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Strengthening School Financial Management Capacity through Participatory Training for Administrative Staff in Underfunded Secondary Schools

Hanafiah Hanafiah[1], Syahril Hasan[2], Dodi Sukmayadi[3], Hajar Mukaromah[4], Yeny Rokhilawati[5]

[1] *Universitas Samudra, hanafiahfkip@unsam.ac.id*
[2] *Universitas Balikpapan, syahrilhasan@uniba-bpn.ac.id*
[3] *Universitas Terbuka, dsukmayadi999@gmail.com*
[4] *IAI An-Nawawi Purworejo, hajarmukaromah90@gmail.com*
[5] *Universitas Islam Ibrahimy Banyuwangi, Yeniwati3103@gmail.com*

ABSTRACT

Underfunded secondary schools in Indonesia rely heavily on limited BOS (School Operational Assistance) funds, yet administrative staff often lack adequate financial management capacity, threatening transparency and accountability. Participatory training offers a promising, cost-efficient capacity-building approach. This study examines the effect of a participatory training program on financial management knowledge, self-efficacy, and report accuracy among administrative staff in underfunded secondary schools, while also exploring participants' subjective experiences. Methods: A mixed-method explanatory sequential design was employed, beginning with a one-group pretest-posttest quantitative phase (n=40 administrative staff from ten underfunded secondary schools) followed by qualitative semi-structured interviews with 15 purposively selected participants. The three-day participatory training incorporated simulations, case studies, role-play, and group discussions. Instruments included a knowledge test (α=0.85), a financial self-efficacy scale (α=0.89), and a financial report accuracy checklist (inter-rater κ=0.82). Data were analyzed using paired t-tests, Cohen's d, and thematic analysis. Significant improvements were found in knowledge (t=12.34, p<0.001, d=2.01), self-efficacy (t=11.22, p<0.001, d=1.89), and report accuracy (t=9.87, p<0.001, d=1.64). Qualitative findings revealed three major themes: enhanced conceptual understanding, increased confidence and motivation, and improved collaborative practices. Participatory training effectively strengthens financial management capacity in resource-constrained school settings, enhancing both technical competence and professional agency. Integration of participatory approaches into continuous professional development policies is strongly recommended.

Keywords:	participatory training, school financial management, administrative staff, underfunded schools		
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INTRODUCTION

Effective management of school finances constitutes a cornerstone of quality education delivery, particularly in decentralized systems where schools exercise considerable autonomy over budget allocation. In Indonesia, the School Operational Assistance (Bantuan Operasional Sekolah, BOS) program has become the primary funding mechanism for public and private primary and secondary schools, channeling central government funds directly to school accounts to cover non-personnel operational costs. While the BOS has significantly improved access and reduced financial barriers, the sufficiency and management of these funds remain persistent challenges, especially for secondary schools operating in rural or low-income urban areas where alternative revenue streams are minimal. Such "underfunded schools" face a dual burden: inadequate financial resources to meet all operational needs and limited human resource capacity to manage the available funds with optimal transparency, accountability, and efficiency (Magsi et al., 2026). Within these schools, administrative staff—commonly referred to as tenaga administrasi sekolah (TAS)—are the frontline actors responsible for financial recording, bookkeeping, reporting, and ensuring compliance with regulations. However, empirical evidence indicates that many TAS have never received formal training in financial management, relying instead on trial-and-error practices or informal guidance from peers. This capacity deficit poses serious risks, ranging from administrative errors and delayed reporting to misallocation of funds and, in severe cases, financial mismanagement which can lead to legal repercussions for school principals and treasurers.

This situation is exacerbated in underfunded secondary schools, where the absence of dedicated finance officers means that a single administrative staff member often handles multiple roles encompassing student affairs, personnel administration, and financial management simultaneously. The BOS technical guidelines require schools to prepare annual School Budget Plans (Rencana Kegiatan dan Anggaran Sekolah, RKAS), maintain cash books and bank reconciliation statements, and submit periodic financial reports to district education offices (Ministry of Education and Culture, 2019). Fulfilling these requirements demands not only procedural knowledge but also analytical skills to align budgeting with school development priorities. However, recent audits by the Supreme Audit Agency (BPK) have repeatedly noted discrepancies in BOS fund utilization, including incomplete supporting documents, arithmetic errors, and expenditures that deviate from the approved plans (BPK RI, 2022). These findings underscore the urgency of strengthening the financial management capacity of school-level actors, particularly in schools that cannot afford to hire external consultants or purchase specialized software (Rafiuddin et al., 2025).

