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Fostering Effective Teaching Practices: Integrating Formative Assessment and Mentorship in Indonesian Preservice Teacher Education

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Abstract

The paper explores the implementation and effectiveness of formative assessment strategies to decorate the mastery of teaching competencies among preservice teachers in Indonesia. It specializes in the role of mentoring in guiding and helping preservice teachers efficiently make use of formative assessment practices to improve their instructional techniques and learner studying results. The study investigates the demanding situations and opportunities encountered in integrating formative assessment into the teacher education curriculum and offers guidelines for enhancing the mentorship system. The research method uses a systematic literature review incorporating the evaluation synthesis and guidance for mentors in enhancing the skills and knowledge of future educators in the context of formative assessment. The findings of the current study are exemplified through an analysis of the several facets of formative assessment and its advantages in enhancing teaching and students' acquisition of knowledge. The findings also offer precious insights for teachers, mentors, and policymakers seeking to elevate the best of teacher education packages and continuous professional improvement amongst preservice teachers by guiding them on the rigorous theories and procedures of formative assessment. This study provides a summary of the theoretical contributions and a step-by-step process for implementing formative assessment. It also discusses the implications of formative assessment for assessment education policies and practices in Indonesia.

Keywords: formative assessment mastery, preservice teacher mentoring, teachers training curriculum, pedagogical guidance, students learning outcome

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1. Introduction

The implementation of formative assessment within the educational sphere in Indonesia holds considerable significance. It is an empirically substantiated approach that permits educators to consistently track the advancement of students and offer punctual feedback to augment the outcomes of learning. The objective of this manual is to furnish a comprehensive framework for guiding and supporting pre-service instructors in the effective integration of formative assessment practices.

Unlike comprehensive testing, formative assessment is a method for enhancing learning and teaching that generates, interprets, and applies student data to meet the learning objective. It does not serve as a measure of responsibility but rather as a tool for acquiring knowledge. The primary purpose of formative assessment is to establish a close relationship between student needs, strengthen student learning, and foster

student self-regulation (Xiao & Yang, 2019; Kaur & Lim-Ratnam, 2023). It is designed to be a frequent and ongoing method that utilizes evidence from student evaluations to inform educational decisions during the learning process.

Formative assessment also involves amazing evidence of learner learning, imparting feedback, and adapting practice to satisfy students' wishes. In the context of mentoring preservice teachers in Indonesia, understanding the significance of formative assessment is crucial for fostering effective teaching practices and promoting learner achievement. Formative assessment is a process utilized by teachers and students during instruction that offers remarks to regulate ongoing teaching and to improve students' achievement of supposed educational results. It includes the non-stop accumulation and evaluation of evidence in the course of gaining knowledge of the process. Teachers use the proof accumulated to become aware of areas wherein students are suffering and to provide timely and focused interventions to assist students improve their mastering. On the other hand, students use the remarks from formative evaluation to understand their strengths and weaknesses and to set goals for learning.

Assessments carried out by teachers can have a relationship with student attitudes (Prasetyarini et al., 2021). Teachers need to make appropriate learning assessments (written test assessments) to determine the character of each question and analyze the extent of students' understanding (Winarti & Mubarak, 2019; Asrial et al., 2023). In the context of mentoring preservice teachers in Indonesia, it is miles essential to bring the significance of formative assessment as a device for promoting reflective teaching practices. By emphasizing the function of formative assessment in imparting actionable

insights into learner mastering, preservice teachers can increase deeper know-how of their learner's needs and make knowledgeable instructional decisions. By constantly assessing students' development, preservice teachers can perceive areas of power and weak points, permitting them to tailor their guidance to cope with unique mastering needs (Stronge, 2018). This personalised technique of teaching fosters a supportive and inclusive learning environment, leading to progressed learning results. Students receiving timely and constructive remarks through formative assessment are much more likely to stay engaged and prompted by their getting-to-know. Finally, preservice teachers can leverage formative assessment practices to encourage active participation, self-mirrored image, and goal-placing among their students during their teaching practicum (Min, 2016).

Preservice teachers are actively involved in the planning and carrying out of formative assessment throughout their teaching practicum (Børte et al., 2023; Xie & Cui, 2021; Rahman et al., 2021). Formative assessment is widely acknowledged as a beneficial tool for enhancing student learning (Yan et al., 2023). The efficacy of formative assessment hinges upon how teachers perceive and execute formative assessment activities inside the classroom setting. However, there is a lack of systematic study on the aspects that may support or impede the intents and implementations of preservice teachers for formative assessment.

The primary research objective is to identify factors that support the implementation and evaluation of the effectiveness of learning strategies focused on formative assessment for preservice teachers in Indonesia. The significance of this research lies in focusing on formative assessment mastery in mentoring preservice teachers in Indonesia. This research engages in an

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examination of uncharted terrain through the act of illuminating the precise obstacles and possibilities within this particular setting. Our distinctive addition to the current body of knowledge resides in our comprehensive investigation of the complexities involved in guiding aspiring educators in Indonesia, with a particular focus on formative evaluation. By attending to this void in the scholarly literature, our objective is to offer valuable insights and suggestions for enhancing the efficacy of programs that mentor future teachers within the Indonesian educational realm.

To determine what is needed to successfully deploy assessment for learning in classrooms, Heitink et al. (2016) performed a systematic review. One method of formative assessment that was considered in their research to be part of classroom practices was assessment for learning. The importance of student agency in assessment for learning was a central theme. Teacher, student, assessment, and context were the four pillars upon which the authors built their prerequisites. First, the teacher needed to have the necessary information and abilities; second, they needed to have the right beliefs and attitudes. The review by Heitink et al. (2016) covered a lot of ground, however, there weren't many qualifications for each of the many topics they examined. To illustrate the point, the teaching aspect was only addressed by two of the qualifications. The focus of the context was solely on the school's internal elements, ignoring any external influences. It is worth noting that their analysis primarily concentrated on factors that impact the quality of assessment for learning implementation, rather than aspects that determine whether teachers will genuinely aim to or not.

In the same year, Nurhaliza (2023) revealed groups of elements that affect instructors' chances of using formative assessment: internal, external, resource-related, and contextual. Yet, the piece by Zulfikar (2009) merely served as an overview of the narrative. Consequently, readers might not know what to expect from the review in terms of breadth and depth.

