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Principal Instructional Leadership in Supporting Students' Numeracy Development at SMP Negeri 1 Maja

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ABSTRACT

This study examines how the principal of SMP Negeri 1 Maja enacts instructional leadership to support students' numeracy learning. The article is based on interview findings involving the principal, the vice principal for curriculum, the Project-Based Learning (PjBL) coordinator, and a subject teacher, together with the reported NVivo coding and source-triangulation results contained in the research material. The findings are organized into five dimensions: setting learning direction, developing teacher competence, conducting academic supervision, using data for decision-making, and cultivating a learning culture. The school principal described numeracy as a school priority, although it is not explicitly stated in the school vision. Teacher development is supported through MGMP, learning communities, in-house training, and the PELITA program. Academic supervision is scheduled and attends to lesson planning that incorporates numeracy concepts. Assessment data and the Education Report are used as references for evaluation and continuous improvement. A collaborative learning culture is encouraged through habituation activities, numeracy practice, cross-subject collaboration, and PjBL. NVivo analysis identified 18 coded references for the instructional-leadership focus; this count represents coding frequency rather than a measure of leadership quality or student achievement. The findings indicate that instructional leadership is enacted through interconnected school programs and teaching support. However, the available data do not establish a direct causal effect on students' numeracy outcomes.

Informasi Artikel

Katakunci:
Kepemimpinan pembelajaran; numerasi; kepala sekolah; supervisi akademik; pengembangan guru

ABSTRAK

Penelitian ini mengkaji bagaimana kepala SMP Negeri 1 Maja menerapkan kepemimpinan pembelajaran untuk mendukung pembelajaran numerasi siswa. Artikel ini disusun berdasarkan temuan wawancara dengan kepala sekolah, wakil kepala sekolah bidang kurikulum, koordinator pembelajaran berbasis proyek, dan seorang guru mata pelajaran. Analisis mengidentifikasi lima dimensi praktik kepemimpinan, yaitu penetapan arah pembelajaran, pengembangan kompetensi guru, supervisi akademik, pengambilan keputusan berbasis data, dan pengembangan budaya belajar kolaboratif. Hasil pengodean menggunakan NVivo menunjukkan 18 referensi yang dikodekan pada fokus kepemimpinan pembelajaran dan dikelompokkan ke dalam lima subnode. Angka tersebut menunjukkan frekuensi referensi hasil pengodean, bukan skor efektivitas kepemimpinan. Temuan wawancara dan ringkasan triangulasi menunjukkan bahwa numerasi diposisikan sebagai prioritas sekolah, meskipun tidak dinyatakan secara eksplisit dalam visi "BAHAGIA". Dukungan dilakukan melalui pengembangan profesional guru, supervisi perencanaan pembelajaran, pemanfaatan data untuk perbaikan, program CERIA, dan pembelajaran berbasis proyek. Bahan yang tersedia belum cukup untuk menyimpulkan hubungan sebab-akibat antara praktik kepemimpinan dan peningkatan hasil numerasi siswa.

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1. Introduction

Numeracy learning requires more than the delivery of mathematical content in a single subject. It also depends on how schools establish learning priorities, support teachers' professional growth, monitor instruction, use evidence to guide improvement, and create opportunities for students to apply quantitative reasoning in meaningful contexts [1], [2]. Instructional leadership can be examined through the ways school direction and resources are connected to classroom practice [3], [4], while broader research has synthesized the ways principals influence schools and students [5].

This article focuses on SMP Negeri 1 Maja and describes the principal's instructional-leadership practices in supporting numeracy learning. The source material identifies five dimensions of leadership: setting the direction of learning, developing teacher competence, academic supervision, data-informed decision-making, and developing a learning culture. These dimensions provide an organizing framework for presenting interview evidence and the accompanying NVivo coding and triangulation results.

The school's vision is expressed as "BAHAGIA." According to the principal, numeracy is not stated explicitly in the vision but is embedded in it and treated as a school priority. This distinction is important: the findings concern how numeracy is incorporated into school programs and instructional practices, rather than whether the term appears verbatim in the vision statement. Accordingly, the article asks: how is the principal's instructional leadership enacted across the five dimensions, and how do the interview and coding results describe the school's support for numeracy learning?

