



Jurnal Pendidikan Agama Kristen (JUPAK)

Vol. 5 No. 2 (June 2025) p. 61 – 74

Jurnal Pendidikan Agama Kristen (JUPAK)

e-ISSN 2774-3861

<https://ejurnal.sttkadesiyogyakarta.ac.id/index.php/jupak>

p-ISSN 2774-6399



<https://doi.org/10.52489/jupak.v5i2.219>

Implementation Of The Flipped Classroom Learning Method In Rural Areas

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Recommended Citation

Turabian 8th edition (full note)

Banamtuan, et all (2025). "Implementation Of The Flipped Classroom Learning Method In Rural Areas". *Jurnal Pendidikan Agama Kristen (JUPAK)*, 5(2), (September 12, 2025): 61–74, accessed September 12, 2025, <https://doi.org/10.52489/jupak.v5i2.219>

American Psychological Association 7th edition

(Banamtuan et al, 2025, p.1)

Received: 07 May 2025	Accepted: 22 August 2025	Published: 12 September 2025
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Abstract

The Flipped Classroom model has shown effectiveness, especially during the COVID-19 pandemic, but its application remains limited in rural schools due to poor internet access, unstable electricity, and limited digital devices. This study examines the implementation of the model in rural contexts, aiming to propose strategies, identify challenges, and offer solutions. Using a qualitative literature review, the findings indicate that, despite infrastructural barriers, the Flipped Classroom can be adapted through proper planning, teacher training, resource provision, and stakeholder collaboration, thereby enhancing educational quality in underserved communities.

Keywords: Learning method; flipped classroom, rural

INTRODUCTION

Education is defined as a conscious and deliberate effort to create a learning environment and process through which learners can actively develop their potential. This includes spiritual strength, religious values, self-control, character, intelligence, moral integrity, and the skills necessary to participate in societal, national, and state life ([Law No. 20 of 2003 on the National Education System, 2014](#)). This provision implies that schools and educators bear the responsibility of actualizing these educational ideals through effective teaching practices. To realize these objectives—especially in the context of rapid societal transformation—appropriate and adaptive teaching methods are essential. Collaboration among schools, educators, students, and parents is crucial to ensure that the aims of education, as mandated by law, are achieved.

Learning methods refer to structured and systematic approaches employed to facilitate educational activities and achieve desired learning outcomes. The term *method* fundamentally means “a way” or “a means.” Thus, a learning method can be understood as a strategic process aimed at fulfilling specific instructional goals.

Given the fast-paced development of technology and the dynamic nature of contemporary society, the educational sector must remain responsive and adaptive. However, schools in rural areas often encounter distinctive challenges and constraints that require context-sensitive strategies, instructional media, and methodologies tailored to local needs.

However, schools in rural areas often face distinctive challenges that hinder the effective adoption of innovative learning models such as the Flipped Classroom. First, the digital divide remains a critical issue. Limited access to reliable internet connections and digital devices restricts students’ ability to engage with online materials, creating inequities compared to their urban counterparts ([Van Dijk, 2020](#)). Without adequate infrastructure, the very foundation of the flipped approach—independent preparation outside the classroom—becomes difficult to sustain.

Second, socioeconomic constraints exacerbate the problem. Many rural families lack the financial capacity to provide technological support at home, such as laptops, smartphones, or stable electricity, thereby limiting student participation. This situation is compounded by

parents' limited awareness of, or engagement with, new pedagogical methods, which reduces the effectiveness of home-based learning support.

Third, there are cultural and motivational challenges. Students in rural contexts may struggle with low learning motivation due to perceived irrelevance of formal education to their local economic realities. Furthermore, some parents adopt passive attitudes, delegating all educational responsibilities to schools. Such dynamics weaken the ecosystem of support needed to sustain active learning methods.

These challenges demonstrate that the implementation of the Flipped Classroom in rural areas cannot rely on a one-size-fits-all model. Instead, it requires context-sensitive strategies, such as offline learning resources, community-based study groups, and teacher training in adaptive instructional media. Without such tailored interventions, the flipped model risks exacerbating existing educational inequalities rather than reducing them.

In this regard, the present study explores the implementation of the Flipped Classroom model—an instructional approach that proved highly effective during the COVID-19 pandemic in urban contexts—and considers its potential for adaptation in rural schools, both under normal circumstances and during educational disruptions.