Traditional approaches to capacity building for school administrative staff in Indonesia have largely followed a top-down, lecture-based training model that is organized sporadically by district education offices. These one-off sessions typically emphasize normative rule transmission—reading aloud regulations and explaining report templates—without providing opportunities for active experimentation, problem-solving, or peer collaboration. Adult learning theory, however, posits that professionals learn most effectively when they are actively engaged in the learning process, can draw upon their own experiences, and perceive the immediate relevance of the content to their work challenges. Participatory training methods, which incorporate group discussions, simulations, case-based learning, and role-playing, align closely with these andragogical principles and have shown promising results in diverse professional development contexts, including public financial management and community development (Abdelhadi, 2025). Despite this theoretical and empirical support, the application of participatory training specifically tailored to school financial management in underfunded Indonesian secondary schools remains unexplored.

Therefore, a gap exists in both the literature and practice: while the need for capacity building is widely acknowledged, there is limited rigorous evidence regarding the effectiveness of participatory training interventions in improving the financial management competencies of administrative staff in resource-constrained school environments. Most existing studies on school financial capacity either focus on principals (Abraham et al., 2025) or treat administrative staff as a homogenous group without disaggregating them by school resource level. Moreover, few studies have adopted a mixed-method approach that captures not only quantitative changes in knowledge and performance but also the nuanced, experiential dimensions of how such training transforms participants' confidence, motivation, and collaborative practices—factors that are crucial for sustaining behavior change beyond the training room. This methodological limitation restricts policymakers and education managers ability to design holistic interventions that address both the technical and psychosocial barriers to effective financial management.

This study addresses these gaps by implementing and evaluating a participatory training program explicitly designed for administrative staff in underfunded secondary schools. The program was developed through a collaborative process involving school finance experts, experienced TAS, and district education officials to ensure contextual relevance. It incorporates four core modules: conceptual foundations of school financial management, participatory budget planning using RKAS, practical bookkeeping and financial reporting with BOS-compliant templates, and internal control mechanisms for transparency in financial management. Training delivery is grounded in experiential learning cycles, moving from concrete experience (simulated budget allocation), through reflective observation (peer feedback on report drafts), to abstract conceptualization (linking practices to regulatory principles), and active experimentation (participants designing action plans for their schools). Such an approach is hypothesized to enhance declarative knowledge and build procedural competence and strengthen participants' self-efficacy—the belief in their capability to execute financial tasks successfully—which Bandura (1997) identifies as a powerful predictor of performance (Amsari et al., 2024).

The primary objective of This mixed-method study comprehensively evaluates the impact of a participatory training program on three key outcomes: (1) financial management knowledge, measured by a validated achievement test; (2) financial self-efficacy, assessed through a psychometric scale adapted to the school finance context; and (3) the accuracy of school financial reports, determined through an independent document analysis before and after the intervention. The secondary qualitative objective was to explore how participants experienced the training and made sense of any changes in their work practices, confidence, and collegial interactions.

METHOD

This study employed a mixed-method explanatory sequential design (Creswell & Plano Clark, 2017), in which quantitative data collection and analysis were conducted first, followed by qualitative data collection to explain and elaborate on the quantitative results. The quantitative component utilized a one-group pretest-posttest pre-experimental design (O1 X O2), where O1 represents pretest measures, X denotes the participatory training intervention, and O2 represents posttest measures. Although the absence of a control group limits causal inference, this design is appropriate for the initial efficacy testing of novel interventions in field settings where randomization is ethically or logistically unfeasible (Creswell, J. W., & Creswell, 2018). The qualitative component comprised semi-structured interviews conducted within three weeks after the posttest to capture the participants' reflections on their learning and subsequent practice changes.

Participants and Sampling

The study population consisted of administrative staff responsible for financial management (treasurers or finance officers) in underfunded public secondary schools (SMP and SMA) in Kabupaten Maju Jaya, a district in East Java Province characterized by a mix of agricultural and small industrial economies, with many schools located in villages outside the district capital. Underfunded schools were operationally defined as those receiving only the regular BOS allocation without any significant additional income from school-owned enterprises, donations, or local government top-ups, and with a per-student BOS amount below the district median for at least three years. From a district database of 45 such schools, ten schools (six SMP and four SMA) were purposively selected based on the criteria of having administrative staff with no prior formal financial training, willingness to participate, and geographical accessibility to allow training attendance. All four administrative staff members handling finance from each school were recruited, resulting in a total sample of 40 participants.