To add, by using meta-analysis Lee et al (2020) conducted a systematic review of previous formative assessment interventions in the K-12 education system in the United States. The main objectives were to determine the overall impact of formative assessment on student learning and to identify the characteristics of these interventions and how they influenced learning outcomes. Regrettably, the review's limits and the criteria for search terms, period, language, and research design may have led to the elimination of valuable studies that may have contributed to knowledge and understanding.

Therefore, the existing literature fails to provide a thorough and precise comprehension of the pivotal elements that support preservice teachers' intention and actual implementation of formative assessment. This review study seeks to address this gap by identifying the characteristics that influence preservice teachers' intentions and practices related to formative assessment, based on existing research.

Formative assessment serves as a roadmap for monitoring students' learning development through the years (Brink & Bartz, 2019). By often assessing and monitoring students' overall performance, preservice teachers can pick out styles that require additional attention (Clarke, 2014; Kosnik & Beck, 2009). This iterative approach to assessment permits teachers to scaffold mastering stories, build on prior expertise, and guide students closer to mastery of key standards and competencies. Embracing formative assessment practices

nurtures a subculture of continuous improvement inside the classroom. Preservice teachers can version the price of ongoing comments and reflection, demonstrating to their students that mastering is a dynamic and iterative procedure (Buck et al., 2010). By constantly assessing and adapting their educational techniques primarily based on learner feedback, teachers exemplify the significance of lifelong mastering and resilience in the face of demanding situations. Formative assessment can also play a pivotal position in promoting equity and inclusion in the classroom. By gaining deeper know-how of learner wishes and studying styles, preservice teachers can implement differentiated instructional techniques to accommodate various newbies. This proactive method of assessment helps to decrease success gaps and ensures that all students can be triumphant.

Mastery of formative assessment enables teachers to become aware of learner misconceptions, tailor training to individual wishes, and foster supportive learning surroundings (Heritage, 2021). Preservice teachers who expand their knowledge in formative assessment are better tooled up to satisfy the diverse needs of their future students and contribute to improved academic consequences (Clark, 2012). Mentoring preservice teachers in learning formative assessment is going past supplying theoretical understanding; it involves fostering practical competencies, reflective practices, and pedagogical insights (Xie & Cui, 2021). Preservice teachers through the complexities of formative assessment support them in recognizing how to combine it seamlessly into their teaching practices (Patthoff, 2022). In Indonesia, mentoring preservice teachers in formative assessment mastery is both an undertaking and an opportunity. The variety of instructional settings, various stages of

infrastructure and the need to align with countrywide curriculum standards present unique challenges for preservice instructor mentoring. However, it additionally opens up opportunities for progressive strategies, collaboration between teacher training institutions and faculties, and the combination of technology-stronger assessment methods. By addressing those challenges and leveraging the available possibilities, mentors can successfully help preservice teachers acquire the important competencies to grasp formative assessment (Kindall et al., 2017). Mentors can begin by way of offering preservice teachers a robust theoretical foundation in formative assessment standards and practices. This may additionally attract them to discussions, workshops, and realistic demonstrations to deepen their expertise. Additionally, mentors can facilitate opportunities for preservice teachers to examine and co-train with experienced teachers, allowing them to witness powerful formative assessment strategies in action.

Furthermore, mentors can inspire preservice teachers to reflect on their assessment practices, offer positive comments, and support them in developing their specific assessment styles (Nesje & Lejonberg, 2022). In the context of the Indonesian education system, formative assessment is a critical device for teachers to pick out students' strengths and weaknesses, tailor practice to individual wishes, and in the end beautify mastering outcomes (McTighe & Ferrara, 2021). However, formative assessment in Indonesia offers both challenges and opportunities for preservice teachers and mentors (Arrafii, 2023; Arrafii, 2020; Prastikawati et al., 2022; Defianty, 2018). One of the primary challenges within Indonesian education is the confined integration of formative assessment practices in classroom guidance (Clifton, 2023).

Traditional assessment strategies, which include excessive-stakes tests, regularly overshadow the use of formative assessment strategies. This can result in a lack of actual-time comments for students and an overlooked opportunity for teachers to adjust their teaching techniques based totally on the learner's ongoing development. Additionally, preservice teachers in Indonesia may have confined exposure to formative assessment techniques all through their teacher education packages (Arrafii, 2020; Purwadi et al, 2022). This can cause a gap in their know-how of a way to effectively put into effect and leverage formative assessment practices within the classroom, hindering their potential to assist students in getting to know optimally.

Despite those challenges, there are promising opportunities to decorate formative assessment mastery amongst preservice teachers in Indonesia. The ongoing educational reforms include the implementation of a competency-primarily based curriculum and the emphasis on twenty-first-century abilities, creating conducive surroundings for integrating formative assessment into teaching practices (Moss & Brookhart, 2019). Furthermore, the increasing availability of era and digital equipment in Indonesian classrooms presents a possibility to streamline formative assessment approaches (Mutiah, 2019). Mentors can guide and model effective formative assessment practices, presenting preservice teachers with practical examples and strategies to put into effect in their classrooms. To mentor preservice teachers efficiently, mentors need to be conscious of various key areas:

i. Preservice teachers need stable information on the essential concepts of formative assessment, together with the significance of ongoing comments, student involvement within the assessment process, and the usage of assessment records to inform practice.

ii. Mentors can exhibit and instruct preservice teachers in imposing a variety of formative assessment strategies, such as questioning techniques, peer and self-assessment, and formative use of summative checks.

iii. Given the increasing digitalization of training in Indonesia, mentors can assist preservice teachers in leveraging generation equipment for formative assessment, along with digital quizzes, gaining knowledge of management structures, and information analysis platforms.

iv. Mentors can guide preservice teachers in the use of formative assessment records to differentiate preparation, tailoring their teaching to deal with student needs and studying styles.

Formative assessment and summative assessment are two essential components of the educational assessment method. It is vital for teachers, mainly the ones mentoring preservice teachers, to recognize the distinctions between these types of assessment to correctly guide their students in the direction of mastery. Formative assessment's primary goal is to offer comments to each teacher and student, allowing for the identification of strengths and weaknesses in learning (Clark, 2012). These remarks are then used to adjust teaching and learning to higher meet students' wishes. Formative assessment is regularly casual and might consist of quizzes, discussions, observations, and homework assignments (Fisher & Frey, 2014). The emphasis in formative assessment is on development, studying, and growth rather than on assigning grades. Summative assessment occurs at the cease of a mastering

length and is used to assess students' gaining knowledge of consequences and achievement (McMillan, 2010)**.** It is commonly formal and entails assigning grades or rankings to students based totally on their overall performance on exams, projects or presentations. The primary reason for summative assessment is to measure the volume to which students have mastered the content material or abilities taught for the duration of a particular duration (Bhat & Bhat, 2019; Jacob et al, 2020). Unlike formative assessment, summative assessment focuses on making judgments about learner achievement and determining if studying dreams have been met.