The Flipped Classroom is a form of blended learning that integrates synchronous (real-time, face-to-face) and asynchronous (independent, online) modes of instruction. In synchronous learning, students interact directly with teachers and peers, receiving immediate feedback. Conversely, asynchronous learning allows students to engage with digital content at their own pace, enabling flexible study schedules, participation through online discussions, and delayed but meaningful feedback from instructors or peers.

The flipped classroom requires students to study instructional materials at home before classroom sessions, based on tasks provided by their teachers. This approach is considered well-suited to the demands of the Industrial Revolution 4.0 and proved particularly effective during the pandemic period of 2020–2022.

A notable example of this method's success is found in the work of Doung-In, (2017), chemistry teachers at Woodland Park High School in Colorado, USA. They developed video lessons replicating classroom instruction to support students who were unable to attend in person. The results were positive—students could continue learning without falling behind. Eventually, even those attending regular classes utilized the videos to reinforce and deepen their understanding of the subject matter.

Based on this contextual background, the present study examines the application of the Flipped Classroom model in rural educational settings, identifies the challenges encountered, and proposes practical solutions to support its effective implementation.

METHOD

This study employed a qualitative literature review method. The process involved identifying the research focus, searching and selecting relevant academic sources (2015–2024), extracting data related to challenges and solutions in rural flipped learning, categorizing the

findings thematically, and synthesizing them descriptively. The results were then presented in a structured narrative to highlight both factual realities and practical implications.

RESULTS AND DISCUSSION

Implementing the Flipped Classroom Method in Rural Education Settings

The Flipped Classroom is a pedagogical model in which instructional content is delivered outside of class—typically through videos or other media—while classroom sessions are devoted to higher-order learning activities such as discussion, problem-solving, and critical debate Doungh-In, (2017). This approach shifts learning from passive reception to active engagement, encouraging students to interact with the material in more meaningful ways.

As a form of blended learning, the Flipped Classroom combines synchronous and asynchronous modes of instruction. Synchronous learning occurs in real-time, allowing direct interaction and immediate feedback between teachers and students, while asynchronous learning enables independent engagement with instructional content at a flexible pace (Lo & Hew, 2017). Through both modes, students are afforded opportunities to revisit content, pose questions, and participate in ongoing reflection.

The model aligns closely with the objectives of Indonesia's 2013 Curriculum, which emphasizes student-centered learning and the cultivation of 21st-century competencies: critical thinking, creativity, collaboration, and communication. Video-based content is commonly used, as it allows students to pause, review, and reinforce understanding. In rural areas, however, educators may substitute with alternative media—such as printed guides or preloaded offline devices—ensuring the model's principles are preserved despite infrastructural limitations.

Conceptually, the Flipped Classroom follows three phases: (1) Pre-Class Activities, where students independently access materials to build foundational knowledge; (2) In-Class Activities, where learners apply, analyze, and evaluate concepts through collaborative and teacher-guided exercises; and (3) Post-Class Reflection and Feedback, where students consolidate understanding and may produce creative outputs. These stages correspond to Bloom's Taxonomy, progressing from lower-order cognitive skills (remembering, understanding) in the pre-class phase to higher-order thinking (applying, analyzing, evaluating, and creating) during and after class (Anderson & Krathwohl, 2001).

To support implementation, teachers must design structured resources—such as short videos, guiding questions, and preparatory tasks—and optimize class time for interactive engagement and feedback. Educational platforms such as the Ministry of Education's *Rumah Belajar* and *TV Edukasi* provide accessible materials, though teachers may also develop original or adapted resources.

Despite its benefits, implementation in rural contexts faces challenges, particularly limited internet connectivity, inconsistent access to digital devices, and varying levels of digital literacy. These constraints necessitate contextual adaptations. Offline resources, community-based learning hubs, or low-tech solutions (e.g., USB drives or printed modules) can sustain the pedagogical integrity of the model while addressing infrastructural gaps.

Thus, while infrastructural disparities hinder uniform adoption, the Flipped Classroom can still be adapted to rural settings without compromising its student-centered ethos. By leveraging local resources and aligning with Bloom's cognitive framework, this model can enhance equitable access to active learning in underserved communities.