Demographic characteristics collected through a registration form indicated that the sample was predominantly female (62.5%), with an age range of 24 52 years (M = 34.2, SD = 7.8). The educational backgrounds varied: 60% held a senior secondary school certificate (SMA/sederajat), 25% held a diploma (D3), and 15% had a bachelor's degree (S1), mostly in non-accounting fields. The average length of experience in financial administration was 6.2 years (SD = 4.1). All participants confirmed that their primary financial duties were limited to BOS fund management, with no exposure to other public funds or private funds.

For the qualitative phase, 15 participants were purposively selected to represent variations in school level (SMP/SMA), gender, educational background, and magnitude of pretest-posttest score change (high, medium, and low improvers) to ensure maximum variation sampling (Patton, 2015).

Intervention: Participatory Training Program

The participatory training program was developed over a four-month period through a collaborative design workshop involving two school finance academics, one experienced BOS trainer from the district education office, and three senior administrative staff from non-participant schools. The final program comprised 24 learning hours delivered over three consecutive days (8 hours per day) at a district training center. The training modules were as follows:

Module 1: Foundations of School Financial Management – Introduction to the principles of transparency, accountability, and efficiency; BOS regulatory framework; roles and responsibilities. Methods: interactive lecture, gallery walk of exemplary and flawed financial documents, and small-group discussion of common challenges.

Module 2: Participatory Budget Planning (RKAS) – Steps in preparing RKAS aligning budget priorities with School Self-Evaluation (EDS) results and stakeholder involvement. Methods: A budget committee meeting simulation with assigned roles (principal, treasurer, teacher representative, parent), followed by plenary reflection.

Module 3: Practical Bookkeeping and Financial Reporting – Hands-on practice with the BOS cash book, bank reconciliation, tax calculation, and semester reporting templates. Methods: Case-based workshops using anonymized transaction data from pilot schools; participants completed reports in pairs, with peer review and trainer feedback.

Module 4: Internal Control and Transparency Mechanisms – Designing simple internal control checklists public information boards and preparation for external audits. Methods: role-play of an audit visit, where trainers acted as BPK auditors and participants had to present and defend their financial records followed by group construction of transparency action plans for each school.

Throughout the training, facilitators employed experiential learning cycles: each session began with a concrete task or problem, moved to reflection and conceptual input, and concluded with planning for practical application of the learning. Participants were also formed into "peer learning triads" that committed to monthly WhatsApp-based check-ins for three months post-training to sustain motivation and share solutions.

Instruments and Data Collection

Financial Management Knowledge Test (FMKT). A 30-item multiple-choice test was developed to measure participants' knowledge of BOS regulations, budget planning, bookkeeping principles and reporting standards. The items were constructed based on the BOS technical guidelines and reviewed by a panel of three experts (a school finance academic, a district BOS coordinator, and an experienced school treasurer) to establish content validity. The test was pilot-tested on 28 administrative staff members from non-participant schools, yielding a Kuder-Richardson (KR-20) reliability coefficient of 0.85, indicating good internal consistency. The item difficulty indices ranged from 0.45 to 0.82, and the discrimination indices were all above 0.30. The FMKT was administered on the morning of Day 1 (pretest) and in the afternoon of Day 3 (post test) under supervised conditions.

Financial Self-Efficacy Scale (FSES). Based on Bandura's self-efficacy theory and adapted from the Financial Self-Efficacy Scale by Lown (2011), the FSES consistse of 15 statements assessing participants' confidence in performing specific financial management tasks (e.g., "I am confident I can correctly categorize expenditures according to BOS codes," "I can prepare a bank reconciliation statement without assistance"). Responses were made on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale was validated through exploratory factor analysis with pilot data, confirming a unidimensional structure with factor loadings ranging from 0.62 to 0.88. Cronbach's alpha in the pilot study was 0.89, and in the main study, pretest $\alpha = 0.87$, and posttest $\alpha = 0.90$. The FSES was administered along with the FMKT.