2. Method

This article presents a qualitative descriptive case account of SMP Negeri 1 Maja, a public junior high school in Maja District, Majalengka, West Java, Indonesia. Data were collected from July to October 2026. Four informants were selected purposively because their roles connected them to school leadership, curriculum, project-based learning, and classroom instruction: the principal (KS-01), vice principal for curriculum (WK-01), Project-Based Learning coordinator (KPJ-01), and a subject teacher (GM-01). Data sources included in-person semi-structured interviews conducted after informed consent, field notes, direct observation, teacher Google Form responses, and school documentation. The available record does not specify interview duration or the number of Google Form respondents; these figures are therefore not reported.

Analysis followed the interactive process of data condensation, data display, and conclusion drawing/verification described in the study materials. NVivo was used to organize coding and produce a Matrix Coding Query and project map. The instructional-leadership focus contained 18 coded references, meaning coded references returned for that focus in the query; the available record does not define these as unique participants or independent statements. The count is a coding frequency, not a score or measure of leadership effectiveness. Five child nodes were used: KP-VISI (learning direction), KP-GURU (teacher competence), KP-SUP (academic supervision), KP-DATA (data-informed decisions), and KP-BUD (learning culture). The materials do not document an independent second-coder agreement test; dependability is therefore interpreted cautiously through the reported comparison of interview accounts with Google Form responses and documentation.

Triangulation was described as comparing interview accounts with teacher Google Form responses and school documentation for the five leadership dimensions. The supplied summary reports overall consistency across these sources, but the underlying response-level data and documentation matrix were not available for independent re-analysis. No discrepant cases were specified in the available summary, so the article does not claim that all sources agreed in every instance.

3. Results & Discussion

Setting learning direction and numeracy priorities

The principal explained that numeracy is implicit in the school vision and is one of the school's priorities: "Visinya adalah BAHAGIA. Numerasi tidak tersurat dalam visi, namun tersirat dalam visi dan merupakan program prioritas di sekolah ini" (KS-01). The vice principal for curriculum similarly described the direction as implicit and integrated into the school mission, while noting the current emphasis on the Adiwiyata program (WK-01). These accounts suggest that numeracy is positioned through school priorities and program implementation rather than through an explicit reference in the vision statement.

Leadership direction is also reflected in the provision of resources for PjBL. The coordinator reported support through budgeting, teaching aids, and learning resources (KPJ-01). The subject teacher stated that the principal's direction is conveyed in accordance with the school mission (GM-01). Taken together, the accounts show a connection between school direction, resource support, and the implementation of learning activities. They do not, by themselves, demonstrate the extent to which these arrangements have changed students' numeracy achievement.

Developing teacher competence

Teacher development is supported through collaborative and professional-learning activities. The principal referred to MGMP and learning communities (Kombel) as channels for developing teacher competence (KS-01). The vice principal identified diagnostic screening during student orientation, in-house training (IHT), and the PELITA program as activities related to literacy and numeracy improvement (WK-01). The subject teacher also mentioned IHT, MGMP, and professional learning collaboration (GM-01).

These findings portray teacher development as a reported combination of professional-learning activities and collaboration, consistent with literature on professional learning communities and collaborative professionalism [6], [7]. The source material does not provide participation rates, detailed training content, or evidence of changes in teaching practice following these activities. The findings therefore document reported support mechanisms rather than demonstrated improvements in teacher competence.

Academic supervision

The principal stated that academic supervision is scheduled annually through the Ruang GTK platform and includes checking whether subjects have lesson plans incorporating numeracy (KS-01). The vice principal reported that supervision is conducted periodically and that numeracy concepts appear in planning for certain subjects (WK-01). From the teacher's perspective, supervision can support competence development and reflection on how numeracy concepts are applied in instruction (GM-01).

The accounts indicate that supervision is used both as a monitoring mechanism and as an opportunity for reflection. At the same time, the evidence distinguishes between checking lesson plans and observing the quality of implementation. The

source documents attention to planning, but does not provide systematic classroom-observation results or follow-up evidence that would establish how consistently numeracy-focused plans are enacted.

Data-informed decision-making

The principal reported that data are read and analyzed according to the available facts and recommendations for improvement (KS-01). The vice principal described data as a reference for continuous improvement, while the subject teacher noted that the principal reminds and facilitates teachers to use data. The PjBL coordinator added that assessment results or the Education Report are used to guide the design of students' learning needs and related projects (KPJ-01).