Contextualizing the Flipped Classroom for Rural Education

Implementing the Flipped Classroom model in rural educational settings requires a distinct and context-sensitive approach. The learning environment in these areas differs significantly from that in urban schools, particularly due to limited internet connectivity and technological infrastructure. Nonetheless, the core principles of the Flipped Classroom—shifting content delivery outside of class and maximizing active engagement during class—can still be preserved through creative adaptation.

For instance, when internet access is unreliable, teachers may distribute preloaded USB drives or DVDs containing instructional videos and digital readings, which students can review at home using shared devices or community facilities. Where electricity supply is inconsistent, schools can rely on printed modules or illustrated booklets to convey essential concepts before class. In some rural communities, learning circles can be formed, where students gather in small groups at a neighbor's house or community hall to study materials together prior to formal lessons.

During class sessions, teachers can then emphasize active learning activities such as group discussions, peer teaching, role-playing, or hands-on problem-solving exercises that reinforce the pre-studied materials. For example, students who previously watched a science experiment on DVD at home can replicate or discuss the process collectively in class, while those who read case studies beforehand can engage in debates or simulations under teacher guidance.

These adaptations demonstrate that even in offline or low-connectivity environments, the Flipped Classroom model can still thrive by prioritizing resourceful methods, community involvement, and student responsibility in the learning process.

Pre-Class Phase (Outside the Classroom)

In the absence of internet access, educators can prepare and distribute learning materials well in advance, such as printed texts, images, dialogues, short essays, news articles, or pre-recorded video content stored on CDs, flash drives, or other portable media. These materials should be provided at least one week prior to the in-class session, allowing students time to study at home. The objective is for students to remember and understand the foundational content before class ([Anderson & Krathwohl, 2001](#)).

Teachers may also leverage broadcast-based media such as educational television, provided students have access to TV at home. In such cases, teachers can share schedules for relevant educational programs and offer guidance on which segments to focus on. Accompanying worksheets or activity guides can be distributed to help students engage with the material meaningfully. Similar strategies were observed in rural India, where low-cost

media distribution supported flipped-style instruction in contexts with minimal digital infrastructure.

Students are expected to complete preparatory assignments independently, based on teacher instructions. This promotes deeper focus, especially on aspects of the material they find challenging, and supports their ability to develop problem-solving skills. One of the key strengths of the Flipped Classroom approach is that it fosters student autonomy: learners take responsibility for when, where, and how they study, with the option to revisit material as needed. This autonomy supports the principle of student-centered learning.

In-Class Phase (During the Classroom Session)

When students return to class, the focus shifts from passive content absorption to active learning and application. Classroom time is dedicated to higher-order cognitive activities such as applying, analyzing, and evaluating the material through collaborative projects, problem-solving tasks, presentations, role-plays, or group discussions.

Teachers play a crucial role in designing in-class sessions that are interactive and hands-on, ensuring that the learning experience is dynamic and engaging. While in-class time is devoted to collaborative tasks, activities that can be done individually—such as reading, observing, or interviewing—may be assigned as out-of-class work to maximize classroom interaction.

This structure allows teachers to better tailor instruction to individual student needs. By spending more time facilitating projects and group work, teachers gain deeper insight into students' understanding and can identify both strengths and learning gaps. This creates opportunities for personalized instruction and formative assessment ([Herreid & Schiller, 2013](#)).

Teachers are also responsible for encouraging students to come prepared, ask questions, and participate in discussions that provide formative feedback on their learning progress. These strategies aim to promote deep learning by moving students beyond memorization to analysis and synthesis of knowledge.

In the Flipped Classroom model, instructional emphasis is placed on students who require additional support, while students who have already grasped the material are encouraged to work independently or assist their peers—an approach known as peer tutoring. This not only reinforces their own understanding but also fosters collaboration and social learning. In this role, the teacher acts as a facilitator and guide, rather than a sole source of knowledge, accompanying students as they construct their own understanding and develop key competencies ([Vygotsky, 1978](#)).

Post-Class Phase: Evaluation and Creation

The final stage in the Flipped Classroom model involves evaluating students' understanding and encouraging them to engage in project-based or creative tasks that apply the knowledge acquired during the in-class learning phase. This stage represents the higher levels of Bloom's Taxonomy—Evaluating and Creating—and provides students with the opportunity

to synthesize and demonstrate their learning outcomes in meaningful ways (Anderson & Krathwohl, 2001).