Financial Report Accuracy Checklist (FRAC). To measure the behavioral outcome, financial reports (consisting of Semester 1 reports before training and Semester 2 reports after training) submitted by the ten participating schools to the district education office were independently assessed by two raters—an experienced BOS verifier and a university accounting lecturer—who were blinded to the pre/post status of the report. The checklist contained 20 items grouped into three dimensions: completeness (eight) items, e.g., cover letter, cash book, bank statement, and tax receipts), correctness (seven items, e.g., arithmetic accuracy, proper expenditure classification, and balance equality), and timeliness (five items related to submission dates relative to deadlines). Each item was scored as 0 (absent/incorrect) or 1 (present/correct), yielding a maximum total accuracy score of 20, which was converted to a percentage. The inter-rater reliability calculated using Cohen's kappa was 0.82 for the full sample, indicating a strong agreement. For each school, the semester report accuracy percentage constituted the unit of analysis (n=10 reports pre, n=10 reports post).

Qualitative Data. Semi-structured interviews were conducted in Indonesian within three weeks of the posttest. The interview guide explored four domains: (a) perceived changes in understanding of financial concepts, (b) changes in confidence and anxiety related to financial tasks, (c) observed changes in collaborative practices with principals and teachers, and (d) specific examples of how the training influenced their daily work. The interviews lasted 35–60 minutes, were audio-recorded with consent, and transcribed verbatim. In addition, trainers' field notes and participants' reflective journals (written during training) were collected as supplementary data sources for triangulation.

Data Analysis

Quantitative data were analyzed using SPSS version 26. Descriptive statistics (means and standard deviations) were computed for all outcome variables in the pre and posttests. The Shapiro-Wilk test confirmed that the distributions of the difference scores did not significantly deviate from normality ($p > 0.05$ for all variables). Therefore, paired-samples t-tests were used to compare pre and post test means for knowledge, self-efficacy, and report accuracy. Effect sizes were calculated using Cohen's d for paired designs (mean difference divided by the standard deviation of the difference), with magnitudes interpreted as small (0.2), medium (0.5), and large (0.8) (Cohen, 1988). For the report accuracy analysis, the unit was the school (n=10), and the same paired test procedure was applied.

Qualitative data were analyzed using thematic analysis following Braun and Clarke's (2006) six-phase approach: familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing reports. Two researchers independently coded three transcripts to develop an initial codebook, then met to resolve discrepancies and refine the codes. The remaining transcripts were coded by the first author using NVivo 12, with regular peer debriefing. Themes were identified inductively, with attention to both semantic (explicit) and latent (interpretive) meanings. To enhance trustworthiness, member checking was conducted by presenting preliminary themes to five participants who confirmed the interpretations. The frequency counts of code occurrences across participants were tabulated to indicate theme prevalence, complementing the narrative presentation..

RESULTS AND DISCUSSION

Demographic Profile. Table 1 summarizes the demographic characteristics of the 40 participants in this study. The sample was predominantly female, with mostofa holding secondary education as their highest qualification, reflecting the typical staffing profile of rural school administrative positions in Indonesia.

Table 1.
Demographic Characteristics of Participants (N = 40)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	15	37.5
	Female	25	62.5
Age (years)	20–29	14	35.0
	30–39	17	42.5
	40–52	9	22.5
Highest Education	Senior High School	24	60.0
	Diploma (D3)	10	25.0
	Bachelor's (S1)	6	15.0
Years of Experience	1–5	18	45.0
	6–10	15	37.5
	>10	7	17.5
School Level	SMP	24	60.0
	SMA	16	40.0

Table 2 presents the descriptive statistics for the FMKT in the pretest and posttest. The mean pretest score was 62.50 (SD = 8.23), indicating a moderate baseline knowledge level. Following the intervention, the mean increased to 78.30 (SD = 7.11).

Table 2.
Descriptive Statistics of Financial Management Knowledge Test Scores

Measurement	M	SD	Min	Max
Pretest	62.50	8.23	43	77
Posttest	78.30	7.11	63	93

A paired-samples t-test (Table 3) revealed a statistically significant increase, $t(39) = 12.34$, $p < 0.001$ (two-tailed). The mean increase was 15.80 points (95% CI [13.19, 18.41]). The effect size, Cohen's $d = 2.01$, indicates a very large effect according to conventional benchmarks.