These statements place data use across school management, curriculum planning, and learning activities. The reported practice is consistent with research emphasizing data-informed decision-making for school improvement [8]. Assessment and feedback are also relevant to instructional decision-making [9]. Nevertheless, the provided material does not include specific assessment values or a before-and-after comparison. The article therefore reports the stated role of data in decision-making without claiming a measurable improvement in numeracy outcomes.

Developing a collaborative learning culture

The principal described habituation activities and the CERIA program, which includes learning enrichment and numeracy practice (KS-01). The vice principal characterized the school's learning culture as collaborative (WK-01). The PjBL coordinator perceived project-based learning as an opportunity for students to work together and apply numeracy to everyday situations (KPJ-01), while the subject teacher reported collaboration across subjects (GM-01). These are informants' reported practices and perceptions, not direct evidence of improved student performance.

The accounts portray numeracy as an activity that can extend beyond mathematics lessons through practice, project work, and cross-subject collaboration [10]. This aligns with the view of numeracy as a capability developed across curricular contexts [1]. PjBL is described as a contextual opportunity for students to use numeracy in real-life situations. However, the source material does not provide direct student performance data or observations sufficient to determine the level of student participation or mastery.

NVivo coding and source triangulation

The NVivo Matrix Coding Query identified 18 references coded under the instructional-leadership focus. The project map grouped the data into five child nodes: KP-VISI, KP-GURU, KP-SUP, KP-DATA, and KP-BUD. These nodes align with the five dimensions described in the interviews. The count of 18 is a coding frequency and must not be interpreted as a rating, percentage, or direct measure of leadership quality.

The source-triangulation summary reports consistency across interviews, teacher Google Form responses, and documentation on five themes: numeracy as a school priority; professional-learning support; supervision of numeracy-related planning; use of data for evaluation and improvement; and a collaborative learning culture involving habituation, numeracy practice, and PjBL. Because the underlying Google Form responses and documentation matrix were not available for independent re-analysis, this is reported as the study's summary rather than as a new verification by the article authors. The source summary does not identify specific discrepant cases.

Table 1. Summary of Instructional-Leadership Findings and Triangulation

Dimension	Summary of Reported Evidence
Learning direction	Numeracy is described as an implicit element of the school vision and a school priority; PjBL is supported through budgeting and learning resources.
Teacher competence	MGMP, Kombel, IHT, PELITA, and teacher collaboration are identified as professional-development supports.
Academic supervision	Supervision is scheduled and attends to lesson planning that incorporates numeracy concepts.
Data-informed decisions	Assessment information and the Education Report are described as references for evaluation, planning, and continuous improvement.
Learning culture	Habituation, CERIA enrichment and numeracy practice, collaboration across subjects, and PjBL are reported as supporting a collaborative and contextual learning culture.

Source: Interview findings, NVivo coding description, and triangulation summary in the supplied research material.

4. Conclusion

At SMP Negeri 1 Maja, the principal's instructional leadership is described through five connected practices: establishing learning direction, supporting teacher competence, conducting academic supervision, using data for improvement, and developing a collaborative learning culture. Numeracy is treated as a school priority even though it is not explicitly stated in the school vision. Reported support mechanisms include MGMP, Kombel, IHT, PELITA, scheduled supervision, assessment-data use, numeracy practice, and PjBL. These findings provide a contextual account of how school-level leadership activities are connected to numeracy support, but they do not establish effects on student achievement.

The NVivo analysis identified 18 coded references for the instructional-leadership focus, organized into five child nodes. This count describes the coding output and is not evidence of the magnitude of leadership effectiveness. The triangulation summary indicates convergence across the reported sources on the five dimensions. The main limitation is that the available material documents leadership practices more directly than student numeracy outcomes; it does not establish a causal relationship between the practices and changes in achievement. Before submission, the authors should add the full methodological details and the complete references actually used in the wider study.

Declarations

Conflict of interest: The authors declare no conflict of interest.

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Data availability: The qualitative materials are not included in this article. Access to underlying materials is subject to confidentiality and the school's permissions.

Ethics and consent: The available research record indicates that interviews were conducted after informed consent. No formal ethics approval number was identified in the materials reviewed.

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