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The Enhanced Adaptive PPP Model: A Novel Framework for Revolutionizing Test-Taking Strategies in Language Assessment

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ABSTRACT

This study revisits and expands the Presage, Process, Product (PPP) model to propose a dynamic and interactive framework for language learning. The enhanced model emphasizes the reciprocal relationships among presage factors (learner characteristics and contextual influences), process strategies (approaches to learning and engagement), and product outcomes (performance and broader competencies). By integrating culturally relevant content, digital tools, and feedback-driven strategy refinement, the revised model addresses the evolving needs of learners in diverse educational contexts, particularly within Saudi Arabia. This approach bridges traditional and modern pedagogies, advocating for adaptive, student-centered practices that align with cultural priorities and real-world applications. The study highlights the interplay of stages, showcasing how feedback from outcomes can shape future learning behaviors. Implications for instructional design, assessment, and technology integration are explored, offering educators a comprehensive framework for fostering meaningful and transferable learning experiences.

Keywords: Presage Process Product Model; Language Learning; Cultural Relevance; Digital Tools; Adaptive Learning; Saudi Arabia

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1. Introduction

Test-taking strategies (TTS) are an essential component of second language acquisition, particularly within assessment contexts. They have been looked at by different perspectives. One of them is the PPP model[1]. These strategies encompass a range of conscious and unconscious tactics employed by learners to enhance their performance during examinations, either to facilitate comprehension and recall or to compensate for gaps in knowledge[2, 3]. Understanding the nuances of TTS is critical for educators aiming to develop assessments that accurately reflect language proficiency without being skewed by test-wise behaviors.

Test-taking strategies can be broadly categorized into cognitive strategies, which involve direct interaction with the test content, and metacognitive strategies, which focus on planning, monitoring, and evaluating the approach to the test[4, 5]. The interplay between these strategies influences how effectively learners navigate various test formats, including multiple-choice questions, cloze tests, and open-ended responses[6].

In these works[7–12], it has been emphasized that TTS are not just isolated tactics but part of a broader framework of strategic competence that learners develop and refine through experience. These strategies, when understood and harnessed correctly, can empower learners to approach assessments with confidence and adaptability. Additionally, the strategic choices made during testing are influenced by factors such as proficiency level, test type, and even cultural context, highlighting the importance of culturally responsive teaching practices in fostering strategic learning[13, 14].

This chapter delves into the diverse range of TTS employed by language learners, exploring their effectiveness, implications for assessment design, and potential biases. It also discusses the strategies' role in maintaining test validity and reliability, drawing on established models like the Presage, Process, Product (PPP) model and my adaptation of it to include feedback loops that enhance strategic adaptation[3]. Through this lens, educators can better understand how to create assessments that challenge students fairly while mitigating the influence of non-constructive strategies such as test-wiseness[15].

1.1. Definition of a Strategy

Cohen and Pinilla-Herrera[16] highlighted a general agreement among 19 experts in the field of language learning strategies on various aspects related to strategies. However, they observed significant disagreement regarding the precise definition of the term "strategy." Macaro[4] elaborates on this definitional challenge, attributing it to the use of "semantic equivalence terms" and the interchangeable nature of terms used to describe strategies. This variation suggests that researchers often employ different terminology to represent the same concept. Supporting this observation, Grenfell and Macaro[17] criticized previous research on second language (L2) strategies for offering inconsistent definitions.

For instance, McDonough[18, 19] refers to strategies as "articulated plans," while Phakiti[20] describes them as "actions, steps, or techniques." Similarly, Oxford[21] characterizes strategies as "tactics that include planning," Rubin[22] uses the terms "operations, plans, or routines," Sarig[23] calls them "moves," Stern[24] labels them "techniques," and Alexander et al.[25] prefer the term "skill." Dörnyei & Skehan[26] further expand on this, defining strategies as encompassing neurological processes, cognitive operations, or behavioral acts involving motor skills. Consequently, the literature presents a wide range of perspectives, with some researchers treating strategies as observable actions and others regarding them as unobservable mental processes. Cohen[2] offers a unifying solution by suggesting that all these terms be collectively recognized as "strategies."

This study does not attempt to resolve the terminological inconsistencies or differentiate between the synonyms associated with strategies. Instead, it aims to develop a functional definition based on insights from the existing literature. A strategy is conceptualized through its widely acknowledged characteristics, as identified by[4, 27]. These characteristics include (a) consciousness, (b) the sequencing and clustering of strategies, and (c) goal orientation. However, it is important to note that strategy clustering is not an essential criterion, as strategies can also function independently. Clustering is thus viewed as a common but non-defining feature of strategy use[7–11].

1.1.1. Consciousness

The notion of consciousness was first introduced to second language (L2) learning research by [28, 29] through his Five Hypotheses, which distinguish between acquisition as an unconscious process and learning as a conscious one. This concept was later expanded by theories such as Anderson's Adaptive Control of Thought (ACT*) theory [30–33] which argues that explicit learning can transition into automaticity. There remains, however, a debate among researchers regarding the role of consciousness as a defining feature of strategies. Many applied linguistics scholars, including Macaro and Cohen, assert that strategies are inherently conscious. Others suggest that learners can execute tasks and utilize strategies without being fully conscious of their actions. For instance, Bialystok [34] observed that while young L2 learners demonstrated strategic behaviors, they often could not verbalize these strategies, likely due to developmental limitations. On the other hand, Chamot et al. [35] reported that children in immersion programs learning Japanese, French, and Spanish were aware of their strategies, which positively influenced their language acquisition. Consequently, some researchers have characterized strategies as "potentially conscious" [36].

