative strength in this dimension may reflect different pedagogical emphases rather than a uniform integration advantage for either institution.

Item-Level Highlights Within Engagement

Within the Engagement dimension, digital content-creation tasks (short videos or posters) were integrated at moderate-or-higher levels by 80% of College 2 teachers versus 60% of College 1 teachers, and student presentation of digital content reached moderate-or-higher integration for 60% of College 2 teachers versus 40% of College 1 teachers. Meme- or social-post-based activities showed the widest gap: 60% of College 2 teachers integrated such activities compared with 40% at College 1, with the remaining College 1 teachers using them minimally or not at all.

Discussion

The overall pattern — stronger, more consistent integration in informational and communicative dimensions than in relational or presence-oriented dimensions — is consistent with the companion qualitative paper's finding that teachers more readily embrace social media as an instructional and communicative tool than as a vehicle for cultivating an ongoing digital relationship or public teaching identity, which several teachers in the qualitative interviews associated with professional risk. Read alongside Khan (2024), who identifies professional-boundary maintenance as a specific factor shaping teacher–student digital communication and engagement, the near-absence of observed Relationship-dimension practice at both colleges — and especially at College 1 — suggests that boundary concerns identified qualitatively are not merely rhetorical but are reflected in what teachers are actually willing to do in observable practice.

The cross-college gap favoring College 2 in four of six dimensions is broadly consistent with the institutional-factors literature: Bennett et al. (2020) and Al-Khalidi and Ghoneim (2023) both identify resource availability and professional development access as key correlates of technology integration, and College 2's more extensive professional development schedule and international networking opportunities, as documented in the parent thesis, offer a plausible — though not statistically tested — explanation for its generally higher observed integration. This interpretation should be treated as hypothesis-generating rather than confirmatory, since the present design cannot separate institutional resourcing from other uncontrolled differences between the two colleges (e.g., unmeasured teacher-level factors), and because, with five teachers per college, the study lacks the statistical power for formal significance testing in any case.

The comparatively low reliability of the Transparency and Reputation dimension ($\alpha = .492$ overall) and the sharp divergence in Presence-dimension reliability between colleges ($\alpha = .889$ at College 1 versus $.333$ at College 2) both warrant caution in interpreting those two dimensions' scores as internally coherent constructs in their current form, notwithstanding their retention on conceptual-relevance grounds following expert review (Zamanzadeh et al., 2015). This is consistent with broader instrument-development literature suggesting that even content-valid items can behave inconsistently across different institutional contexts (Rizvi et al., 2017), and points toward a need for dimension-specific instrument refinement in future applications.

Theoretically, these findings extend Kietzmann et al.'s (2011) honeycomb dimensions from a self-report to an observationally grounded measurement context, showing that the same six-dimension structure

can support not only interview-based thematic analysis (as in the companion paper) but also a quantifiable, replicable observation protocol — a methodological contribution distinct from, and complementary to, the qualitative paper's theoretical contribution.

Conclusion

This study quantified the extent of social media integration in teaching practice across ten teachers in two private Karachi colleges using a purpose-built, content-validated classroom observation tool. Integration was found to be substantially uneven across the six conceptual dimensions studied, concentrated in informational and communicative functions and comparatively rare in relational and presence-oriented functions, with College 2 showing generally higher observed integration than College 1 in most dimensions. These findings provide an empirical, observation-based counterpart to self-reported teacher belief, directly addressing a measurement gap in the literature on social media integration in education.

Implications

For instrument development, the observation tool developed here offers a replicable, content-validated template for quantifying classroom-level social media integration in comparable educational contexts, though the Transparency and Reputation and Presence dimensions would benefit from further item refinement given their weaker reliability. For institutional practice, the pronounced gap in Relationship- and Presence-dimension integration at both colleges suggests that professional development efforts might usefully target these specific dimensions, since teachers appear substantially more comfortable using social media as an informational or communicative channel than as a relational or identity-forward one. For research practice more broadly, the study demonstrates the value of pairing structured observation with qualitative interviewing within the same mixed-methods design, enabling direct, if here still descriptive, comparison between what teachers report believing and what can be independently observed.

Limitations

This study has several limitations. The observation sample was small ($N = 10$ teachers, five per college), which precluded inferential statistical testing of between-college or between-dimension differences; all comparisons reported here are descriptive and should not be read as evidence of statistically significant group differences. Two observations per teacher, while feasible within the study's resource and time constraints, limits the stability of item-level classifications, particularly for dimensions with few items (e.g., the two-item Presence dimension). The Transparency and Reputation dimension showed reliability below the conventional .70 threshold overall, and the Presence dimension showed markedly unstable reliability at College 2 specifically, both of which limit confidence in those two dimensions' scores as internally coherent measures in their current form. Finally, because the observed teachers were the same individuals who participated in the qualitative interviews, findings cannot be generalized beyond this specific, non-randomly selected group of ten teachers at two private colleges.

