



## Instructional planning practices and challenges among Somali teachers: an ADDIE-based study

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### ABSTRACT

Instructional planning is fundamental to effective teaching, yet empirical evidence from post-conflict, resource-constrained settings remains scarce. This study examined Somali teachers' ADDIE-based instructional planning practices, their perceptions of how structured planning supports teaching, and the challenges of implementation. A descriptive quantitative cross-sectional survey was conducted in May 2026 with 45 primary and secondary school teachers in Mogadishu, Somalia, selected through purposive sampling. Data were collected using a structured 15-item four-point Likert questionnaire reviewed by three academic experts and analyzed using descriptive statistics. Findings showed that teachers reported generally strong instructional planning across all five ADDIE stages, with implementation and evaluation rated higher than analysis and development. Teachers also perceived structured planning as supporting teaching practices, particularly teacher professionalism, pedagogical coherence, and instructional consistency. Primary challenges included limited professional development opportunities, technology-integration difficulties, large class sizes, insufficient preparation time, and restricted instructional resources. These perception-based findings highlight the importance of context-responsive professional development and institutional support to strengthen instructional planning competencies in resource-constrained educational settings.

### ARTICLE INFO

#### Article History:

Received: 11 Apr 2026  
Revised: 25 Aug 2026  
Accepted: 1 Sep 2026  
Publish online: 17 Sep 2026

#### Keywords:

ADDIE framework;  
instructional planning;  
Somalia; teacher perceptions;  
teaching practices

#### Open access

Curricula: Journal of Curriculum Development is a peer-reviewed open-access journal

### ABSTRAK

Perencanaan pembelajaran merupakan komponen fundamental dalam pengajaran yang efektif, namun bukti empiris dari lingkungan pascakonflik dengan keterbatasan sumber daya masih terbatas. Penelitian ini mengkaji praktik perencanaan pembelajaran guru Somalia berdasarkan kerangka ADDIE, persepsi mereka terhadap dukungan perencanaan terstruktur dalam pengajaran, serta tantangan dalam implementasinya. Survei kuantitatif deskriptif dengan desain potong lintang dilakukan pada Mei 2026 terhadap 45 guru sekolah dasar dan sekolah menengah di Mogadishu, Somalia, yang dipilih melalui purposive sampling. Data dikumpulkan menggunakan kuesioner Likert empat poin sebanyak 15 item, yang ditinjau oleh tiga pakar akademik dan dianalisis menggunakan statistik deskriptif. Temuan menunjukkan bahwa guru melaporkan praktik perencanaan yang secara umum tinggi di seluruh lima tahap ADDIE, dengan tahap implementasi dan evaluasi yang dinilai lebih tinggi dibandingkan tahap analisis dan pengembangan. Guru mempersepsikan perencanaan terstruktur sebagai pendukung praktik pengajaran, khususnya profesionalisme guru, koherensi pedagogis, dan konsistensi pembelajaran. Tantangan utama meliputi keterbatasan kesempatan pengembangan profesional, kesulitan mengintegrasikan teknologi, ukuran kelas yang besar, keterbatasan waktu persiapan, serta keterbatasan sumber daya pembelajaran. Temuan berbasis persepsi ini menegaskan pentingnya pengembangan profesional yang responsif terhadap konteks serta dukungan institusional untuk memperkuat kompetensi dalam perencanaan pembelajaran di lingkungan pendidikan dengan keterbatasan sumber daya.

**Kata Kunci:** kerangka ADDIE; perencanaan pembelajaran; persepsi guru; praktik mengajar; Somalia

### How to cite (APA 7)

Ahmed, A. A., & Wahyudin, W. (2026). Instructional planning practices and challenges among Somali teachers: an ADDIE-based study. *Curricula: Journal of Curriculum Development*, 5(3), 1165-1178.

### Peer review

This article has been peer-reviewed through the journal's standard double-blind peer review, where both the reviewers and authors are anonymised during review.