At this point, the teacher—functioning as a facilitator—guides students in completing collaborative assignments or projects that reflect their comprehension of the material. For instance, students may be tasked with creating a group presentation, enacting a drama, or designing a thematic project that consolidates the lesson content. If class time is insufficient, the creation process can be extended to subsequent sessions, with clear communication from the teacher regarding expectations and timelines. According to Herreid and Schiller (2013), such project-based activities in flipped learning not only reinforce comprehension but also enhance higher-order thinking and creativity.

Below is an illustrative example of a weekly Flipped Classroom schedule adapted for a third-grade Christian Education (PAK) class in a rural elementary school context:

Example Schedule: Flipped Classroom for Grade 3 Christian Education (PAK)

Date	Activity	Description
Friday, May 5, 2023	Distribution of learning materials (CDs, flash drives, educational TV schedule)	Materials are given at the end of class for home study.
Monday, May 8, 2023	Access and study the assigned material at home	Students summarize key elements (what, where, when, how, why) related to the topic.
Tuesday, May 9, 2023	08:00–10:00 AM: Class discussion and Q&A	Students compare summaries, ask questions, and engage in group dialogue.
Wednesday, May 10, 2023	09:00–10:00 AM: Evaluation and project work	Students are grouped and begin working on thematic projects based on prior learning.
Thursday, May 11, 2023	Distribution of new materials (e.g., assignment to conduct interviews)	Home assignment: Conduct and document an interview on plant fertilization.
Friday, May 12, 2023	08:00–10:00 AM: Sharing interview results	Students present findings and discuss in class.
Monday, May 15, 2023	Final evaluation and continuation of project work	Students complete their group projects either in class or outside school hours.

This structured approach to learning offers several key benefits. Students gain greater self-confidence and take more ownership of their learning process. The autonomy to study at their own pace outside the classroom fosters independent learning skills. When encountering difficulties, students are encouraged to explore solutions on their own, cultivating problem-solving abilities and boosting their confidence in academic settings.

Empirical evidence from both the United States and several pilot schools in Indonesia supports the effectiveness of the Flipped Classroom model. For example, Fulton (2012) reported that students in U.S. schools using flipped learning demonstrated increased responsibility and engagement. In the Indonesian context, found that flipped learning in rural schools improved students' motivation, creativity, and collaborative skills despite infrastructural challenges. That students in flipped classrooms achieved significantly better academic outcomes and demonstrated higher levels of classroom interaction compared to those in traditional settings. Teachers also report increased opportunities for mentoring and personalized instruction, as class time is no longer dominated by content delivery but used for facilitation and guidance (Bishop & Verleger, 2013).

Challenges in Implementing the Flipped Classroom in Rural Areas: Teacher-Related Obstacles

Despite its pedagogical potential, the implementation of the Flipped Classroom model in rural regions of Indonesia is confronted with numerous obstacles, particularly those related to teachers' capacity, mindset, and external limitations. The following are the primary challenges encountered by educators:

1. Limited Access to Internet and Electricity in Remote Areas

Many rural and remote regions across Indonesia still suffer from inadequate internet connectivity and unreliable electricity supply. In such locations, the core infrastructure required to support online or blended learning—including the Flipped Classroom model—is simply unavailable. Consequently, teachers often resort to visiting students' homes to deliver instruction or provide learning materials. This approach, while resourceful, is not sustainable at scale and underscores the urgent need for improved digital infrastructure in underserved areas. The digital divide between rural and urban schools remains one of the greatest barriers to equitable access in education, particularly in developing countries.

2. Difficulties in Managing and Structuring Learning Content

According to *Law No. 14 of (2005) on Teachers and Lecturers*, one of the fundamental competencies teachers must possess is pedagogical skill—particularly the ability to manage and organize learning processes effectively. This includes the capacity to logically sequence material so that the relationship between concepts is clear and cohesive.