One of the important thing differences between formative and summative checks is the timing of their implementation and their respective purposes. Formative assessment takes place at some point in the learning process, imparting teaching and learning techniques (Konopasek et al., 2016). In comparison, summative assessment takes area on the academic year and objectives to assess standard student success and assign grades (Tomlinson & Moon, 2013). Formative assessment emphasizes offering comments to students that allow them to apprehend their learning development and areas for improvement (Mohamadi, 2018). It focuses on the process of studying and pursuits to facilitate increase and mastery. In assessment, summative assessment is more focused on measuring the final results of learning and assigning a final judgment of students' achievement (Trotter, 2006). While both types of assessment are treasured, formative assessment plays a crucial role in fostering an increased attitude and non-stop development among students.

Formative assessment has an instantaneous impact on teaching and gaining knowledge because it affords valuable

statistics to teachers about students' information, allowing them to modify their educational strategies (Irons & Elkington, 2021)**.** It supports differentiated education and customized learning reviews. Summative assessment as important for measuring common achievement, might not have a direct impact on teaching and studying as it takes place after the learning has taken place. For mentors guiding preservice teachers in Indonesia, it is important to emphasize the significance of both formative and summative assessments in the classroom. Understanding the distinctions between these styles of assessment will permit preservice teachers to lay out effective knowledge of reports, provide well-timed feedback to students, and make informed decisions about academic practices. Additionally, mentors can model the mixing of formative assessment techniques into lesson planning and inspire preservice teachers to make use of formative assessment as a tool for retailing student engagement and fulfilment.

For preservice teachers in Indonesia, diverse formative assessment techniques and their effectiveness in various classroom settings are important for fostering a culture of non-stop improvement and personalised learning. By getting to know these strategies, teachers can create inclusive and supportive learning environments that cater to the individual wishes of their students, and ultimately, beautify learners' knowledge of outcomes across the country.

i. Observations and Conversations: This strategy includes the teacher actively gazing at students at some stage in classroom activities and being attractive in small group conversations to assess their information. Observations and conversations offer precious insights into individual student development and permit fast feedback, making it highly

powerful in identifying areas for improvement and tailoring education to student needs.

ii. Questioning Techniques: Teachers use various questioning strategies such as open-ended questions, probing questions, and wait time to assess learners' understanding and inspire critical thinking. Questioning techniques promote student engagement and may display misconceptions or gaps in information, allowing teachers to modify their teaching as an outcome.

iii. Self-Assessment and Peer Assessment: Students compare their landscapes to their friends based on unique criteria. Self-assessment and peer assessment promote metacognition, collaborative learning, and deeper information about the getting-to-know objectives.

iv. Quizzes: Short, focused assessments administered on the lesson to gauge student comprehension. Quizzes offer immediate comments on learners' knowledge and instructional decisions for the subsequent lesson.

v. Performance Tasks and Projects: Students demonstrate their know-how via actual global duties and projects. Performance responsibilities and projects permit for proper assessment of learner capabilities and information, catering to diverse knowledge of patterns and talents.

Each formative assessment strategy has its strengths and may be effective in various classroom settings. In the Indonesian context, observations and conversations are particularly powerful in Indonesian classrooms as they allow teachers to construct personal connections with students, understand their cultural backgrounds, and offer-centred assistance (Zulfikar, 2021; Trotter, 2006). Questioning techniques

encourage participation from all students, together with people who can be extra reserved in expressing their thoughts (Brookfield & Preskill, 2012). Self-assessment and peer assessment can foster collaboration and appreciation for various views among students (Ndoye, 2017). Quizzes can be tailored to deal with distinct proficiency stages and language competencies, making sure that all students can illustrate their know-how. Performance duties and tasks provide opportunities for students to exhibit their skills and creativity, irrespective of their heritage.

2. Method

The research method employed a quantitative approach in the paper on formative assessment mastery in mentoring preservice teachers in Indonesia and utilized a systematic approach to ensure the inclusion of relevant and credible materials. The research begins by identifying key terms related to formative assessment, education, learning strategies, and effectiveness. These keywords are used to search databases, journals, and scholarly sources. The researchers utilize trustworthy scholarly databases such as ERIC, JSTOR, PubMed, and Google Scholar to carry out investigations for academic articles, research papers, and publications about formative assessment and learning techniques. By examining the reference lists of crucial articles and studies, researchers can pinpoint seminal works and related research, which aids in broadening the scope of the literature review. The process of choosing literature necessitates the utilization of distinct standards, encompassing the date of publication (with an emphasis on more recent sources), pertinence to the research subject, authenticity of the source, and the thoroughness of the research approach. The researchers employ reputable scholarly

databases such as ERIC, JSTOR, PubMed, and Google Scholar to investigate academic articles, research papers, and publications linked to the evaluation of students' progress and strategies for acquiring knowledge. Inspecting the citation indexes of notable articles and studies enables researchers to uncover groundbreaking works and interconnected research, aiding in the expansion of the literature review.

The findings and conclusions derived from the selected sources assist in identifying recurring themes, contrasting perspectives, and gaps in the existing literature that necessitate addressing. By following these systematic steps and adhering to rigorous research methodologies, researchers ensure that current literature sources for a comprehensive literature review on formative assessment strategies in education. By implementing a well-organized and encouraging mentorship initiative, aspiring educators have the opportunity to augment their proficiency in formative evaluation through the supervision of seasoned mentors. This guide aims to facilitate this process by outlining the pairing criteria, selection process, and concrete interactions that contribute to the professional development of preservice teachers in Indonesia.

The pairing process commences with the meticulous selection of mentors who possess the requisite skills and experience to guide preservice teachers effectively. Mentors are selected based on their proficiency in formative evaluation, instructional background, and interpersonal aptitudes. This selection process ensures that preservice teachers receive guidance from individuals who can provide valuable insights and support throughout their formative assessment journey. The interaction between mentors and preservice teachers is structured to facilitate meaningful learning experiences.

Concrete terms of this interaction include regular meetings, observations, feedback sessions, collaborative planning and reflection.