In testing contexts, students may unconsciously process certain elements, such as recognizing familiar words or identifying letter forms, before consciously employing specific strategies to complete a task. In some cases, strategies can become automatic under particular circumstances, making it difficult for learners to consciously acknowledge their use [37]. For example, a test-taker might arrive at a correct answer without consciously applying any strategies. This study adopts the view that while learners may engage in conscious strategy use, some conscious processes may become automatic in specific situations [38, 39]. Additionally, Faerch [40] highlighted that individual factors (e.g., gender, proficiency) and situational variables (e.g., task type) influence the degree of consciousness, suggesting that strategy use varies depending on these constraints [7–11].

1.1.2. Strategy Clusters

When learners become aware of a problem during a task, they often respond by employing a combination of strategies, known as "strategy clusters" [4]. Research has consistently shown that relying on a single strategy is usually inadequate for test-takers to achieve an optimal response [4, 5, 17, 41–44]. Studies utilizing questionnaires and verbal reports have highlighted that learners frequently adopt multiple strategies to tackle tasks effectively. For instance, Addamegh [44] observed that Saudi learners used a combination of strategies to fill in a blank from several choices. They typically began by identifying the part of speech (POS) of the missing word to rule out distractors, then inserted a guessed word to evaluate its fit. This suggests that a single strategy is generally insufficient, particularly for complex test items. Instead, correct responses often result from a well-coordinated use of multiple strategies [6, 45]. Conversely, incorrect answers may stem from an ineffective combination of strategies that interfere with each other.

1.1.3. Goal Orientation

Psychological and motivational research, such as the work of Dörnyei [46], emphasizes that human behavior is inherently goal-driven. As a mental or physical action, strategies are frequently employed with a clear objective in mind. In test settings, learners may utilize clusters of strategies to accomplish specific goals, such as passing a test or achieving a high score. Researchers have categorized strategies into two main types: mainline strategies, which help facilitate task performance under normal conditions, and problem-solving strategies, which are activated in response to challenges. This study adopts a broad view of strategies, incorporating both perspectives.

Cohen [27] conducted a questionnaire-based survey with 19 expert researchers and found a consensus that strategies inherently involve goals, although the importance of these goals can vary. For example, a learner might use their first language (L1) to translate parts of a second language (L2) text during a test to enhance understanding. Conversely, rereading may be considered a less explicit strategy aimed at refining comprehension.

Building on this discussion, this study defines a strategy as a process that incorporates consciousness, goal orientation (including facilitation and problem-solving), and mental action, sometimes supplemented by physical action.

1.2. Test-Taking Strategies

Test-taking strategies (TTS) play a crucial role in the field of second language (L2) acquisition and assessment. To understand their significance, it is essential to place them

within the broader framework of L2 strategies, which are typically divided into two main categories: learning strategies and use strategies. Learning strategies are employed continuously to support the ongoing process of language acquisition. For instance, a strategy such as "writing down new words while listening to English news" reflects a consistent effort to build and retain vocabulary over time. In contrast, use strategies are task-specific and are applied to address immediate needs in particular contexts, such as communication or testing. An example would be "using a dictionary to understand a text while reading," which aids comprehension for a specific reading task.

1.2.1. Types of Strategies

Strategies are intentional, goal-directed actions that learners employ to facilitate various aspects of language learning, including comprehension, acquisition, and assessment performance. These strategies are commonly classified into three categories:

1. **Cognitive Strategies**, which involve direct interaction with language input.
2. **Metacognitive Strategies**, which focus on managing, planning, and evaluating the learning process.
3. **Test-Taking Strategies (TTS)**, which are specifically designed to optimize performance during assessments.

Each of these strategy types plays a unique role in shaping how learners approach language tasks. By utilizing these strategies effectively, learners enhance their ability to process, apply, and demonstrate their language skills, ultimately contributing to their language proficiency and overall learning success.

1.2.2. Cognitive Strategies

Cognitive strategies are essential for learners as they facilitate the mental processes required to engage with, acquire, and internalize new language content. These strategies encourage direct interaction with the learning material and are fundamental for successful language learning and assessment performance. The following are detailed explanations and examples of key cognitive strategies:

1. Summarizing and Synthesizing Information

Summarizing involves condensing extensive information into shorter, more manageable segments, allowing learners to focus on the main ideas. Synthesizing goes a step further by integrating information from multiple sources to create a cohesive understanding. For instance, a student reading an article on Saudi Arabia's Vision 2030 might summarize its key points to demonstrate comprehension and retention. Summarizing promotes deeper cognitive processing as it requires learners to discern and prioritize important information[47].