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## **INTRODUCTION**

Among available instructional design models, the ADDIE framework, consisting of Analysis, Design, Development, Implementation, and Evaluation, offers a broad stage-based structure that can be applied flexibly while maintaining explicit links among needs analysis, instructional design, development, implementation, and evaluation (Molenda, 2003; Spatioti et al., 2022). Compared with more prescriptive instructional-design approaches, its adaptable five-stage structure is particularly suitable for examining where strengths and constraints emerge across teachers' instructional planning processes. Its five-stage structure is particularly useful in resource-constrained teacher contexts because it enables examination of specific planning strengths and implementation barriers at each stage. Empirical evidence further demonstrates ADDIE's practical application in teacher development, including technology-supported instructional practice (Sulistyaningrum et al., 2023).

Recent research demonstrates that effective lesson planning depends on teachers' ability to connect pedagogical goals with instructional decisions and to integrate appropriate technological and pedagogical knowledge. Studies have shown that teachers' technology use is shaped by their professional knowledge and beliefs, while lesson-planning research highlights the importance of structured decision-making and alignment in preparing instruction (Backfisch et al., 2021; Koenig et al., 2024; König et al., 2021; Krepf & König, 2023; Lachner et al., 2021). ADDIE-based teacher development further illustrates how a systematic design framework can support teachers' preparation for technology-supported instruction (Sulistyaningrum et al., 2023). However, this body of evidence is concentrated in established, well-resourced educational systems, and relatively little is known about how structured planning frameworks such as ADDIE operate in contexts where professional learning opportunities, institutional support, and instructional resources are severely constrained.

Somalia's national education sector strategic plan for 2022–2026 notes that the country's education system continues to face challenges regarding teacher preparation, learning resources, and institutional capacity, with national education priorities emphasizing the need to strengthen teacher training and expand access to teaching and learning materials. Similar contextual pressures have been reported in East Africa, where Ethiopian evidence indicates that teachers' professional learning and classroom practice are strongly shaped by institutional support and context-responsive professional-development practices (Geletu & Mihiretie, 2023). More broadly, resource scarcity and disrupted educational conditions can constrain teachers' instructional practices (Denti et al., 2024; Jones et al., 2022). These conditions suggest that the usefulness of a structured planning framework such as ADDIE may depend not only on its theoretical sequence but also on how its stages can be enacted under resource and institutional constraints.

A focused review of literature published between 2021 and 2026 identified very limited empirical research applying the ADDIE framework specifically to in-service teachers' instructional planning in developing or post-conflict educational settings, and no Somalia-focused empirical study. This study therefore extends existing instructional-planning

research by examining how teachers enact and are constrained by the ADDIE stages in a post-conflict, resource-limited context, while also investigating teachers' perceptions of how structured planning supports their teaching practices. Accordingly, this study addresses three related research questions: 1) How teachers perceive and practice instructional planning in their professional teaching contexts; 2) How they perceive structured instructional planning as supporting instructional alignment, instructional consistency, and pedagogical coherence; and 3) What challenges they encounter when implementing systematic instructional planning in developing and resource-constrained educational contexts. This study aims to: 1) Describe teachers' instructional planning practices based on the ADDIE framework; 2) Examine teachers' perceptions of how instructional planning supports their teaching practices; and 3) Identify the challenges teachers face in implementing systematic instructional planning in a post-conflict, resource-constrained educational context.

## **LITERATURE REVIEW**

### **Instructional Planning**

Instructional planning is a systematic process through which teachers organize learning objectives, instructional strategies, instructional resources, classroom activities, and assessment methods to facilitate effective learning experiences. It provides the foundation for translating curriculum goals into classroom practice while ensuring alignment among learning outcomes, instructional implementation, and assessment. Previous studies indicate that systematic instructional planning is associated with stronger instructional organization, pedagogical coherence, and alignment between instructional decisions and classroom practice (Beckmann & Ehmke, 2023; Hatch & Clark, 2021; Krepf & König, 2023). Consequently, instructional planning is widely regarded as a fundamental professional competency that supports effective curriculum implementation.

Recent curriculum development research also emphasizes that systematic needs analysis and curriculum formulation provide an essential foundation for effective instructional planning (Suhadha et al., 2026). Recent research in teacher education further demonstrates that structured lesson-plan analysis can help teachers connect professional knowledge with concrete lesson-planning decisions (Zaragoza et al., 2023). Teachers' professional competence is also reflected in their ability to analyze and select instructional tasks and prepare their implementation during lesson planning (Hammer & Ufer, 2023). Evidence from pre-service teacher education further indicates that learning-centered lesson design can provide a structured means for prospective teachers to develop their understanding of teaching practice (Gravett & van der Merwe, 2023).