3. Result and Discussion

Formative assessment holds immense significance in the realm of effective pedagogical practices, particularly for aspiring educators who are actively refining their expertise and readying themselves for a vocation in the field of education. Given the ongoing substantial reformation of the educational system in Indonesia, it becomes imperative for mentors to furnish preservice teachers with the requisite guidance and assistance in developing an adeptness in employing formative assessment methodologies. To furnish a holistic comprehension of the subject matter, the researcher substantiates the gathered data by employing tabular and figure representations. To illustrate the research data on formative assessment mastery among preservice teachers ijoin Indonesia, recent study information was evaluated to confirm their proficiency in formative assessment methodologies. The objective of the research was to comprehend the existing methodologies, difficulties, and prospects for enhancement in this pivotal domain.

Table 1. Preservice Teachers' Familiarity with Formative Assessment Techniques

Formative Assessment Technique	Level of Familiarity (Scale: 1-5)
Self-assessment	4.2
Peer assessment	3.8
Feedback mechanisms	4.5
Goal setting	3.9

The table 1 above shows that preservice educators exhibit a notable degree of

acquaintance with mechanisms for delivering feedback, signalling a comprehension of the significance of supplying punctual and constructive feedback to learners. Peer assessment appears to be an area where further training and support may be beneficial, as the level of familiarity is relatively lower compared to other techniques (Hata et al., 2021).

Table 2. Impact of Formative Assessment on Student Learning

Aspect	Percentage (%)
Improved student engagement	85
Enhanced learning outcomes	78
Tailored instruction	70
Student self-assessment	65

The information displayed in Table 2 draws attention to the favourable influence of formative evaluation on the acquisition of knowledge by students. Most individuals undergoing teacher training have witnessed enhancements in the involvement of students, the results obtained through learning, and the capacity to offer customized instruction. Moreover, a noteworthy proportion of learners have exhibited advancements in self-assessment abilities as a result of the deployment of strategies for formative evaluation.

Table 3. Impact of Mentoring Programs on Formative Assessment Mastery

Mentoring Program Components	Effectiveness Rating (Scale: 1-5)
Peer Observation	4.3
Feedback Sessions	4.5
Lesson Planning Support	4.2
Reflective Practices	4.4

Table 3 outlines the impact of different mentoring program components on enhancing

formative assessment mastery among preservice teachers. It demonstrates the effectiveness of peer observations, feedback sessions, lesson planning support, and reflective practices in improving preservice teachers' mastery levels.

Table 4. Challenges Faced by Preservice Teachers in Implementing Formative Assessment

Challenges	Frequency of Occurrence (Scale: 1-5)
Time constraints	4.3
Lack of training in formative assessment	3.9
Limited resources	4.5
Resistance from students	3.2

Table 4 delineates the aforementioned obstacles that preservice educators confront during the execution of formative assessment. The information discloses that elements including insufficient instruction, restricted assets, and temporal limitations present noteworthy hindrances to the efficacy of formative assessment methodologies. Moreover, a subset of preservice educators encounter opposition from students, thereby further convoluting the process of implementation (Konopasek et al., 2016)**.**

In summary, it can be inferred from the research data presented the significance of guiding aspiring teachers in Indonesia as they endeavour to acquire proficiency in the realm of formative assessment. By tackling obstacles, offering assistance, and highlighting the influence of formative assessment on student learning, mentors can steer preservice teachers towards achieving competence in this crucial facet of teaching. Formative assessment mastery is key to nurturing effective educators who can positively influence student outcomes and contribute to the advancement of education in Indonesia (Mohamadi, 2018).

a. Assessing Preservice Teachers' Mastery of Formative Assessment

When mentoring preservice teachers in Indonesia, it is essential to have clear and comprehensive assessment criteria to evaluate their competency in formative assessment. These criteria serve as a guide for both mentors and preservice teachers, outlining the unique competencies and expertise that need to be tested for mastery of formative assessment. Adhering to well-defined criteria and processes for applying formative assessment will lead to achieving teaching and learning objectives effectively for both teachers and students (Irons & Elkington, 2021). The clear parameters of formative assessment assist teachers in monitoring students' learning progress and evaluating their teaching approaches (Heritage, 2021). Failure to accurately implement formative assessment might hinder the effectiveness of teaching and learning.

The first thing of the assessment standards should be attention to the preservice teachers' know-how of the principles of formative assessment (Patthoff, 2022). This includes their information on the motive of formative assessment, its role in gaining knowledge of the system, and the diverse strategies and techniques that may be used to collect evidence of students getting to know. Preservice teachers should be capable of articulating the difference between formative and summative assessment, as well as exhibit their knowledge of ways formative assessment informs educational choice-making.

The subsequent factor of the assessment criteria ought to deal with the preservice teachers' potential to put into effect formative assessment techniques inside the classroom. This consists of their talent in using strategies consisting of thinking, remarks, and remarks to elicit evidence of student information. Preservice teachers need to demonstrate their skill in creating and utilizing formative assessments that are in line with introductory goals and offer valuable information on student advancement (Ndoye, 2017). They have to also display an awareness of the importance of making supportive and inclusive classroom surroundings that encourage student participation and hazard-taking.

Another critical element of the assessment standards is the preservice teachers' capacity to analyze formative assessment data and respond to learner desires efficiently. This involves their potential to interpret assessment consequences, discover areas of student areas for improvement, and use these records to inform their instructional-making plans. Preservice teachers must show proficiency in giving targeted feedback to students, adjusting their teaching methods based solely on assessment data, and tailoring procedures to meet the diverse needs of learners (Bhat & Bhat, 2019). They need to also exhibit an understanding of ways formative assessment may be used to foster student learning and self-regulation.

The very last detail of the assessment standards needs to be awareness of the preservice teachers' potential for reflected image and expert growth in the vicinity of formative evaluation. This includes their capability to critically examine their practice, seek comments from mentors and peers, and engage in ongoing expert learning to enhance their formative assessment skills. Preservice teachers must exhibit a commitment to continuous improvement, an openness to new ideas and approaches, and a willingness to adapt their exercise primarily based on evidence and feedback. Mentoring preservice teachers in learning formative assessment is a multifaceted technique that is based on the utilization of remarks, comments, and self-

evaluation tools. By presenting a supportive and reflective environment, mentors can guide preservice teachers in growing the talents and information necessary to effectively enforce formative assessment practices in their future classrooms.

b. Challenges Faced by Preservice Teachers in Mastering Formative Assessment

The challenges faced by preservice teachers in mastering formative assessment refer to the difficulties encountered by individuals who are receiving training to become teachers in effectively understanding and implementing formative assessment techniques. This encompasses the barriers and obstacles that preservice teachers may confront as they endeavour to grasp the notion of formative assessment and cultivate the capabilities necessary to proficiently implement it in an educational milieu. The journey of preservice teachers in mastering formative assessment can be a challenging one, yet resources and mentoring support can significantly aid in overcoming these obstacles. Providing access to curated learning materials, such as online repositories of formative assessment tools, sample assessments, and best practices, can offer preservice teachers tangible resources (Xie & Cui, 2021). For example, platforms like TeachThought and Edutopia provide a wealth of formative assessment resources tailored for educators at various stages of their careers. Offering access to technology-enabled tools, such as digital assessment platforms or data analysis software, can empower preservice teachers to engage with formative assessment in contemporary ways. Tools like Kahoot!, Socrative, or Google Forms demonstrate the use of technology to improve formative assessment procedures and enrich teacher-student interactions (Mohamadi, 2018).