2. Note-Taking and Outlining

Note-taking helps learners organize and retain new language information by capturing essential details during lectures or while reading. Outlining involves structuring these notes into a clear format that can serve as a roadmap for revisiting critical content. For example, in preparation for an oral presentation, a student might take detailed notes on relevant vocabulary, arguments, and supporting evidence. Structured note-taking, as highlighted by Oxford[48], not only strengthens memory but also enhances learners' ability to recall and use language effectively in assessments. Educators can foster this skill through workshops and targeted exercises.

3. Using Contextual Guessing

Contextual guessing, or inferring the meaning of unknown words from surrounding text, is a critical strategy for reading fluency and vocabulary development. This approach encourages learners to rely less on external aids, such as dictionaries, and more on their ability to decode meaning from context. For instance, when encountering the term "sustainable" in a passage about environmental conservation, a student might infer its meaning from phrases like "reducing waste" and "protecting natural resources." Research by Phakiti[5] demonstrates that learners who effectively use contextual guessing perform better in reading comprehension tasks.

4. Repetition and Practice

Repetition is a straightforward yet highly effective strategy for reinforcing learning and developing automaticity. By repeatedly practicing language tasks, learners solidify their grasp of vocabulary, grammar, and language use, ensuring these elements are transferred to long-term memory. For example, a student preparing for an oral exam might rehearse their speech multiple times to reduce anxiety and improve fluency.[10] ACT* theory supports the role of repetition in transitioning from conscious, effortful processing to automatic responses, a skill particularly valuable in timed

assessments.

5. Using Translation as a Support Tool

Translation, though sometimes criticized for hindering immersion, can serve as a powerful tool for comprehension and retention when used strategically. This strategy allows learners to map unfamiliar L2 words or phrases onto familiar L1 concepts, creating a cognitive bridge between languages. For instance, a beginner-level learner might translate complex English sentences into Arabic to ensure comprehension before moving forward. Cohen [2] highlights the value of translation as a scaffolding strategy in the early stages of language learning. Teachers can incorporate bilingual glossaries and translation tasks to support learners during this phase.

6. Analyzing and Organizing Information

Analysis involves breaking down complex language material into smaller, manageable parts to understand its structure and meaning. Organization refers to grouping and categorizing information in meaningful ways to enhance comprehension. For example, when studying the passive voice, a learner might analyze example sentences to identify grammatical patterns and then categorize them by tense (e.g., simple present, simple past). Wenden [49] suggests that this analytical approach fosters a deeper understanding of language rules, which can then be applied to learners' own writing.

Cognitive strategies are the foundation of language competence as they involve active engagement with language input. By employing these strategies, learners develop the ability to decode, comprehend, and produce language effectively, leading to improved proficiency. Phakiti [5] found that learners who regularly use summarizing, contextual guessing, and repetition tend to perform better in reading and writing assessments. Furthermore, cognitive strategies encourage active learning, which Oxford [48] identifies as a critical factor in long-term language acquisition. Active learners who analyze, summarize, and organize content are more likely to retain and apply knowledge compared to those who rely on passive methods of study.

1.3. Practical Implications for Educators

Educators hold a pivotal role in cultivating learners' use of cognitive strategies by designing instructional environments that actively promote practice, engagement, and application. Through deliberate planning and execution, teachers can foster strategy use that enhances both academic performance and real-world communication skills. Below are key approaches educators can adopt to embed cognitive strategies into their teaching practices:

1.3.1. Incorporate Explicit Strategy Training

One of the most effective ways to encourage the use of cognitive strategies is by providing explicit instruction and practice opportunities. Teachers can organize targeted workshops and training sessions focused on specific strategies, such as summarizing key ideas from a text, using contextual clues to infer meaning, or organizing information through effective note-taking. For example, during a workshop, students might work collaboratively to summarize complex paragraphs, highlighting main ideas and supporting details. Similarly, practice sessions can involve exercises where students analyze unfamiliar words within a passage to deduce their meanings from context. These activities not only enhance learners' understanding but also equip them with tools they can apply independently in various scenarios.

1.3.2. Design Context-Rich Learning Activities

Creating lessons that immerse students in meaningful, authentic tasks encourages the habitual use of cognitive strategies. Activities such as reading comprehension tasks based on current events, group discussions centered on relevant social or cultural topics, and vocabulary games designed to promote contextual guessing can make these strategies integral to students' learning processes. For example, a lesson might include analyzing an article about climate change, during which students practice identifying unfamiliar vocabulary through contextual clues. Incorporating culturally relevant materials, such as texts related to Saudi Arabia's Vision 2030, can further enhance engagement and relevance, prompting deeper processing and strategy application.

1.3.3. Integrate Reflective Assignments

Reflective assignments serve as a powerful tool for fostering metacognitive awareness, encouraging students to critically evaluate the strategies they use and their effectiveness. For instance, after completing a reading or writing task, students might be asked to write a short reflection detailing which cognitive strategies they employed, how those strate-

gies impacted their performance, and what adjustments they might make in future tasks. This reflective practice helps learners develop a clearer understanding of their learning processes, promoting intentional and strategic behavior over time.