### **The ADDIE Instructional Design Framework**

The ADDIE framework is one of the most widely adopted instructional design models for developing systematic and effective learning experiences. In "*Instructional design: The ADDIE approach*," Branch explains that the framework consists of five sequential stages: 1) Analysis; 2) Design; 3) Development; 4) Implementation; and 5) Evaluation. The analysis stage focuses on identifying learners' needs and instructional objectives, while the design stage organizes learning outcomes, instructional strategies, and assessment plans. During

development, instructional materials and learning resources are prepared before implementation in classroom practice.

Finally, the evaluation stage measures learning outcomes and instructional effectiveness to support continuous improvement. Due to its systematic yet flexible nature, the ADDIE framework has been widely applied across diverse instructional contexts, including contemporary technology-supported and distance-learning environments (Merrill, 2002; Molenda, 2003; Spatioti et al., 2022). Empirical research on collaborative lesson planning similarly shows that planning involves iterative analysis and refinement from the perspectives of pedagogy, learners, and instructional context (Yan & Goh, 2023).

### **Instructional Planning and Teaching Practices**

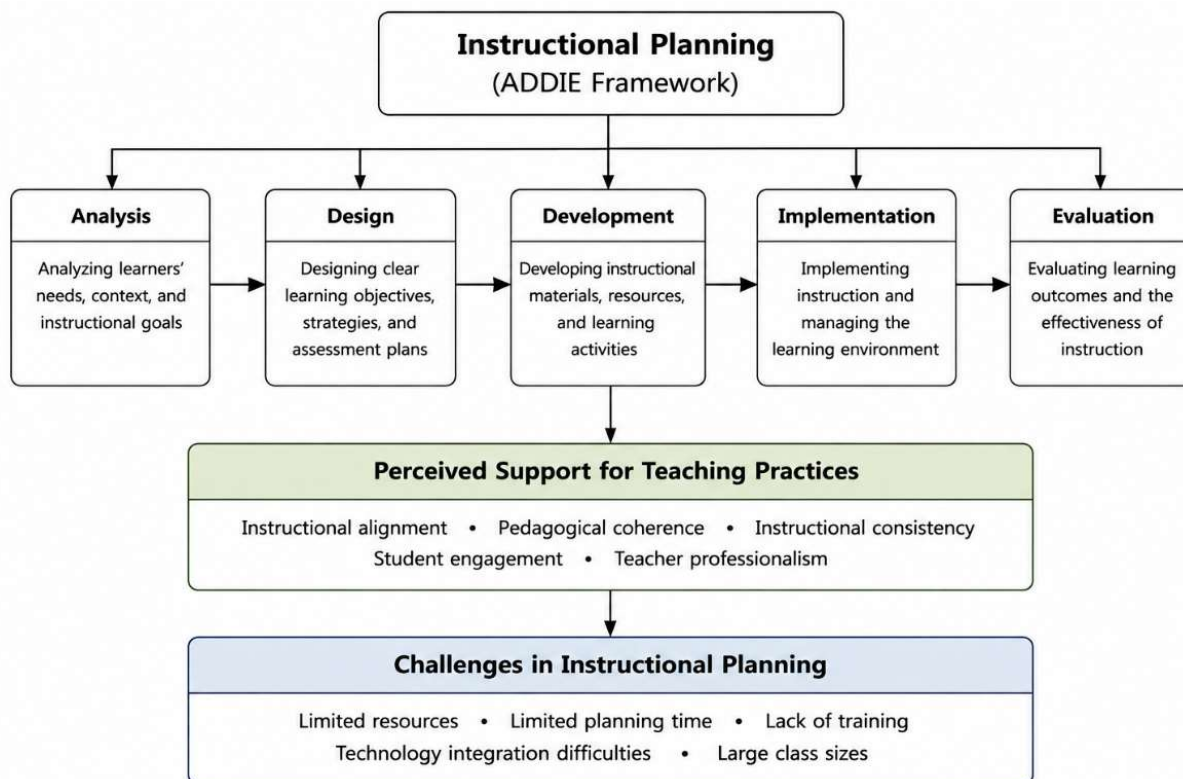
Instructional planning provides a structured basis for organizing teaching practices by aligning learning objectives, classroom activities, instructional strategies, and assessment. Systematic planning may support pedagogical coherence, consistency in classroom instruction, student engagement, and teacher professionalism. When teachers engage systematically in instructional preparation, alignment among objectives, strategies, and assessment can support more coherent and consistent classroom instruction. Structured planning also provides a professional framework for teachers to reflect on and adjust pedagogical decisions, reinforcing instructional quality and professional accountability. Previous research has associated systematic instructional planning with stronger lesson organization, instructional consistency, and alignment among learning objectives, classroom activities, and assessment practices (Cevikbas et al., 2024; Koenig et al., 2024; Teig & Nilsen, 2022).