However, many educators struggle with designing learning trajectories suitable for a Flipped Classroom setting. The shift from a teacher-centered approach—characterized by lecture-based delivery and passive student participation—to an interactive, student-centered format requires a significant pedagogical transition that not all teachers are adequately prepared to make. Research by Doungh-In, (2017), pioneers of the Flipped Classroom, stresses that successful implementation requires teachers to develop strong skills in structuring learning activities that engage students in higher-order thinking, something that rural teachers often find challenging due to limited training opportunities.

3. Challenges in Adapting to Digital Media and Technology

The move toward technology-integrated education, including the adoption of the Flipped Classroom, demands rapid digital adaptation from all stakeholders, especially teachers. While many have traditionally delivered content through face-to-face instruction, the pandemic and subsequent educational shifts have required a transition to digital tools and virtual platforms. Unfortunately, a significant number of teachers face difficulties operating electronic devices, and some are resistant to adopting technology as a regular part of their teaching practice. This technological gap poses a serious barrier to effective implementation.

A study by Herliandry et al. (2020) on online learning during COVID-19 in Indonesia found that teachers in rural areas often lacked the necessary digital literacy and technological confidence, limiting their ability to fully utilize platforms required for flipped learning.

4. Perceived Workload and Increased Demands

The Flipped Classroom approach necessitates a higher degree of creativity, technological proficiency, and content preparation. Teachers are expected to produce pre-recorded video content, design modules, and facilitate in-class activities—all while managing administrative duties and lesson planning. These expanded responsibilities are often viewed as burdensome, particularly by educators who lack adequate support, training, or time to fulfill them effectively.

As noted by Mok (2014), teachers frequently report that preparing flipped learning materials requires significantly more time than traditional lecture methods, especially in the initial stages of implementation. Similarly, a study by Zainuddin and Halili (2016) highlights that educators in developing contexts perceive the increased workload as a critical barrier, thereby reducing their motivation to adopt the model.

5. Resistance to Change and Comfort with Traditional Methods

A significant obstacle is the presence of a fixed mindset among some teachers who are resistant to change and reluctant to step outside their pedagogical comfort zones. This resistance is especially apparent when teachers perceive new instructional models—such as creating and using learning videos—as complex or unlikely to succeed. Educators accustomed to traditional lecture-based methods may not feel equipped to adapt, especially during sudden shifts such as the COVID-19 pandemic. Many teachers who had long relied on passive learning strategies responded to these changes by delivering only minimal online instruction—for example, sending assignments via messaging apps like WhatsApp and waiting for students to submit their responses. Such practices result in limited engagement and reduced educational effectiveness, potentially compromising student learning outcomes and the overall quality of national education.

Nevertheless, these challenges can be overcome. Research shows that when teachers receive proper training and gain familiarity with the Flipped Classroom model—particularly regarding the use of instructional videos and blended learning tools—they tend to show increased enthusiasm and willingness to innovate (Lo & Hew, 2017). Adequate support,

professional development, and a shift in mindset are therefore critical to empowering educators to implement the model successfully.

Student and Parental Constraints in Implementing the Flipped Classroom Model

A. Student-Related Constraints

The effectiveness of the Flipped Classroom model relies heavily on student readiness, particularly in terms of infrastructure and motivation. In rural contexts, several obstacles often hinder students' engagement:

- 1. Limited Access to Devices**

Many students lack access to digital tools such as laptops, smartphones, or televisions required to view instructional videos. Schools may address this issue by providing offline materials, distributing printed modules, or encouraging collaborative group study within communities ([Herreid & Schiller, 2013](#)).

- 2. Unstable Internet Connectivity**

Poor or inconsistent internet access restricts students from engaging in online discussions, downloading assignments, or streaming video lessons, thereby reducing the continuity of flipped learning.

- 3. Frequent Power Outages**

Electricity interruptions, common in rural areas, further disrupt digital learning activities and scheduled study times, negatively affecting student performance.

- 4. Technical Difficulties**

Hardware limitations (e.g., outdated devices), software incompatibility, and low digital literacy often lead to difficulties in accessing learning platforms, causing delays and frustration ([Doung-In, 2017](#)).

- 5. Low Learning Motivation**

A lack of intrinsic motivation remains one of the most profound challenges. Contributing factors include heavy workloads, limited comprehension of content, minimal teacher interaction, and weak peer collaboration. These issues can diminish engagement and reduce overall learning outcomes ([Zainuddin & Attaran, 2016](#)).