1.3.4. Encourage Collaborative Learning Opportunities

Collaborative activities can further support the development of cognitive strategies by allowing students to learn from their peers. Group projects, peer review exercises, and strategy-sharing discussions provide opportunities for students to observe and adopt effective approaches used by their classmates. For instance, during a group assignment, students might collectively brainstorm ways to approach a challenging text, with each member contributing strategies that align with their strengths. This shared learning environment fosters a sense of community while reinforcing the value of diverse strategic approaches.

1.3.5. Leverage Technology for Strategy Application

Educators can utilize digital tools and platforms to create interactive, strategy-focused learning experiences. For example, online quizzes with immediate feedback can help students practice contextual guessing and analyze their progress. Similarly, note-taking applications and digital organizers can support students in structuring and revisiting information effectively. By integrating technology into their lessons, teachers can provide students with accessible, engaging avenues for applying cognitive strategies both inside and outside the classroom.

1.4. Metacognitive Strategies

Metacognitive strategies are advanced cognitive processes that involve planning, monitoring, and evaluating one's learning activities. These strategies allow learners to regulate and refine their cognitive actions, making them indispensable for independent and effective learning [49]. While cognitive strategies focus on engaging directly with language content, metacognitive strategies oversee the broader learning process, guiding learners to approach tasks more purposefully and efficiently. These strategies help students to become self-directed, enabling them to make informed decisions about their learning paths.

1.4.1. Planning

Planning is the foundation of metacognitive strategies, involving the identification of clear learning goals and the steps needed to achieve them. Before starting a language task, learners use planning to prioritize objectives, allocate time effectively, and determine which resources or strategies to apply. For example, a student preparing for a detailed reading task might first skim the text to grasp the main ideas and then read it thoroughly while taking structured notes. This proactive approach ensures that learners stay focused and maintain a clear direction throughout the activity. Chamot [50] highlights that learners who plan their actions perform better because they enter tasks with a structured and goal-oriented mindset. Effective planning fosters confidence and reduces the likelihood of confusion during the task [51].

1.4.2. Monitoring

Monitoring involves the ongoing regulation of one's comprehension and progress during a language task. This process requires learners to continuously assess whether they are achieving their objectives and to make adjustments as needed. For instance, in a listening comprehension exercise, a student might replay segments of audio if they find that they missed important details. Real-time self-assessment prompts learners to ask reflective questions, such as, "Am I following the speaker's main argument?" or "Should I focus more on specific vocabulary?" According to Purpura [52], students who actively monitor their understanding can identify gaps and implement strategies to address them, such as using context clues or requesting clarification. Teachers can encourage monitoring by embedding reflective prompts into lessons, helping students develop greater awareness of their strengths and weaknesses.

1.4.3. Evaluating

Evaluation is the process of reviewing a completed task to assess the success of the strategies employed. This reflective practice enables learners to analyze what worked well, identify areas of difficulty, and plan improvements for future tasks. For example, after writing an essay, a student might evaluate their work against a rubric, checking if they addressed the prompt effectively, used appropriate grammar structures, and organized their ideas logically. Evaluation helps students gain critical insights into their learning process, encouraging the adaptation of successful strategies and

the refinement of less effective ones. Research by Phakiti [5] confirms that evaluation contributes significantly to academic achievement, as it nurtures critical thinking and problem-solving skills.

Informed decisions about which strategies to adapt or discard for future tasks.

1.5. Practical Classroom Applications

Educators are instrumental in cultivating metacognitive strategy use by incorporating structured activities into their daily teaching practices. By integrating planning, monitoring, and evaluation into lessons, teachers can foster an environment where students develop essential self-regulatory skills. These approaches not only improve academic performance but also prepare learners for independent, lifelong learning. Below are expanded strategies educators can employ:

Planning activities are fundamental in teaching students how to set goals, allocate resources, and structure their approach to tasks. Teachers can guide students to outline their objectives before beginning projects, ensuring they have a clear plan of action. For instance, in a group presentation assignment, students can collectively decide on roles—such as who will research, draft, or design visual aids—and set a timeline for completion. Teachers might provide scaffolding through templates or guides that outline specific steps, such as "Identify three main sources," "Draft an introduction," and "Assign review responsibilities." These exercises help learners understand the importance of preparation and time management, building a foundation for successful task execution. To further embed planning into classroom routines, educators can incorporate individual goal-setting activities. For example, at the start of each week, students could list specific objectives, such as "Learn five new vocabulary words" or "Master the use of passive voice." These goals can then be revisited at the end of the week to evaluate progress, reinforcing the value of planning as an ongoing practice.

Monitoring encourages students to reflect on their learning process and adjust their strategies as needed. Teachers can introduce reflective pauses during lessons, prompting students to assess their comprehension and identify areas of difficulty. Questions like "Am I understanding this concept?" or "Do I need to revisit a specific section for clarity?" guide students toward greater self-awareness. Interactive tools such as learning logs or progress checklists can further support monitoring. For example, while reading a challenging text, students might use a checklist to mark completed steps like "Identified main idea" or "Understood key vocabulary." If students encounter obstacles, they can note these issues and revisit them later, either independently or with the teacher's assistance. Collaborative activities also benefit from monitoring prompts. In peer editing exercises, students can review each other's work with guided questions such as "Is the thesis statement clear?" or "Does the conclusion address the main argument?" This approach not only develops individual monitoring skills but also fosters a collaborative learning culture.