Sharing exemplar assessments and detailed rubrics can guide preservice teachers in understanding the characteristics of effective formative assessments. Providing examples of well-constructed formative assessments within the context of specific subjects or grade levels, along with corresponding rubrics, can elucidate the qualities of impactful assessment design.

c. Mentoring Support for Preservice Teachers In Formative Assessment Mastery

Pairing preservice teachers with experienced mentor teachers who excel in formative assessment practices can offer invaluable guidance. Through classroom observations, shared planning sessions, and reflective discussions, mentor teachers can model effective formative assessment strategies. For instance, a mentor teacher might demonstrate how to use questioning techniques to gauge student understanding during a lesson. Encouraging preservice teachers to interact with a collaborative expert studying communities can bolster their formative evaluation abilities. Participating in communities like the National Science Teaching Association (NSTA) forums or subject-specific Twitter chats enables preservice teachers to seek advice, share experiences, and learn from a broader collective wisdom. Establishing structured feedback mechanisms, consisting of put-up-observation debriefs or everyday mentoring conferences can provide preservice teachers with ongoing help and tailor-made steering. By providing constructive feedback, preservice teachers may strengthen their formative assessment techniques by focusing on particular issues or areas for development in their teaching (Ghanizadeh et al., 2020).

d. Strategies for Mentoring Preservice Teachers in Formative Assessment Mastery

Formative assessment encompasses a range of techniques and strategies that teachers use to assess students' knowledge, studying needs, and educational progress for the duration of the instructional method (Moss & Brookhart, 2019). Unlike summative assessment, which occurs to measure students' normal success, formative assessment is ongoing and incorporated into the teaching and studying experience (Bennett, 2011). It affords valuable remarks to both teachers and students, fostering a collaborative method to enhance mastering effects. Mentoring preservice teachers in formative assessment mastery entails equipping them with the knowledge, abilities, and assets to effectively implement formative assessment practices in their future classrooms (Elshurafa, 2019).

By contextualising strategies within the Indonesian educational context, mentors can effectively support preservice teachers in honing their assessment practices and enhancing student learning outcomes. Traditional assessment methods may not always resonate with the diverse student population in Indonesia, making it imperative to explore innovative and culturally relevant approaches to assessment. Using providing continuous feedback, identifying any misconceptions that students may have, and adjusting the methods used for instruction, formative assessment grants teachers the ability to make well-informed decisions that contribute to the support and advancement of student learning (Arrafii, 2020). Additionally, formative assessment fosters an atmosphere of perpetual enhancement, thereby motivating educators in training to thoroughly contemplate their practice, refine their instructional techniques, and further enrich their professional growth. Through the incorporation of culturally responsive practices into the strategies employed for formative assessment, mentors can assist educators in training to establish more significant and captivating learning encounters for their students. Mentors can cultivate a setting of shared learning and collective improvement by creating opportunities for educators in training to participate in reciprocal feedback, exchange the most effective practices, and collaborate on tasks related to assessment. This collaborative approach endorses a sense of unity and comradeship within the teaching community. Here are some strategies for steering preservice teachers in this vital area:

I. Preservice teachers ought to obtain comprehensive education on the theoretical foundations and studies primarily based on practices of formative assessment. This includes expertise in the ideas of assessment for learning, designing effective formative assessment tools, and decoding assessment facts to inform educational choices.

II. Mentors should provide opportunities for preservice teachers to observe and practice formative assessment techniques in classroom settings. Formative assessment in action, understand its impact on the student getting to know and mirror its implications for their teaching exercise.

III. Encouraging preservice teachers to interact in reflective practice is essential for their growth. Mentors can facilitate ordinary remarks classes where preservice teachers analyse their formative assessment experiences, perceive strengths and areas for development, and set goals for refining their assessment practices.

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IV. Mentors can introduce preservice teachers to virtual tools and systems that guide formative assessment with online quizzes, data analysis software, and learning control structures.

V. Encouraging a growth mindset that values continuous improvement, adaptation, and resilience in the face of demanding situations can empower preservice teachers to embody formative assessment as a dynamic and indispensable part of their teaching repertoire.
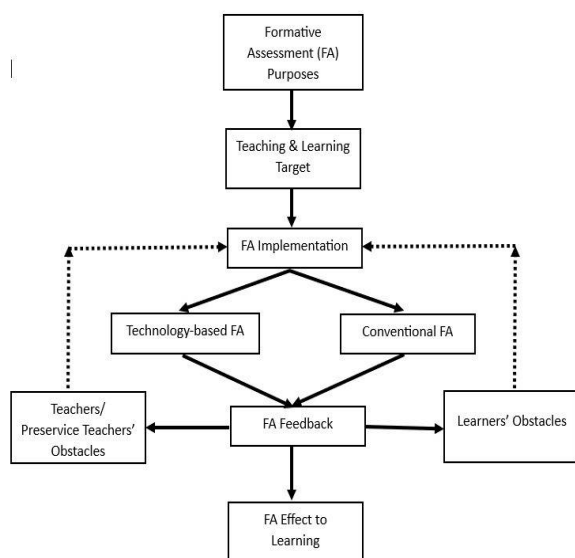