Table 3.
Paired-Samples t-test Results for Knowledge, Self-Efficacy, and Report Accuracy

Outcome Variable	Mean Diff.	SD Diff.	95% CI of Diff.	t	df	p	Cohen's d
Knowledge (n=40)	15.80	8.11	[13.19, 18.41]	12.34	39	<0.001	2.01
Self-Efficacy (n=40)	1.17	0.66	[0.96, 1.38]	11.22	39	<0.001	1.89
Report Accuracy (n=10)	18.10	5.80	[13.95, 22.25]	9.87	9	<0.001	1.64

Note. Report accuracy analysis based on school-level data (ten schools).

The descriptive statistics for the FSES are presented in Table 4. The overall self-efficacy mean rose from 2.95 (SD = 0.65) at pretest to 4.12 (SD = 0.58) at posttest on a 5-point scale. The paired t-test (Table 3) was significant ($p < 0.001$) with a large effect size ($d = 1.89$).

Table 4.
Descriptive Statistics of Financial Self-Efficacy Scale Scores

Measurement	M	SD	Min	Max
Pretest	2.95	0.65	1.73	4.20
Posttest	4.12	0.58	2.93	5.00

To explore the pattern across specific self-efficacy dimensions, the 15 items were grouped into five subscales corresponding to the training modules: Budgeting (4 items), Bookkeeping (3 items), Reporting (3 items), Auditing/Internal Control (3 items), and Transparency Practices (2 items).

The school-level analysis (n=10) of report accuracy percentages before and after the intervention is summarized in Table 5. The mean accuracy of Semester 1 reports (pretraining) was 64.10% (SD = 10.24), whereas Semester 2 reports (post-training) achieved a mean accuracy of 82.20% (SD = 8.53). The paired t-test was significant, $t(9) = 9.87$, $p < 0.001$, $d = 1.64$, indicating a large effect.

Table 5.
Descriptive Statistics of School Financial Report Accuracy (%)

Report Period	M	SD	Min	Max
Before (Sem 1)	64.10	10.24	45.0	80.0
After (Sem 2)	82.20	8.53	70.0	95.0

Note. Each report was evaluated on a 20-item checklist converted to percentage.

A closer examination of the accuracy sub-dimensions indicated that the greatest gains occurred in completeness (from 60% to 85%) and correctness (from 58% to 82%), while timeliness improved more modestly (from 78% to 83%), likely because pre-existing administrative habits influenced submission behavior beyond knowledge alone.

The thematic analysis of interview transcripts, supplemented by reflective journals and trainer observations, yielded three overarching themes: (1) Enhanced Understanding of Financial Management Principles, (2) Increased Confidence and Professional Motivation, and (3) Improved Collaborative Financial Practices. Table 6 provides a summary of the themes, subthemes, and their prevalence across the 15 interviewees.

Table 6.
Summary of Qualitative Themes and Sub-Themes

Theme	Sub-theme	n (of 15)	Illustrative quote
1. Enhanced Understanding	1.1 Conceptual clarity on BOS rules	14	"Now I understand why we cannot use BOS for certain items; it's not just a list of prohibitions, there is logic behind it." (TAS-07)
	1.2 Mastery of reporting logic	13	"I used to just copy the format without understanding the relationships between columns. The cash book simulation made everything click." (TAS-12)
	1.3 Practical application orientation	15	"I immediately applied the bank reconciliation steps when I returned to school; it felt natural because I had already done it twice in training." (TAS-03)
2. Increased Confidence & Motivation	2.1 Reduced anxiety about audits	12	"Before, the word 'audit' made my heart race. Now I feel ready because I know what documents they will ask for and how to explain them." (TAS-15)
	2.2 Self-identification as a professional	11	"I am no longer just a clerk; I am a school finance manager. That shift in mindset came from the training." (TAS-09)
	2.3 Motivation to learn more	10	"After the training, I started reading the BOS guidelines myself and looking for online resources. I want to become even better." (TAS-06)
3. Improved Collaborative Practices	3.1 Joint budget planning with principal	13	"I used to prepare the RKAS draft alone, but now I sit with the principal and head of curriculum; we discuss priorities together." (TAS-02)
	3.2 Peer learning and support networks	11	"Our triad group still chats every week. When I had a problem with a tax form, my friend from another