Evaluation is crucial for helping students reflect on their performance and refine their learning strategies. After completing a task, educators can facilitate evaluative discussions where students analyze their approach, identify effective strategies, and brainstorm improvements for future activities. For instance, after a group project, students might discuss questions like "What strategies helped us meet our deadline?" or "What challenges did we face, and how can we address them next time?" Teachers can enhance these discussions by using rubrics or checklists to structure the evaluation process, ensuring that students consider multiple aspects of their performance, such as time management, resource use, and teamwork. Additionally, individual reflection assignments can deepen evaluative thinking. Students might write a short journal entry after a task, detailing what they learned, which strategies they found most effective, and what they plan to change in the future. This practice encourages introspection and reinforces the importance of continuous improvement.

Digital tools and platforms can enhance the integration of planning, monitoring, and evaluation into classroom activities. For planning, apps like Trello or Asana can help students organize their tasks and track progress. During monitoring, online quizzes with immediate feedback allow students to assess their understanding and adjust their focus accordingly. For evaluation, e-portfolios can provide a platform for students to document their learning journey, compare initial and final outputs, and reflect on their growth over time. Teachers can also use technology to create interactive environments that encourage strategy use. For example, virtual breakout rooms in platforms like Zoom can be used for peer evaluations, where students collaboratively analyze

their group's performance and discuss improvements.

To embed metacognitive strategies into daily teaching, educators can design a curriculum that explicitly teaches these skills. For example, a unit on essay writing might begin with lessons on planning an outline, continue with activities on monitoring progress during the drafting phase, and conclude with reflective evaluation of the final product. By making these strategies a visible and consistent part of instruction, teachers help students internalize them as lifelong habits.

By integrating these strategies into their teaching practices, educators empower students to take greater ownership of their learning processes. Planning activities foster foresight and organization, monitoring prompts encourage adaptability, and evaluative discussions promote reflection and growth.

2. The PPP Model: A Holistic Approach to Language Learning

The Presage, Process, Product (PPP) model, first introduced by[1], offers a robust framework for understanding the complexities of language learning. It highlights the dynamic relationship between learner characteristics, the learning context, and outcomes. The model views learning as an interactive process where presage factors (learner traits and prior knowledge) influence the process (learning behaviors and strategies), which ultimately shapes the product (achieved outcomes). By integrating these stages, the model provides valuable insights for tailoring educational practices to meet diverse learner needs.

Despite extensive research on language teaching models, current approaches often overlook the interplay between cultural diversity and technological advancements in education, particularly in regions such as Saudi Arabia. The Enhanced Adaptive PPP Model bridges this gap by integrating personalized learning strategies with culturally sensitive pedagogical practices. By addressing the unique challenges of Saudi learners—such as balancing traditional values with modern educational technologies—this model offers a tailored framework that enhances both engagement and learning outcomes. Moreover, its emphasis on teacher adaptability and real-time feedback aligns with the needs of technologically integrated classrooms, making it a robust solution for global educational contexts. This contribution not only extends the applicability of existing pedagogical theories but also provides actionable insights for practitioners operating in diverse cultural settings

2.1. Expansion on the PPP Model

1. Presage Stage

The presage stage represents the foundational factors that shape how students engage with the learning process. These include personal attributes, such as prior learning experiences, cultural and educational backgrounds, motivation, and external resources provided by institutions. For Saudi learners, this stage is particularly significant due to the influence of a traditional educational system that often emphasizes rote memorization and teacher-centered methodologies[12].

Example: A Saudi student accustomed to passive learning methods might struggle initially with tasks requiring active participation or independent learning. To address this, educators can design presage-sensitive strategies, such as preparatory activities that gradually introduce collaborative and interactive tasks. These might include guided group projects or role-playing exercises, which help bridge the gap between traditional methods and modern, student-centered approaches. Such interventions enable smoother transitions, fostering readiness for active learning environments.

2. Process Stage

The process stage focuses on how students engage with learning tasks, influenced by their perceptions of the classroom environment, teaching methodologies, and available technologies. This stage highlights the evolution of learners' strategies through interaction with peers, instructors, and instructional materials.

Example: Incorporating culturally relevant content into the curriculum can significantly enhance engagement and motivation for Saudi students. Al-Seghayer[53] emphasizes that project-based learning grounded in local issues or national goals, such as Vision 2030, helps learners find relevance in their tasks. For instance, collaborative projects exploring the economic and social implications of Vision 2030 can stimulate deeper cognitive engagement and foster strategic learning behaviors. According to Cohen[16], such culturally aligned approaches encourage students to process information more deeply and employ strategies that enhance

learning outcomes.

3. Product Stage

The product stage evaluates the results of the learning process, including both measurable academic achievements and broader personal development. In the Saudi context, the effectiveness of language learning is not limited to test scores but also encompasses the ability to communicate effectively in real-life scenarios. Al Fraidan[3] underscores that outcomes should reflect a holistic mastery of language skills, preparing students for professional and societal roles.