Figure 1. Illustration of Formative Assessment Setting Procedures

Modelling powerful formative assessment techniques via classroom observations and demonstrations is a powerful tool for mentoring preservice teachers in Indonesia. By actively showcasing various assessment strategies, imparting actual-time remarks, integrating generation, emphasizing learner-concentrated assessment and encouraging reflective exercise, mentors can nurture a new technology of teachers who are adept at using formative assessment to beautify student mastering and fulfilment (Bhardwaj et al., 2020). As mentors, you

should encourage and guide preservice teachers in their journey towards formative assessment mastery, contributing to the improvement of a greater effective and responsive instructional system in Indonesia. Here are a few key procedures for formative assessment strategies:

a. Through classroom demonstrations, mentors can showcase various formative assessment strategies along with peer assessment, self-assessment and observation. By actively conducting those techniques, preservice teachers can witness firsthand information how every method gives specific insights into student information and get to know the progress. Additionally, mentors can illustrate a way to adapt assessment strategies to distinct topics, grade levels, and learners' desires, emphasizing the flexibility and applicability of formative assessment.

b. During classroom observations, mentors should exemplify the art of imparting actual-time remarks to students. This consists of demonstrating how to efficiently take a look at and analyse student responses, pick out misconceptions, and provide constructive remarks that promote continuous improvement. Preservice teachers can gain from observing how well-timed and unique comments foster supportive studying surroundings and encourage student reflection and affluent.

c. Mentors should show off the combination of eras in assessment through stay demonstrations of virtual polling structures, interactive whiteboards, educational apps, and online assessment platforms. By incorporating the era into formative assessment, preservice teachers can

witness how the equipment can beautify engagement, provide immediate statistics for selection-making, and streamline the assessment method.

d. Modeling student-focused assessment practices is critical for mentors guiding preservice teachers. By prioritizing the involvement of students inside the assessment system, mentors can display a way to empower students to take possession of their mastery. This can be performed via inclusive of peer assessment, self-assessment, and collaborative purpose setting, permitting preservice teachers to understand the value of learner involvement in shaping their educational journey.

e. In addition to modelling formative assessment strategies, mentors need to emphasize the importance of reflective exercise. By openly reflecting on assessment practices, both successes and demanding situations, mentors can instil a lifestyle of non-stop development and lifetime studying in preservice teachers. Encouraging speaking about the effectiveness of various assessment techniques and their effect on students getting to know can foster essential questioning and expert increase among future teachers.

Encouraging preservice teachers to reflect on their formative assessment reviews and regulate their tactics, is a crucial element of mentoring (Xie & Cui, 2021). Formative assessment mastery is a vital skill for teachers, as it allows them to recognize the getting-to-know wishes in their students and adapt their teaching techniques to assist individual increase. In the context of mentoring preservice teachers in Indonesia, techniques for growing formative assessment mastery have to be tailor-made to the particular cultural and academic panorama

(Montenegro, 2023). Mentoring preservice teachers in formative assessment mastery begins with fostering a culture of reflective practice. Encouraging these teachers to critically evaluate their formative assessment experiences and recall the impact of their strategies on student learning is important. By accomplishing reflective practice, preservice teachers can advantage of deeper expertise in the strengths and barriers of their modern procedures, paving the manner for continuous improvement (Ghanizadeh et al., 2020). Mentors can provide preservice teachers with opportunities to design and put into effect formative assessment strategies for classroom settings. By watching the consequences of their efforts and receiving positive comments, preservice teachers can refine their technique and advantage self-belief in their capacity to apply formative assessment correctly.

By setting students at the centre of the assessment technique, preservice teachers can increase a deeper understanding of wishes and tailor their guidance as a consequence. Mentors can guide preservice teachers in utilising several formative assessment techniques that prioritize student engagement and participation, which include peer assessment, self-assessment, and collaborative gaining of knowledge. The integration of the era can beautify formative assessment practices and provide preservice teachers with valuable tools for accumulating and studying student information. Mentors can introduce preservice teachers to digital systems and packages that facilitate formative assessment, allowing them to explore revolutionary approaches to gauging student development and adjusting their teaching techniques in reaction (Corral Abad et al., 2021). By harnessing the energy of generation, preservice teachers can amplify their repertoire of formative assessment methods and adapt to the evolving

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educational landscape. Mentoring preservice teachers in formative assessment mastery also involves cultivating an increased mindset. Encouraging these teachers to include challenges, examine setbacks, and persist in their pursuit of excellence can foster resilience and a commitment to continuous improvement. By instilling a thriving mindset, mentors can empower preservice teachers to technique formative assessment as a dynamic and evolving skill set.

e. Leveraging Technology for Formative Assessment

The role of digital tools and structures in facilitating formative assessment is paramount in shaping the future of training, especially for preservice teachers in Indonesia. By embracing the era, harnessing records-driven insights, personalizing mastering, fostering collaboration, and overcoming boundaries, teachers can revolutionize the manner they examine student development and power significant getting-to-know consequences. As the virtual landscape keeps adapting, preservice teachers need to be prepared with the expertise and talents to leverage this equipment successfully, ultimately transforming the academic experience for students across Indonesia.

Digital tools and platforms offer preservice teachers innovative approaches to accumulating, examining, tracking student development and offering timely feedback (Duncan & Barnett, 2009). These sources allow teachers to the advantage of deeper insights into students' mastering processes, discover areas for improvement, and tailor instruction to fulfil personal needs. By leveraging generation for formative assessment, preservice teachers can create an extra inclusive and supportive knowledge of surroundings, ultimately improving student

effects. Utilizing virtual tools for formative assessment has the potential to accumulate and examine real-time information (Elmahdi et al., 2018). These tools allow preservice teachers to acquire student responses, performance metrics, and other applicable information, providing a comprehensive view of every student's educational journey. By harnessing the strength of records-pushed insights, teachers could make knowledgeable instructional decisions, perceive patterns and tendencies, and customise gaining knowledge of reviews to optimize learner fulfilment. Digital structures ready with adaptive learning functions offer a customized approach to formative assessment. These platforms utilize algorithms to research student responses and behaviour, finally adjusting the content material and pacing of training to shape individual studying styles and competencies. By incorporating adaptive systems into their teaching practices, preservice teachers can cater to diverse learner desires, promote self-directed studying, and foster more dynamic and responsive classroom surroundings (Özüdoğru, 2022). Digital tools and structures additionally facilitate seamless communication and collaboration between preservice teachers, mentor teachers, and students (Bullock, 2013; Kivunja, 2013). Through online forums, immediate messaging, and collaborative software, teachers can trade thoughts, and percentage resources, and provide ongoing support for each other. Additionally, these structures enable preservice teachers to engage in significant talk with their students, offering optimistic feedback, steering, and encouragement to beautify their studying reviews. In a various academic landscape like Indonesia, digital tools and systems can help bridge gaps in educational assets and aid (Bhardwaj et al., 2020). By leveraging

technology for formative assessment, preservice teachers can conquer geographical barriers, attain far-flung and make sure that each student has equal opportunities to acquire notable education (Kumaravadivelu, 2012). This inclusive approach now not best advantages students but additionally empowers preservice teachers to conform to numerous studying environments and innovate their pedagogical practices.