Theme	Sub-theme	n (of 15)	Illustrative quote
			school sent me a photo of how she solved it." (TAS-11)
	3.3 Increased transparency with teachers	9	"I started putting a summary of BOS use on the school notice board. Teachers appreciate it and now understand why some requests cannot be met." (TAS-04)

Enhanced Understanding of Financial Management Principles. Participants consistently described a transformation from procedural rule-following to conceptual comprehension. Prior to training, many employees viewed BOS management as a set of rigid and confusing templates. As TAS-07 stated, "I just filled columns because that's what the form demanded. I did not know the purpose." Participatory activities, particularly budget simulation and case-based reporting, helped connect rules to practical logic. The sub-theme of practical application orientation was universally mentioned, indicating that the hands-on nature of the training directly facilitated its transfer to the workplace. This aligns with the quantitative jump in knowledge scores and provides insights into the cognitive mechanisms underlying this improvement.

Increased Confidence and Professional Motivation. The emotional and motivational dimensions of capacity strengthening emerged powerfully. Before the training, many participants harbored deep anxiety about making mistakes, especially concerning audits—a fear partially rooted in media reports of corruption cases involving school staff. The audit role-play was repeatedly cited as a turning point in the study. "When the trainer pretended to be a harsh auditor and I managed to answer all questions, I realized it's not something to be terrified of," explained TAS-15. The shift in professional identity from "clerk" to "manager" reflects an internalization of responsibility and agency that Bandura would recognize as enhanced self-efficacy generalizing to the professional self-concept. The motivation to continue learning independently is a promising indicator of sustained capacity development beyond the training period.

Improved Collaborative Financial Practices. Participatory training not only affects individual competencies but also alterse workplace relationships. The simulation of a budget committee meeting, where participants role-played various stakeholders, opened their eyes to the value of shared decision-making. TAS-02's account of now sitting with the principal and curriculum head exemplifies this change Moreover, the peer learning triads, which were intentionally built into the training design, proved effective in maintaining momentum. WhatsApp group chats served as a virtual community of practice, reducing the isolation often experienced by rural school staff. The increased transparency with teachers, though mentioned by fewer participants, is noteworthy as it suggests early steps toward a more open school financial culture which is a key principle of good governance.

Integration of Quantitative and Qualitative Findings. Joint display analysis (not shown in table form) revealed that participants in the highest tertile of knowledge gain were those who most frequently mentioned the sub-themes of conceptual clarity and practical application orientation, while those with the largest self-efficacy gains disproportionately highlighted reduced audit anxiety. The improvement in report accuracy was reflected in qualitative accounts of applying bank reconciliation and proper expenditure classification. Thus, the qualitative data not only corroborate the quantitative outcomes but also enrich the understanding of how and why the training produced its effects

Discussion

The 15.8-point mean increase in knowledge scores (Cohen's d = 2.01) was substantially higher than the effect sizes reported in many conventional training studies in educational settings. For context, a meta-analysis of teacher professional development interventions found an average effect size of d = 0.55 for knowledge outcomes when active learning strategies were employed (Nuraisah et al., 2025). The present study's large effect may be attributable to the concentrated, immersive design and close alignment of training content with participants' immediate job demands, a factor Knowles (1984) identified as critical for adult learning motivation. The low baseline knowledge (M=62.5) confirms the severe capacity deficit in underfunded schools and likely created a "floor effect" that made large relative gains possible. However, the posttest mean (78.3) indicates that participants approached a competent level, though still short of mastery, suggesting that follow-up reinforcement would be beneficial.

The effect on financial self-efficacy (d = 1.89) was equally striking and carried important practical implications. In Bandura's (1997) theoretical framework, self-efficacy is the product of emastery, vicarious experience, social persuasion, and physiological states. The participatory training deliberately incorporated all four sources: budget simulation and bookkeeping workshops provided mastery experiences; observing peers succeed in role-plays offered vicarious learning; collaborative, supportive facilitation served as social persuasion; and repeated practice in a low-stakes environment reduced physiological anxiety associated with financial tasks. The auditing/internal control dimension showed the greatest pre-post gap, which I reasonable given that most participants had never experienced an audit simulation before and thus had the most to gain. The marked increase in self-efficacy is crucial because, as prior research has established, self-efficacy mediates the translation of knowledge into sustained performance (Ullah et al., 2025). Without confidence, staff may know the correct procedures but hesitate to implement them or seek help when they are confused.