Example: Beyond traditional metrics, success can be gauged by students' confidence in using English in conversations, presentations, or written communication. Indicators such as communicative competence and the ability to participate meaningfully in diverse settings are essential measures of learning effectiveness. By prioritizing these broader outcomes, educators can better align language instruction with real-world demands.

3. The Revised PPP Model

Building on these foundational insights, the revised PPP model redefines learning as an ongoing and interactive process, rather than a linear progression. Inspired by frameworks like[1, 54], this updated model, as shown in **Figure 1** below, introduces innovations that emphasize context sensitivity, learner engagement, and the integration of technology with traditional teaching methods.

This iteration acknowledges that the presage, process, and product stages continuously interact, creating feedback loops that refine the learning experience. For instance, insights from the product stage can inform adjustments in the presage and process stages, such as modifying teaching strategies to address observed weaknesses in communicative skills. Additionally, the integration of blended learning environments, combining digital tools with face-to-face instruction, offers students flexible and personalized pathways to engage with content, fostering a deeper connection to their learning journey.

This revised model provides a forward-thinking framework for modern education, encouraging educators to embrace dynamic, adaptable approaches that reflect the complexities of language learning in diverse contexts.

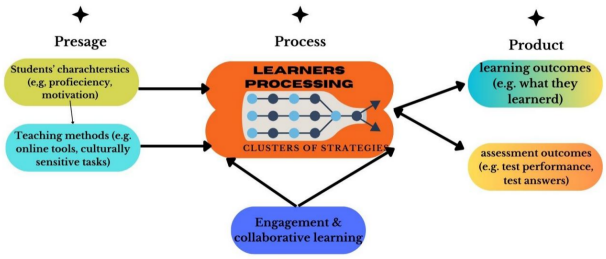

Figure 1. The new PPP model.

3.1. Key Enhancements to the PPP Model

The enhanced Presage, Process, Product (PPP) model emphasizes the interconnectedness and reciprocal relationships among its three stages. Unlike its linear predecessor, this revised framework highlights how changes in one stage can influence and trigger adaptations in the others, creating an adaptive and dynamic learning environment. By embracing this fluid structure, the model supports individualized learning experiences, enhancing overall educational effectiveness and addressing diverse student needs.

3.2. The Interplay between Presage and Process

In the revised model, the presage stage lays the foundation for the learning process, encompassing factors such as students' characteristics (e.g., language proficiency, motivation, and cultural context) and pedagogical elements (e.g., teaching methods, online tools, and culturally relevant content). These presage factors shape how learners engage with their studies and influence the strategies they adopt during the process stage.

For instance, when students perceive their learning environment as supportive, inclusive, and culturally aligned, they are more likely to exhibit proactive learning behaviors and employ effective cognitive and metacognitive strategies. This positive interaction fosters active participation, critical thinking, and deeper engagement with the material.

Example: A teacher in Saudi Arabia might begin a language module with a diagnostic quiz to assess students' readiness and prior understanding. This presage element not only helps the instructor tailor subsequent lessons but also motivates students to plan their learning strategies. If the course content reflects cultural relevance—such as discussing initiatives related to Vision 2030—students are more

likely to engage enthusiastically and use strategies like critical analysis, synthesis, and contextual guessing to deepen their understanding.

3.3. The Influence of Product on Process

A significant enhancement of the revised model is the recognition of the product stage as a feedback mechanism that influences the process stage. This feedback loop encourages continuous refinement of learning strategies, fostering adaptive and self-regulated learning. Outcomes from assessments and tasks guide students in modifying their approaches, resulting in improved performance over time.

Example: A student who receives detailed feedback on an oral presentation highlighting areas for improvement, such as organization and clarity, may adopt metacognitive strategies like self-monitoring, detailed planning, and reflective practice for future tasks. This iterative process ensures that the learning experience remains dynamic, allowing students to leverage insights from past outcomes to inform and enhance their future engagement.

4. Positioning the Enhanced Adaptive PPP Model within Existing Literature

The Enhanced Adaptive PPP (Presage, Process, Product) model represents a significant advancement in the study of test-taking strategies in language assessment. Traditional approaches to language testing often overlook the nuanced interplay between test-takers' perceptions, anxieties, and their ability to perform effectively. This gap in the literature is particularly evident in the context of EFL learners, where cultural and systemic educational factors heavily influence test outcomes. By integrating adaptive feedback mechanisms into the PPP framework, this model addresses these gaps and provides a structured approach to understanding and improving language assessment.

Existing research on test-taking strategies (e.g.,[5, 27] has largely focused on static models that assess performance outcomes without adequately addressing the dynamic interactions between test-taker behavior and instructional interventions. The Enhanced Adaptive PPP model diverges from these approaches by incorporating iterative feedback loops that allow for continuous adjustments based on learner needs. This adaptability not only aligns with modern pedagogical practices but also responds to the growing demand for personalized and context-specific learning strategies in EFL settings.

Moreover, the model's emphasis on aligning test preparation strategies with broader educational goals resonates with recent calls for reform in language education, particularly in Saudi Arabia. The alignment of the model with Vision 2030's objectives underscores its relevance and potential impact. By fostering sustainable improvements in language proficiency and test-taking efficacy, the Enhanced Adaptive PPP model contributes to the realization of a more skilled and globally competitive workforce, as envisioned by Vision 2030.