### **Instructional Planning in Developing Educational Contexts**

Although instructional planning models have been widely studied in developed educational systems, relatively little empirical evidence exists regarding their implementation in developing and post-conflict countries. Somalia continues to face challenges related to teacher preparation, instructional resources, infrastructure, and institutional capacity, with national priorities emphasizing teacher development and improved access to teaching and learning materials. In post-conflict settings, disruptions to professional learning, institutional support, and resource availability can make it difficult for teachers to plan instruction consistently and implement intended curricula (Denti et al., 2024; Jones et al., 2022). These conditions increase the importance of systematic instructional planning by providing structured guidance for organizing instruction while also highlighting how contextual constraints may affect teachers' engagement at different stages of the planning process.

Collectively, the reviewed literature establishes instructional planning as a fundamental component of effective teaching, with the ADDIE framework providing a systematic and adaptable structure for implementation. While existing research has demonstrated the importance of instructional planning across established educational systems, empirical evidence from post-conflict and resource-constrained settings such as Somalia remains scarce. This study addresses that gap by examining Somali teachers' instructional planning

practices, their perceived relationship with teaching practices, and the contextual challenges they encounter. Figure 1 presents the research framework guiding this study.



**Figure 1.** Research Framework of the Study  
*Source: Authors' own construction (2026)*

The research framework illustrates instructional planning based on the ADDIE framework and teachers' perceived support for teaching practices. Instructional planning is organized through five stages: analysis, design, development, implementation, and evaluation. These stages guide the systematic development of instruction and ensure alignment between learning objectives, instructional strategies, and assessment practices. The framework also shows how teachers may view systematic instructional planning as supporting teaching practices, including instructional alignment, pedagogical coherence, instructional consistency, student engagement, and teacher professionalism. In addition, the model highlights key challenges such as limited resources, insufficient training, time constraints, large class sizes, and difficulties in technology integration, which may influence the implementation of instructional planning in practice.

## METHODS

### Research Design

This study employed a descriptive quantitative research design to investigate instructional planning practices, teachers' perceptions of how instructional planning supports teaching practices, and the challenges associated with systematic planning among teachers in

Somalia. A cross-sectional survey design was adopted to collect data at a single point in time (Capili, 2021; Connelly, 2016).

## **Participants and Sampling**

The study used purposive sampling to recruit 45 primary and secondary school teachers in Mogadishu, Somalia (Memon et al., 2025). The sample comprised 17 primary-school teachers and 28 secondary-school teachers. Regarding teaching experience, 12 participants had 1–3 years, 18 had 4–7 years, and 15 had 8 years or more. Participants taught a range of subject areas, including Biology, English, mathematics, science, physics, chemistry, history, geography, Somali, Arabic, and other subjects. We approached potential participants through two recruitment channels: invitations sent directly to teachers via WhatsApp and invitations facilitated through school administrators.

The invitation described the study and the eligibility criteria, which required participants to be actively teaching, have at least one year of teaching experience, have experience in lesson planning and classroom instruction, and be willing to participate. Eligible teachers who agreed to participate received access to the Google Forms questionnaire. We screened submitted responses for completeness and consistency, resulting in a final sample of 45 primary and secondary school teachers. We did not collect gender or school identifiers; therefore, we could not determine gender distribution or the exact number of participating schools. The sample was used to characterize instructional planning practices and perceptions within the participating group, not to make population-level causal or inferential claims.