In the context of mentoring preservice teachers in Indonesia, leveraging the era for formative assessment mastery can result in extra powerful teaching and progressed students gaining knowledge of outcomes. One of the benefits of integrating technology into formative assessment is the capacity to gather actual statistics on student know-how and development. With the usage of virtual equipment including online quizzes, interactive whiteboards, and academic apps, teachers can right away gather facts approximately the strengths and weaknesses of their students. These instantaneous comments allow teachers to make timely academic adjustments to meet the various desires of their freshmen, ultimately fostering a greater personalised and responsive knowledge of their surroundings. Furthermore, era-enabled formative assessment offers a possibility for accelerated learner engagement. Interactive structures and multimedia assets can make the assessment technique greater interactive and enjoyable for students, thereby motivating them to actively participate in their gaining knowledge (Corral Abad et al., 2021; Evans & Gibbons, 2007; Regan & Sheppard, 1996). By incorporating gamified elements, multimedia content material, and collaborative tools, teachers can create a dynamic and stimulating assessment enjoyment that captures students' hobbies and promotes deeper learning (Fitria, 2022).

Another key gain of leveraging generation for formative assessment is the capacity for personalised and differentiated practice (Duckor & Holmberg, 2017). Through the use of getting to know control systems and adaptive knowledge of systems, teachers can tailor their teaching based totally on character student performance and learning patterns. This personalized method helps the various wishes of students, taking into consideration focused interventions and enrichment activities cope with unique areas of increase and success.

Moreover, technology integration in formative assessment can facilitate the creation of extra inclusive and reachable mastering surroundings. For students with various mastering desires, virtual equipment can offer resorts which include text-to-speech functions, adjustable font sizes, and multi-modal content shipping. These accessibility capabilities can assist in setting the playing discipline for all newcomers, making sure that each student has an identical possibility to demonstrate their know-how and get hold of significant remarks education (Kumaravadivelu, 2012). In the context of mentoring preservice teachers in Indonesia, it's far crucial to provide guidance and education on the powerful use of era for formative assessment. Mentors can guide new teachers in exploring and implementing a whole lot of virtual equipment and platforms that align with the Indonesian curriculum and academic standards. By modelling quality practices and presenting arms-on revel, mentors can empower preservice teachers to leverage the era in ways that enhance their formative assessment practices and improve student studying effects.

While technology possesses the capacity to augment formative assessment methodologies and enhance the quality of education, its assimilation also presents

obstacles and constraints that necessitate meticulous attention. By acknowledging and mitigating issues such as the digital divide, ethical considerations, and pedagogical implications, mentors and educators can foster a balanced and effective use of technology in formative assessment, ultimately benefiting both preservice teachers and their students. The digital gap creates a significant obstacle to using the era for formative assessment (Corral Abad et al., 2021).

In the context of mentoring preservice teachers in Indonesia, this digital divide can manifest in various ways, such as variances in access to devices and reliable internet connectivity among schools and students. When pre-service educators have designated the responsibility of implementing formative evaluation practices that heavily rely on technology, such as online quizzes or digital portfolios, individuals who lack access to the required resources may face a disadvantage. Consequently, this can result in unequal opportunities for students to learn and impede the effectiveness of formative assessment methods. Hence, mentors and instructors must be aware of the existence of the digital divide and endeavour to minimize its impact by offering alternative assessment approaches that do not exclusively rely on technology. One notable constraint when it comes to integrating technology in formative assessment is the moral considerations and privacy concerns that emerge due to the gathering and retention of student data. In the epoch of digitalization, where student information is regularly stored in cloud-based systems or online platforms, giving priority to the protection and confidentiality of this data is of utmost importance. When mentoring preservice teachers in utilizing technology for formative assessment, educators must emphasize the ethical considerations involved in data collection, particularly regarding sensitive information such as student performance metrics or personal details. Moreover, it is imperative to ensure adherence to data protection regulations and cultivate an environment that promotes conscientious handling of data among prospective teachers. This is crucial to avert privacy infringements and uphold the bond of trust between educators, students, and their families.

The reliance on technology in formative assessment can also impact pedagogical practices and teaching methodologies. While technology offers innovative tools and platforms for conducting assessments, it may inadvertently shift the focus from holistic, student-centred learning to mere data collection and analysis (Prastikawati, Wiyaka, and Adi, 2020). When preservice educators excessively depend on technology for formative evaluation, there exists a potential danger of disregarding the interpersonal dimensions of pedagogy and disregarding the varied requirements and learning styles of learners. Furthermore, the obligation to incessantly supervise and evaluate student advancement via digital mediums may result in a more standardized approach to instruction, potentially impeding creativity and personalized learning encounters.

f. Culturally Responsive Formative Assessment Practices

Recognizing the cultural variety of students in Indonesian classrooms is critical for fostering powerful formative assessment practices. Indonesia is understood for its rich cultural tapestry, with a multitude of ethnicities, languages, and traditions. As such, teachers and preservice teachers have to renowned and celebrate this range when enforcing formative assessment techniques.

Culturally responsive formative assessment practices inside the context of Indonesian classrooms go beyond the mere administration of exams and quizzes. It entails information and embracing the various cultural backgrounds of students, and leveraging this knowledge to tailor assessment strategies that resonate with their experiences and perspectives. Preservice teachers in Indonesia can be guided to recognize the cultural range of their students by engaging in activities that sell cultural recognition and sensitivity. This can include studying about the numerous ethnic businesses and their customs, traditions, and languages. By doing so, preservice teachers can gain valuable insights into the cultural nuances that shape their students' identities and learning alternatives.

Furthermore, mentoring preservice teachers to apprehend cultural diversity entails encouraging them to actively listen to their students' voices and stories. By developing a classroom environment where students feel comfortable sharing their cultural backgrounds, preservice teachers can benefit from deeper expertise in their students' views and use this knowledge to tell their formative assessment practices. Additionally, preservice teachers may be guided to explore culturally relevant teaching materials and assets that replicate the numerous identities found in their classrooms. This may additionally encompass incorporating literature, track, art, and historical narratives from one-of-a-kind cultural backgrounds into their lessons (Koulagna, 2020). Preservice teachers can validate and honour the cultural history of their students, growing inclusive and culturally responsive studying surroundings. It is likewise vital to mentor preservice teachers in recognizing the impact of cultural diversity on mastering patterns and preferences. Different cultures may

additionally place various emphases on collaborative knowledge of personal reflection. By knowing these variations, preservice teachers can adapt their formative assessment strategies to house various learning styles and preferences, ensuring that all students have equitable opportunities to demonstrate their know-how and development.