This theoretical advancement enriches the existing body of knowledge by providing a framework that integrates psychological constructs, such as test anxiety and motivation, with pedagogical principles. It also invites further research to empirically validate the model's efficacy across diverse educational contexts, marking a significant contribution to the field of language assessment.

4.1. Emphasizing Student Characteristics

The updated PPP model places a strong emphasis on understanding individual student characteristics, including cultural background, motivational drivers, and learning preferences. These factors, embedded in the presage stage, profoundly influence how students interact with the learning process and the strategies they adopt. For educators, tailoring instruction to align with these characteristics is key to fostering meaningful engagement and deeper learning.

Example: In a Saudi classroom, designing courses that reflect students' real-world experiences—such as collaborative projects addressing local issues or national priorities like Vision 2030—creates a sense of relevance and connection. Such alignment encourages students to actively participate and employ advanced strategies, including group discussions, problem-solving, and contextual analysis. This culturally responsive approach not only enhances student motivation but also equips them with skills applicable beyond the classroom.

By integrating these key enhancements, the revised PPP model provides a robust and flexible framework for modern education. It underscores the value of reciprocal

interactions among its stages, highlights the importance of feedback loops for continuous improvement, and recognizes the centrality of student characteristics in designing effective learning experiences. This innovative approach transforms the learning process into an adaptive, context-sensitive journey, empowering students to achieve meaningful and lasting outcomes.

4.2. Integrating Digital Tools and Contextual Relevance

The revised PPP model incorporates digital tools and contextual relevance as fundamental components, particularly within the presage and process stages. By utilizing AI-driven learning platforms and adaptive technologies, educators can offer personalized feedback and anticipatory assessments tailored to individual learning needs. These tools not only prepare students for future challenges but also enhance their problem-solving skills through interactive, real-world applications. Online simulations, gamified learning environments, and contextually relevant tasks engage students in practicing strategies they can later transfer to practical scenarios.

For instance, teachers might use diagnostic quizzes (presage) to identify students' strengths and areas for improvement. This data can inform the design of formative assessments that align with students' needs, leading to project-based learning tasks (process) that incorporate real-world relevance. These tasks could include collaborative group presentations or individual writing assignments that require the use of digital tools such as online brainstorming platforms or self-assessment checklists. As students monitor their progress and refine their strategies based on continuous feedback, they develop a deeper understanding of content while honing their metacognitive and collaborative skills.

4.3. A Comprehensive Approach for Saudi Contexts

The revised PPP model emphasizes a balanced and interconnected approach to the presage, process, and product stages, ensuring each contributes dynamically to the learning experience. This holistic framework encourages educators to craft adaptive, culturally relevant, and learner-centered instructional strategies. By blending digital tools with traditional teaching methods, the model bridges academic development and real-world readiness, particularly in contexts such as Saudi Arabia, where education is undergoing significant transformation.

For example, a project-based learning task centered on Vision 2030 might require students to work collaboratively to propose solutions to a local issue. A student who excels in this environment and receives positive feedback may feel motivated to apply similar strategies, such as teamwork and critical analysis, in future assignments. Conversely, a student facing difficulties might explore alternative approaches, including peer learning, online tutorials, or AI-powered study aids. This adaptability illustrates how outcomes from the product stage influence future behaviors in the process stage, reinforcing a continuous cycle of growth and engagement.

By embedding culturally relevant content and leveraging digital resources, educators can create an inclusive learning environment that resonates with students' lived experiences and aspirations. For example, incorporating topics related to Saudi Arabia's socio-economic goals not only enhances students' engagement but also equips them with the skills to contribute meaningfully to their communities. These context-sensitive methods ensure students are not only prepared academically but also empowered to navigate real-world challenges effectively.

4.4. A Dynamic and Responsive Framework

The newly expanded PPP model offers a comprehensive framework that acknowledges the interconnected nature of presage, process, and product stages. It emphasizes the importance of integrating digital tools, culturally relevant content, and continuous feedback loops to create an adaptive learning environment. By fostering this dynamic interplay, the model supports both academic rigor and the cultural and educational needs of students, particularly in Saudi Arabia.

The focus on feedback-driven strategy adaptation ensures that learning remains an evolving process. Students are encouraged to reflect on their successes and challenges, fostering metacognitive awareness and self-regulated learning. This responsiveness prepares learners not only for academic success but also for real-world applications, equipping them with critical thinking, collaboration, and problem-solving skills essential for professional and societal participation.

This iteration of the PPP model redefines traditional educational approaches by aligning instructional methods with modern technological advancements and cultural priorities, ensuring students are prepared for a rapidly changing world.

5. Discussion

The revised PPP (Presage, Process, Product) model offers a nuanced framework for understanding and improving language learning, particularly in contexts like Saudi Arabia, where cultural and educational reforms are reshaping pedagogical practices. Its emphasis on the dynamic interplay among presage, process, and product stages highlights the importance of tailoring education to students' unique characteristics and learning environments. By focusing on presage factors, such as cultural background, prior learning experiences, and motivation, the model ensures that foundational elements are addressed. This is especially significant in Saudi Arabia, where traditional teacher-centered approaches have long influenced education [14]. Diagnostic assessments and culturally relevant content, such as topics related to Vision 2030, create an environment that fosters engagement and aligns with students' lived experiences. Research by Cohen [16] supports the idea that culturally aligned learning environments encourage proactive behaviors and the adoption of effective strategies.