## **Instrument**

Data were collected using a structured questionnaire developed for this study based on the ADDIE framework and relevant literature on instructional planning and teaching practices (Hatch & Clark, 2021; Koenig et al., 2024). The questionnaire included 15 Likert-type items organized into three dimensions: five items assessing instructional planning practices aligned with the ADDIE stages, five items assessing teachers' perceptions of instructional planning in relation to teaching practices, and five items assessing challenges in implementing systematic instructional planning. Three reviewers with relevant academic expertise reviewed the instrument before data collection to assess content relevance, clarity, and alignment with the study objectives.

Based on their feedback, the researchers revised unclear wording, refined item phrasing for consistency, and strengthened alignment between individual items and the three questionnaire dimensions before distribution. Internal consistency analysis indicated acceptable to good reliability, with Cronbach's alpha coefficients of .820 for instructional planning practices, .799 for perceptions of teaching practices, and .762 for implementation challenges. The overall 15-item instrument yielded a Cronbach's alpha coefficient of .921. The questionnaire was administered in English.

## **Data Collection**

All questionnaire items used a four-point Likert-type response format, where 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4 = Strongly Agree. A four-point forced-choice format encouraged respondents to express a directional judgment rather than select a neutral midpoint (Jebb et al., 2021). Data were collected online through Google Forms from May 4 to May 7, 2026. Access to the online questionnaire was facilitated by distributing the survey link directly to teachers through WhatsApp and school administrators, allowing participating teachers to complete the questionnaire using their own internet-enabled devices.

## **Data Analysis**

The collected responses were exported to Microsoft Excel for initial data organization and screening, then analyzed using IBM SPSS Statistics. The dataset was checked for completeness and consistency before analysis. Responses were organized into three five-item dimensions: instructional planning practices, teachers' perceptions of the relationship between instructional planning and teaching practices, and challenges in implementing systematic instructional planning. We calculated item- and dimension-level descriptive statistics using frequencies, percentages, means, and standard deviations, and assessed internal consistency using Cronbach's alpha. The possible response range was divided into four equal-width intervals (0.75 points): 3.26–4.00 = Very High; 2.51–3.25 = High; 1.76–2.50 = Moderate; and 1.00–1.75 = Low, for transparent descriptive interpretation. The analysis for RQ1 summarized the five ADDIE-based instructional planning items; the analysis for RQ2 summarized the five items concerning teachers' perceptions of the relationship between instructional planning and teaching practices; and the analysis for RQ3 summarized the five items concerning implementation challenges.

## **Ethical Considerations**

Before completing the questionnaire, all participants received information about the purpose of the study, and informed consent was obtained before participation. Participation was voluntary, responses were collected without requesting personally identifying information, and the data were used exclusively for academic research purposes. We maintained confidentiality throughout data handling and reporting. This study did not obtain formal institutional ethics committee approval; we acknowledge this transparently as a procedural limitation.

# **RESULTS AND DISCUSSION**

## **Teachers' Instructional Planning Practices**

The first research question examined how teachers perceive and practice instructional planning across the five stages of the ADDIE framework. **Table 1** presents the descriptive results of teachers' instructional planning practices based on the ADDIE model.

**Table 1.** Descriptive Results of Instructional Planning Practices Based on the ADDIE Framework (N = 45)

| No | ADDIE Stages                                                | Mean | SD   | Category |
|----|-------------------------------------------------------------|------|------|----------|
| 1  | Analysis: identifying learner needs and instructional goals | 2.53 | 1.18 | High     |
| 2  | Design: formulating objectives and instructional strategies | 2.80 | 0.94 | High     |
| 3  | Development: preparing learning materials and resources     | 2.58 | 0.99 | High     |
| 4  | Implementation: delivering instruction in the classroom     | 3.02 | 0.89 | High     |
| 5  | Evaluation: assessing outcomes and reviewing effectiveness  | 2.82 | 0.91 | High     |
| 6  | Overall Mean                                                | 2.75 | 0.98 | High     |

Source: Research data, 2026

**Table 1** shows an overall instructional planning mean of 2.75, categorized as High. Implementation recorded the highest mean (3.02), followed by evaluation (2.82), design (2.80), development (2.58), and analysis (2.53). All five ADDIE stages were categorized as High, although analysis and development recorded comparatively lower mean scores than implementation and evaluation.