In Indonesia, diversity is not the handiest contemplated inside the numerous ethnic groups, languages, and traditions however additionally in the manner information is imparted and acquired. Therefore, preservice teachers want to be privy to the cultural nuances that affect gaining knowledge of behaviours, attitudes, and expectancies of students. From the Javanese idea of "gotong royong" (cooperation) to the Balinese philosophy of "Tri Hita Karana" (concord and balance), these cultural values deeply affect the manner students perceive education and engage with their teachers (Ihsani & Prastikawati, 2023). By tailoring formative assessment processes to align with the cultural context and values of the local community, preservice teachers in Indonesia can create a more inclusive and empowering knowledge of the environment. Embracing range, incorporating local expertise, fostering collaborative comments, and being bendy in expectations are critical steps towards promoting culturally responsive formative assessment practices. To correctly mentor preservice teachers in Indonesia, it is essential to tailor formative assessment techniques in a way that respects and includes the nearby cultural context. Here are a few procedures to acquire this:

a. Preservice teachers ought to be endorsed to diversify assessment methods to house different mastering patterns and cultural backgrounds. For example, while a few students may also thrive in verbal tests

and discussions, others would possibly excel in visible or arms-on activities. By incorporating several assessment strategies, teachers can create an extra-inclusive studying environment that resonates with the various cultural stories of their students.

b. Formative tests need to include examples and references which are relatable to the local context. By integrating local understanding, memories, and cultural references into assessment duties, teachers could make learning greater engaging and significant for his or her students. This now not only validates the cultural identity of the students but also fosters a sense of pleasure and connection to their background.

c. In many Indonesian cultures, collaboration and communal mastering are relatively valued. Preservice teachers can promote culturally responsive formative assessment by facilitating peer comment periods and organization discussions. This collaborative technique no longer aligns with the cultural values of teamwork and mutual aid but also encourages students to analyze each other's diverse views.

d. Cultural variations in mastering tempo, communication patterns, and educational priorities ought to be recounted while putting expectations and desires for formative assessment. Preservice teachers have to be mentored to be bendy in their method, permitting students to demonstrate their know-how in methods which might be significant within their cultural context.

Promoting inclusive and equitable formative assessment practices is fundamental to mentoring preservice teachers in Indonesia (Akhyar, 2023; Hata et al., 2021). By embracing culturally responsive assessment strategies, teachers can gain knowledge of environments that honour and assist the various strengths, identities, and wishes of all students. Through ongoing mentorship and professional development, preservice teachers can develop the vital talents and attitude to effectively enforce inclusive formative assessment practices, in the long run fostering a more equitable academic enjoy for all newbies.

In the context of mentoring preservice teachers in Indonesia, promoting inclusive and equitable formative assessment practices is critical for accommodating various student desires. Culturally responsive formative assessment practices play a pivotal position in making sure that each student, regardless of their cultural or linguistic history, has equitable possibilities to demonstrate their getting to know and acquire tailor-made support. By embracing inclusive assessment strategies, preservice teachers can create surroundings where every student feels valued, respected, and supported in their learning journey. To accommodate various student needs, preservice teachers can combine lots of formative assessment strategies that align with culturally responsive practices. These may additionally encompass:

a. Encouraging students to express their knowledge via various mediums, which include verbal displays, written initiatives and virtual media. This acknowledges and values diverse types of communique and expression.

b. Providing alternatives for students to select assessment codecs that resonate with their cultural and personal backgrounds. For example, presenting the choice between written essays and multimedia initiatives can empower students to exhibit their knowledge in ways that align with their strengths and reviews.

c. Integrating culturally applicable examples, testimonies, and materials into checks to make mastering extra relatable and significant for students from diverse backgrounds.

d. Emphasizing collaborative and cooperative assessment activities that draw on the collective strengths of diverse student companies. This fosters an inclusive mastering environment wherein students can learn from each other and leverage their precise perspectives.

4. Conclusion

In conclusion, formative assessment mastery is a critical component of mentoring preservice teachers in Indonesia. By comprehending the difficulties and prospects associated with the execution of formative evaluation methodologies, mentors possess the capability to steer aspiring teachers in cultivating their abilities and proficiencies in this domain. Through proficient instruction, resource utilization, technology assimilation, and cooperation, aspiring teachers can refine their formative evaluation practices and ultimately enhance the educational accomplishments of their students. From providing individualized feedback to promoting student engagement, from delivering targeted instruction to fostering a growth mindset, the benefits of formative assessment mastery are far-reaching and transformative. By allocating resources towards the guidance and assistance of aspiring educators in their acquisition of skills related to evaluating student progress, Indonesia has the potential to establish a more unbiased, comprehensive, and efficient educational framework that benefits all students. Furthermore, formative assessment mastery enables teachers to provide timely and constructive feedback to students. This

iterative feedback process nurtures a supportive educational atmosphere, wherein students are motivated to introspect on their performance and effectuate necessary enhancements. Consequently, learners become more actively involved in the educational journey and are driven to attain scholastic supremacy. Furthermore, by mastering the art of formative evaluation, educators are capable of crafting more personalized educational encounters for their students. They can discern the distinctive strengths and weaknesses of each learner, enabling them to fabricate tailored interventions that cater to individual educational requirements. This will enhance the learning experience for students and also encourage a feeling of inclusiveness and fairness within the classroom. Besides, when educators showcase proficiency in formative assessment techniques, they can proficiently oversee the progress of students over time. This longitudinal view of student development enables teachers to track growth, identify trends, and adjust their instructional strategies accordingly. By incorporating these strategies into the curriculum of teacher training programs, we can enhance the readiness of educators to effectively cater to the distinct learning requirements of students in Indonesia. This proactive methodology has the potential to significantly augment the overall educational standards in the nation. The following suggestions are proposed for mentoring initiatives intended to assist preservice teachers in acquiring expertise in formative assessment: Adapt mentoring initiatives to cater to the particular requirements of preservice teachers at varying stages of formative assessment proficiency. Cultivate occasions for collaborative work and observations among peers to foster learning and exchange of exemplary techniques among

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preservice teachers. Furnish continuous professional development opportunities for preservice teachers to enhance their comprehension of the principles and strategies of formative assessment.

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