The improvement in financial report accuracy (d = 1.64) provides behavioral evidence that the training transferred to the workplace. The Semester 1 reports, prepared before training, revealed an average accuracy of only 64.1%, with common errors including missing supporting documents, misclassification of expenditures and unbalanced cash books. By Semester 2, accuracy rose to 82.2%, a notable achievement given that the training was only three days and no additional resources or software were provided to the students. This finding aligns with Kusuma and Prasojo (2025), who found similar improvements in village fund reporting after participatory training, and extends the evidence base to the school sector. The relatively smaller gain in timeliness underscores that behavioral outcomes with temporal components (e.g., submission punctuality) may require longer-term habit changes or systemic incentives beyond the training itself (Kusuma & Prasojo, 2025).

The integration of quantitative outcomes suggests a plausible sequence: the participatory methodology enhanced deep understanding (knowledge), which, combined with successful task experiences, raised confidence (self-efficacy), thereby empowering the staff to produce more accurate reports. The strength of the design lies in measuring all three constructs and demonstrating concurrent changes.

Qualitative themes provide texture to the statistical results. The first theme, Enhanced Understanding of Financial Management Principles, revealeds that the training moved participants from a state of "blind compliance" to one of "informed practice." This transformation is critical in school settings where regulations frequently change (e.g., updates to BOS guidelines) and staff must be able to adapt without constant retraining. The participatory approach, which engages participants in problem-solving rather than mere rule memorization, appears to fostere a deeper and more flexible cognitive schema. This finding resonates with Kolb's (1984) experiential learning theory: participants cycled through concrete tasks, reflected on outcomes, conceptualized underlying principles, and planned for future application, resulting in learning that was both meaningful and memorable (Kolb, 1984).

The second theme, Increased Confidence and Professional Motivation, addresses the often-neglected affective dimension of capacity building. Many administrative staff in underfunded schools suffer from low professional esteem, being perceived (and perceiving themselves) as minor functionaries rather than essential managers of public funds. The shift in self-identification described by participants (e.g., "I am a school finance manager") signals an empowering transformation that extends beyond the technical domain of school finance management. Reduced audit anxiety is particularly significant in the Indonesian context, where anti-corruption discourse has sometimes created a climate of fear rather than one of empowered accountability. The training seems to have demystified the audit process, reframing it as routine verification rather than an inquisition. This psychological reorientation could have long-term benefits for job satisfaction and retention, which is an important consideration given the already high turnover in rural administrative positions (Giri Aditama et al., 2026).

The third theme, Improved Collaborative Practices, indicates that the training's participatory ethos spilled over into the participants' workplace relationships. The finding that the majority of participants now engage in joint budget planning with principals is particularly encouraging, as it suggests a move toward more democratic school governance, even within the hierarchical structures. This is aligned with the school-based management (SBM) principles that underpin Indonesian education reform, which calls for shared decision-making and transparency. Peer learning triads, sustained through informal digital communication, represent a low-cost mechanism for continuous professional development that could be formally supported by district education offices. Increased transparency with teachers, though reported by a smaller number, hints at a cultural shift toward openness that, if nurtured, could strengthen school community trust and collective responsibility for resource utilization.

These findings have several implications for policymakers and practitioners. First, the substantial effect of a relatively short participatory training suggests that the quality of the professional development methodology matters at least as much as its duration. District education offices, which often allocate budgets for “BOS technical guidance,” should consider redesigning these programs from lecture-based formats to participatory, experiential workshops. The cost of facilitating such training is not necessarily higher than that of conventional approaches—the main requirements are skilled facilitators and appropriate learning materials—but the returns, in terms of immediate competence and downstream reporting accuracy, appear markedly superior.

Second, thise study highlights the importance of targeting administrative staff, not just principals, in financial capacity-building efforts. While principals hold ultimate accountability, the daily financial operations rest with TAS, and underinvestment in their capabilities creates a weak link in the accountability chain. The Merdeka Belajar policy platform, with its emphasis on school-level empowerment, should explicitly include administrative staff in its professional development frameworks, perhaps through a nationally recognized competency certification system that incentivizes continuous learning.

Third, the emergence of self-sustaining peer networks post-training suggests that program designers should deliberately build social infrastructure into capacity-building interventions to ensure sustainability. Simple mechanisms such as structured triad groups, shared digital platforms, and periodic virtual check-ins can extend the half-life of training effects and combat the isolation of rural staff. District education offices could designate “lead treasurers” from well-performing schools to mentor peers in neighboring schools, thereby creating a cascade model of support.