Recommendations for Future Research

Future research should apply this observation tool, or a refined version with strengthened Transparency and Reputation and Presence items, to larger teacher samples across multiple colleges to permit formal inferential testing (e.g., chi-square tests of association between college and integration level, or ordinal regression) of the descriptive patterns identified here. Future studies should also formally test the relationship, only described qualitatively and descriptively in this research program, between teachers' self-reported beliefs and their observed integration levels — for example, using a quantified belief scale correlated against observation-derived integration scores. Extending data collection to public-sector colleges, as recommended in the companion qualitative paper, would additionally allow researchers to test whether the institutional-resourcing explanation proposed here for the College 1 versus College 2 gap holds across a wider range of institutional types and resource levels.

References

- Al-Khalidi, A., & Ghoneim, A. (2023). Teachers' digital competence and social media use in higher education: Challenges and opportunities. *Education and Information Technologies*, 28(7), 9119–9136. <https://doi.org/10.1007/s10639-023-11708-2>
- Anderson, T. (2019). Challenges and opportunities for use of social media in higher education. *Journal of Learning for Development*, 6(1). <https://jl4d.org/index.php/ejl4d/article/view/327>

- Bennett, S., Bishop, A., Dalgarno, B., Waycott, J., & Kennedy, G. (2020). Implementing Web 2.0 technologies in higher education: A collective case study. *Computers & Education*, 144, 103701. <https://doi.org/10.1016/j.compedu.2019.103701>
- Chawinga, W. D. (2017). Taking social media to a university classroom: Teaching and learning using Twitter and blogs. *International Journal of Educational Technology in Higher Education*, 14(3). <https://doi.org/10.1186/s41239-017-0041-6>
- Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). SAGE Publications, Inc. <https://doi.org/10.4135/9781506335193>
- DataReportal. (2024). Digital 2024: Global overview report. <https://datareportal.com/reports/digital-2024-global-overview-report>
- Ertmer, P. A., & Ottenbreit-Leftwich, A. T. (2010). Teacher technology changes: How knowledge, confidence, beliefs, and culture intersect. *Journal of Research on Technology in Education*, 42(3), 255–284. <https://doi.org/10.1080/15391523.2010.10782551>
- Khan, M. A., & Raza, S. A. (2021). Social media usage and higher education: An analysis of students' learning behavior in Pakistan. *Education and Information Technologies*, 26(5), 4905–4921. <https://doi.org/10.1007/s10639-021-10493-1>
- Khan, Y. (2024). The digital divide in Pakistan: Access to technology, infrastructure limitations and educational implications. *ASSA Journal*, 36, Article 241. <https://assajournal.com/index.php/36/article/view/241>
- Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons*, 54(3), 241–251. <https://doi.org/10.1016/j.bushor.2011.01.005>
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (3rd ed.). Jossey-Bass/Wiley.
- Muyingo, P. (2021). Exploring students' perspectives on the use of social media platforms for collaborative learning in Turkey. *International Journal of Emerging Technologies in Learning (iJET)*, 16(3), 120–132. <https://doi.org/10.3991/ijet.v16i03.19081>
- Olaniyan, A. O., & Uzorka, A. (2024). Leadership's role in facilitating faculty professional development for technology integration. *International Journal of Technology in Education and Science*, 8(3), 470–480. <https://doi.org/10.46328/ijtes.563>
- Rizvi, N. F., Baig, L. A., & colleagues. (2017). Barriers in adopting blended learning in a private university of Pakistan: A case study. *Pakistan Journal of Medical Sciences*, 33(5), 1182–1186. <https://pmc.ncbi.nlm.nih.gov/articles/PMC5427185/>
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3–10. https://www.itdl.org/Journal/Jan_05/article01.htm
- Tang, Y., & Hew, K. F. (2022). Effects of using mobile instant messaging on student behavioral, emotional, and cognitive engagement: A quasi-experimental study. *International Journal of Educational Technology in Higher Education*, 19(3). <https://doi.org/10.1186/s41239-021-00306-6>
- Tondeur, J., van Braak, J., Ertmer, P. A., & Ottenbreit-Leftwich, A. (2017). Understanding the relationship between teachers' pedagogical beliefs and technology use in education: A systematic review of qualitative evidence. *Educational Technology Research and Development*, 65(3), 555–575. <https://doi.org/10.1007/s11423-016-9481-2>
- Trust, T., Krutka, D. G., & Carpenter, J. P. (2020). Teacher professional learning networks (PLNs): Personal learning in a connected world. *Journal of Digital Learning in Teacher Education*, 36(3), 146–158. <https://doi.org/10.1080/21532974.2020.1724892>
- Zamanzadeh, V., Ghahramanian, A., Rassouli, M., Abbaszadeh, A., Alavi-Majd, H., & Nikanfar, A.-R. (2015). Design and implementation content validity study: Development of an instrument for measuring patient-centered communication. *Journal of Caring Sciences*, 4(2), 165–178. <https://doi.org/10.15171/jcs.2015.017>

Liberal Journal of Language & Literature Review

Print ISSN: 3006-5887

Online ISSN: 3006-5895

Zaman, M., Qadri, F. Y., & Khan, I. (2026). Unveiling ESL undergraduate students' affective, cognitive, and behavioral attitudes toward teacher–student conferencing integrated with written feedback. *Liberal Journal of Language & Literature Review*, 4(2). <https://doi.org/10.5281/zenodo.20364285>