The integration of digital tools and AI-driven platforms enhances the process stage by offering personalized feedback and enabling adaptive learning pathways. These tools, such as online simulations and gamified tasks, promote cognitive engagement and provide opportunities for students to refine their strategies in real time. Al-Seghayer [53] highlights the role of technology in fostering deeper comprehension and critical thinking, which are essential for language learning. Moreover, the use of digital tools supports collaborative and project-based learning, allowing students to tackle real-world scenarios while developing teamwork and problem-solving skills. For instance, group projects on topics related to national priorities, such as Vision 2030, connect learning tasks to real-life applications, reinforcing the relevance of language education.

The product stage in the revised model serves not only as an endpoint but also as a feedback mechanism that informs the process stage. This iterative feedback loop allows students to reflect on their performance, identify areas for improvement, and adjust their strategies for future tasks. Research by Phakiti [5] underscores the importance of metacognitive strategies in fostering self-regulated learning, a process that the PPP model actively promotes. For example, students who receive detailed feedback on their oral presentations can adopt new approaches, such as enhanced self-monitoring and planning, to refine their performance in subsequent assessments. This cyclical relationship between outcomes and strategies ensures continuous growth and engagement.

Cultural relevance is another vital component of the revised model. By integrating content that reflects students' cultural contexts, such as local issues and national goals, the model ensures that learning remains meaningful and motivating. This approach aligns with [55] theory of social constructivism, which emphasizes the role of cultural tools in cognitive development. In Saudi Arabia, this culturally responsive approach not only prepares students for academic success but also equips them with the skills and knowledge needed to contribute effectively to their communities. While the revised PPP model is comprehensive, its implementation poses certain challenges, including ensuring access to digital tools and providing adequate teacher training. Addressing these issues will be critical to maximizing the model's impact and scalability.

5.1. Aligning with Saudi Vision 2030: Transforming Language Education

The Enhanced Adaptive PPP Model is uniquely positioned to support the transformative goals of Saudi Arabia's Vision 2030, particularly in the realm of education and skill development. Vision 2030 underscores the critical role of education in preparing Saudi citizens for a competitive global workforce, emphasizing the enhancement of English language proficiency as a cornerstone of this vision. This initiative recognizes that language proficiency is not merely an academic milestone but a strategic tool for economic diversification and international collaboration.

Saudi Arabia's traditional language education system, characterized by a focus on rote memorization and static assessment practices, often fails to equip learners with the communicative and analytical skills required in global contexts. Vision 2030 advocates for a shift towards more dynamic, interactive, and learner-centered pedagogies, making the Enhanced

Adaptive PPP Model an ideal framework for reform.

This model's adaptive feedback mechanisms resonate with Vision 2030's emphasis on personalized and technology-driven educational solutions. By integrating elements such as real-time feedback, iterative learning loops, and a focus on psychological factors like test anxiety, the Enhanced Adaptive PPP Model aligns seamlessly with the vision's goals. It promotes sustainable learning outcomes by addressing not only what learners achieve but also how they achieve it, fostering a deeper understanding of language use in real-world scenarios.

Furthermore, the model's adaptability allows it to accommodate the diverse needs of Saudi learners across various proficiency levels, enabling a more inclusive approach to language education. This inclusivity aligns with Vision 2030's commitment to equity in educational opportunities, ensuring that all learners—regardless of their starting point—can benefit from tailored instruction and support.

In operationalizing the Enhanced Adaptive PPP Model within the Saudi educational context, policymakers and educators can leverage its potential to reform assessment practices. This reform would not only improve language learning outcomes but also contribute to building a skilled, confident, and globally competitive workforce. By aligning the model with Vision 2030's objectives, this study provides a roadmap for transforming language education in Saudi Arabia, bridging the gap between policy aspirations and classroom realities.

6. Conclusions and Recommendations

The revised PPP model provides a dynamic, interconnected framework that redefines traditional approaches to language learning by integrating presage factors, process strategies, and product outcomes. Its emphasis on feedback loops, digital tools, and culturally relevant content ensures that learning is adaptive, student-centered, and aligned with real-world applications. This makes the model particularly effective in contexts like Saudi Arabia, where transformative educational practices are gaining momentum.

Future research should explore the application of this model in various cultural and educational settings to validate its adaptability and impact. Studies on the long-term effects of the model on learners' critical thinking and communication skills, as well as its comparative performance against other frameworks, would provide valuable insights. Investigations into the professional development needs of educators, particularly regarding technology integration and culturally responsive teaching, are also essential. By addressing these areas, the PPP model can continue to evolve, supporting innovative and effective educational practices globally. Its ability to merge academic rigor with cultural and technological considerations positions it as a leading framework for modern education.

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Institutional Review Board Statement

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Informed Consent Statement

Not applicable.

Data Availability Statement

Data is available upon request.

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Conflict of interest

The author declares no conflict of interest.

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