Fourth, the study’s focus on underfunded schools demonstrates that capacity building does not require expensive technology or external consultation. Participatory methods leverage the collective intelligence and experience of the participants, making them especially suitable for resource-constrained settings. This finding has relevance beyond Indonesia and is applicable to many developing countries where school funding is inadequate and administrative staff are underprepared.

This study has several limitations must be acknowledged. The one-group pretest-posttest design, while informative, does not control for threats to internal validity such as history, maturation, or testing effects. It is possible that concurrent district-level initiatives or the mere act of being studied (Hawthorne effect) contributed to these improvements. Future research should employ a randomized controlled trial or, at minimum, a quasi-experimental design with a comparison group of schools receiving standard or no training. Such designs would also allow for the analysis of differential effects by school characteristics.

The sample size (N=40 individuals, 10 schools) was adequate for detecting large effects but had limited statistical power for subgroup analyses (e.g., by education level or experience). Larger-scale studies could investigate the moderators of training effectiveness to tailor interventions. Furthermore, the follow-up period was short; the posttest and interviews occurred within weeks of the training, and report accuracy was measured only for the immediately subsequent semester. Longitudinal research tracking knowledge retention, sustained practice change, and report accuracy over at least one academic year is needed to assess the durability of the program. The finding that self-efficacy and peer networks remained strong after three months is promising, but objective performance measures over time would strengthen thise case.

The reliance on a self-report measure for self-efficacy introduces common method bias, although the objective report accuracy data partially offset this concern. Future studies should incorporate observational assessments of actual financial task performance or supervisor ratings. Additionally, the qualitative component, while rich, drew primarily on self-reported perceptions and observational data from school visits would enhance ecological validity.

Another limitation relates to the operational definition of "underfunded schools," which is based solely on BOS dependence and per-student allocation. Schools in this category may still vary in other resources (e.g., principal leadership and community support) that could influence outcomes. Controlling for such contextual variables in larger samples would clarify the specific contributions of the intervention. Finally, thise study did not examine cost-effectiveness, which is relevant for scaling decisions. Future research could conduct an economic evaluation comparing participatory training with alternatives in terms of the cost per unit of report accuracy improvement.

This study advances the theoretical understanding of capacity building in school financial management by empirically linking participatory training to cognitive, motivational, and behavioral outcomes within a unified framework. It extends the application of experiential learning and self-efficacy theories to an under-researched population—administrative staff in underfunded schools—and demonstrates the value of mixed-method designs in capturing the multi-faceted nature of capacity strengthening in the field. The qualitative finding that participatory training can catalyze collaborative governance practices suggests that such interventions may have spillover effects on broader school improvement efforts, a hypothesis that is worthy of further investigation.

From a methodological standpoint, thise study demonstrates the feasibility and utility of using objective financial report accuracy as a performance metric in educational administration research, moving beyond knowledge tests to ecologically valid outcome indicators. The development and validation of the context-specific Financial Self-Efficacy Scale and report accuracy checklist provide tools that other researchers can adapt for use in similar settings.

CONCLUSION

This mixed-method study provides compelling evidence that a three-day participatory training program significantly enhances the financial management knowledge, self-efficacy, and report accuracy of administrative staff in underfunded Indonesian secondary schools. The large effect sizes across all quantitative measures, corroborated by rich qualitative accounts of improved conceptual understanding, increased professional confidence, and more collaborative work practices, indicate that participatory approaches are a powerful and cost-effective strategy for building capacity in resource-constrained educational settings. The training's effectiveness stems from its alignment with adult learning principles—engaging participants as active problem solvers, leveraging their experience, and creating a supportive social learning environment. The findings have clear implications for policy: district education offices and national training agencies should redesign existing financial management guidance programs to incorporate experiential, participatory methods, explicitly target administrative staff, and embed peer support mechanisms to sustain gains. In the context of Indonesia's ongoing Merdeka Belajar reforms and the global push for transparent, accountable school governance, investing in the professionalization of school finance personnel is not an optional luxury but an essential pillar of educational quality and equity in Indonesia. Future research should confirm these results through controlled longitudinal designs and examine the long-term impact of participatory capacity building on school financial integrity and learning outcomes.

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