B. Parental Constraints

Parental involvement is critical for the success of the Flipped Classroom, as much of the learning process occurs at home. However, several parental-related barriers commonly arise in rural contexts:

1. Limited Understanding of the Model

Many parents lack awareness of the goals and mechanisms of flipped learning, resulting in minimal support or engagement in their children's study activities ([Lai & Hwang, 2016](#)).

2. Time and Work Constraints

Busy work schedules and household responsibilities often prevent parents from supervising or assisting their children, especially in early education where guidance is essential ([Goodall & Montgomery, 2014](#)).

3. Passive Educational Attitudes

Some parents adopt a hands-off approach, assuming education is solely the responsibility of schools. This reduces follow-up at home and weakens the discipline and learning environment necessary for student success.

4. Lack of Value-Based Guidance

Beyond academics, some parents fail to nurture values such as honesty, perseverance, and responsibility. Overemphasis on academic results without moral formation may hinder students' holistic development as individuals of integrity ([Epstein, 2011](#)).

Solutions for Addressing Implementation Challenges

To ensure the effective adoption of the Flipped Classroom model, especially in rural areas, a range of strategic interventions must be introduced. These include enhancing teacher competencies, improving access to learning devices, and strengthening collaboration with parents. The following are key recommendations

Teacher Training and Professional Development

The first and most fundamental step is to initiate training programs aimed at transforming teachers' mindsets regarding the benefits and effectiveness of the Flipped Classroom model. Resistance to pedagogical innovation often stems from entrenched beliefs and traditional teaching habits. Therefore, paradigm-shifting training is essential to encourage openness to change and innovation.

Subsequent training should focus on practical skills related to instructional design and media production. Teachers can be equipped to create instructional videos using accessible tools such as Microsoft PowerPoint, which can be converted into screencast videos using screen recording software like Camtasia, available as a free trial. Through this method, teachers can simulate classroom instruction by adding narration and annotations to slides, which are then recorded into educational videos. Additionally, teachers can leverage local resources—such as plants, animals, natural environments, community interviews, or study groups—as content for video-based instruction, making learning more contextual and relevant.

Provision of Digital Learning Devices

Access to appropriate digital tools is critical to the success of the Flipped Classroom model. Students typically require a computer, laptop, smartphone, or tablet connected to the internet to access video-based content. In cases where such access is limited or unavailable, schools can proactively support students by pre-downloading educational videos and distributing them in alternative formats, including CDs, USB flash drives, or shareable soft files via messaging platforms such as WhatsApp.

Moreover, students can be encouraged to engage in peer-assisted learning by forming small study groups where devices are shared and collaboration is promoted. This approach not only maximizes the use of limited resources but also enhances students' social and cognitive engagement with the material.

Parental Engagement and Program Socialization

Active parental support is vital for sustaining the Flipped Classroom approach, especially when learning activities occur outside of school hours. To this end, schools should organize orientation and socialization sessions to explain the structure, objectives, and expected outcomes of the program. By building awareness and understanding, schools can foster stronger partnerships with parents, encouraging them to play a more active role in monitoring and supporting their children's learning at home.

When parents are informed and aligned with school initiatives, they are more likely to assist with supervision, provide necessary materials, and motivate their children to participate consistently. In turn, this cooperative environment significantly improves the feasibility and success of flipped learning, particularly in rural educational settings where school resources may be limited.

CONCLUSION

Based on the analysis presented, the implementation of the Flipped Classroom model in rural areas follows a three-phase instructional structure—pre-class, in-class, and post-class—each of which fosters active, student-centered learning. Despite its pedagogical promise, significant challenges emerge from multiple stakeholders: teachers may lack the technical skills or resources, students often face limited access to devices or internet connectivity, and parents are frequently uninformed or uninvolved in the process. Addressing these barriers requires targeted interventions, including teacher training to shift pedagogical mindsets and enhance skills in digital material development, the provision of tools and media access to ensure equitable learning opportunities, and structured parental engagement to build shared understanding and support. Ultimately, this study underscores the need for schools, educators, students, and parents in rural contexts to embrace innovation and sustain collaborative partnerships, as only through collective openness to change and commitment to improved practices can the Flipped Classroom's potential be fully realized in advancing effective, inclusive, and future-oriented education.

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