### Teachers' Perceptions of Instructional Planning Support

The second research question examined how teachers perceived structured instructional planning as supporting their teaching practices. **Table 2** presents the descriptive results for the teaching-practice dimensions reported by respondents.

**Table 2.** Descriptive Results of Teachers' Perceptions of Instructional Planning Support for Teaching Practices (N = 45)

| No | Teaching-Practice Dimension                                | Mean | SD   | Category |
|----|------------------------------------------------------------|------|------|----------|
| 1  | Instructional alignment (objectives–activities–assessment) | 2.73 | 0.99 | High     |
| 2  | Pedagogical coherence in lesson delivery                   | 2.98 | 0.92 | High     |
| 3  | Consistency in classroom instructional practice            | 2.76 | 0.96 | High     |
| 4  | Teacher professionalism and accountability                 | 3.02 | 0.87 | High     |
| 5  | Student engagement and learning outcomes                   | 2.78 | 1.11 | High     |
| 6  | Overall Mean                                               | 2.85 | 0.96 | High     |

Source: Research data, 2026

**Table 2** shows an overall mean of 2.85 for teachers' perceived support of instructional planning for teaching practices, categorized as High. Teacher professionalism and accountability recorded the highest mean (3.02), followed by pedagogical coherence (2.98),

student engagement and learning outcomes (2.78), instructional consistency (2.76), and instructional alignment (2.73). All five teaching-practice dimensions were categorized as High.

### Challenges in Implementing Instructional Planning

The third research question examined the key challenges teachers face in applying systematic instructional planning. **Table 3** presents the descriptive results for identified planning challenges.

**Table 3.** Descriptive Results of Challenges in Implementing Instructional Planning (N = 45)

| No | Instructional Planning Challenges                        | Mean | SD   | Category |
|----|----------------------------------------------------------|------|------|----------|
| 1  | Limited access to instructional materials and resources  | 2.78 | 1.06 | High     |
| 2  | Insufficient time for detailed lesson preparation        | 2.89 | 0.94 | High     |
| 3  | Lack of professional development in instructional design | 3.00 | 0.88 | High     |
| 4  | Difficulty integrating technology into planning          | 3.00 | 0.95 | High     |
| 5  | Large class sizes reducing planning effectiveness        | 2.84 | 0.98 | High     |
| 6  | Overall Mean                                             | 2.90 | 0.96 | High     |

*Source: Research data, 2026*

**Table 3** shows an overall mean of 2.90 for challenges in implementing systematic instructional planning, categorized as High. Lack of professional development in instructional design and difficulty integrating technology into planning recorded the highest means (3.00 each), followed by insufficient preparation time (2.89), large class sizes (2.84), and limited access to instructional materials and resources (2.78). All five identified challenges were categorized as High.

### Discussion

This pattern suggests that the participating teachers were more confident in delivering and reviewing instruction than in conducting needs analysis and developing instructional materials before teaching. The comparatively weaker engagement in the analysis and development stages highlights an important area for strengthening teachers' instructional planning competence. These preparatory stages require teachers to identify learners' needs, anticipate learning processes, select appropriate instructional resources, and translate these considerations into coherent lesson plans. Recent evidence indicates that teachers can struggle with lesson planning, particularly in systematically attending to students' thinking, learning trajectories, curriculum resources, and appropriate pedagogical approaches (Cevikbas et al., 2024).

The same review further indicates that lesson-planning competence can be strengthened through initial teacher education and continuing professional development. In the Somali context, these findings suggest that targeted professional learning focused on needs analysis and instructional-material development may help address the comparatively weaker engagement observed in these preparatory stages. Respondents also perceived instructional

planning as supporting their teaching practices, particularly teacher professionalism, pedagogical coherence, and instructional consistency. Recent empirical research similarly highlights lesson planning as an important component of teachers' professional practice and indicates that perceptions of planning competence can develop through practical teaching experience (Beckmann & Ehmke, 2023).

Recent case-study research further indicates that collaborative teacher learning and curriculum inquiry can strengthen professional accountability, reinforcing the role of professional responsibility in instructional practice (Hulme et al., 2024). In the present study, teachers likewise perceived structured instructional planning as supportive of professional and pedagogical practice. However, this descriptive survey did not test causality or directly measure student achievement. The results should therefore be interpreted as teachers' perceptions of how instructional planning supports their teaching practices rather than evidence that planning caused improvements in teaching or learning outcomes. The reported challenges indicate that systematic instructional planning depends not only on individual teacher competence but also on the professional and institutional conditions in which teachers work.

In particular, limited professional development opportunities, difficulties integrating technology, insufficient preparation time, large class sizes, and restricted instructional resources may constrain teachers' capacity to engage consistently in systematic planning, with recent research likewise identifying large class sizes among the difficulties teachers encounter in lesson planning (Pham et al., 2023). Recent evidence indicates that structured professional development can strengthen teachers' competencies and preparedness for instructional practice (Wahjusaputri et al., 2023). In resource-constrained educational settings, such support is particularly important because teachers must adapt instructional planning to limitations in time, technology, and available learning resources. Strengthening teachers' competence in educational technology is also relevant to emerging expectations for technology-supported teaching and professional development (Sufyan & Kurniawan, 2026).

A direct comparison with recent lesson-planning research reveals both convergence and contextual extension. Perceptions of lesson-planning competence developed through practical teaching experience (Beckmann & Ehmke, 2023), while persistent difficulties were identified across particular aspects of lesson planning, emphasizing the role of teacher education and professional development in strengthening planning competence (Cevikbas et al., 2024). The present findings partly confirm these patterns: Somali teachers reported generally adequate engagement in instructional planning but comparatively weaker engagement in the analysis and development stages. The findings therefore extend recent lesson-planning research by demonstrating a differentiated planning profile among in-service teachers in a post-conflict, resource-constrained educational context. Theoretically, these findings suggest that the ADDIE framework's sequential five-stage structure, while analytically useful, may not be uniformly enacted across educational contexts.

The differentiated engagement pattern implies that contextual constraints can selectively inhibit particular stages, warranting further attention to how instructional design models operate under resource and institutional limitations. This study contributes empirical evidence that Somali teachers demonstrate a distinct instructional planning profile, with

notably stronger engagement in implementation and evaluation stages than in analysis and development, a pattern not previously documented in post-conflict educational contexts using the ADDIE framework. Nevertheless, the purposive sample of 45 teachers and the reliance on self-reported perceptions limit generalization. Further research with larger samples, classroom observations, or mixed methods could examine how reported planning practices relate to observed instruction and student learning outcomes. Future studies could also examine how administrative guidance, peer collaboration, and resource availability shape teachers' engagement across the ADDIE stages. Comparative research across post-conflict or developing educational contexts could determine whether the differentiated planning profile observed in this study represents a broader pattern in resource-constrained settings.

## **CONCLUSION**

Somali teachers demonstrated a functionally adequate level of instructional planning engagement, with notably stronger performance in implementation and evaluation stages than in the preparatory stages of analysis and development within the ADDIE framework. Teachers perceived instructional planning as positively associated with their professional practice, pedagogical coherence, and instructional consistency. Resource constraints, insufficient professional development opportunities, and difficulties integrating technology were identified as the primary factors limiting more systematic planning engagement. These findings highlight the relevance of the ADDIE framework as an analytical lens for understanding instructional planning in post-conflict, resource-constrained educational contexts and underscore the need for contextually responsive institutional support to strengthen Somali teachers' planning competencies.

Sustained professional development focused specifically on the analysis and development stages of instructional planning is recommended, alongside institutional provision of adequate preparation time and improved access to instructional resources to strengthen instructional planning in resource-constrained settings. Curriculum developers and educational policymakers in post-conflict contexts should consider integrating structured planning frameworks such as ADDIE into pre-service and in-service teacher education programs. Future research with larger, more diverse samples, using mixed methods or classroom observation, would provide deeper insight into how instructional planning practices are enacted and how they relate to student learning outcomes.

## **AUTHOR'S NOTE**

The authors declare that there is no conflict of interest regarding the publication of this article. The authors affirm that the data and content of this article are free from plagiarism.

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