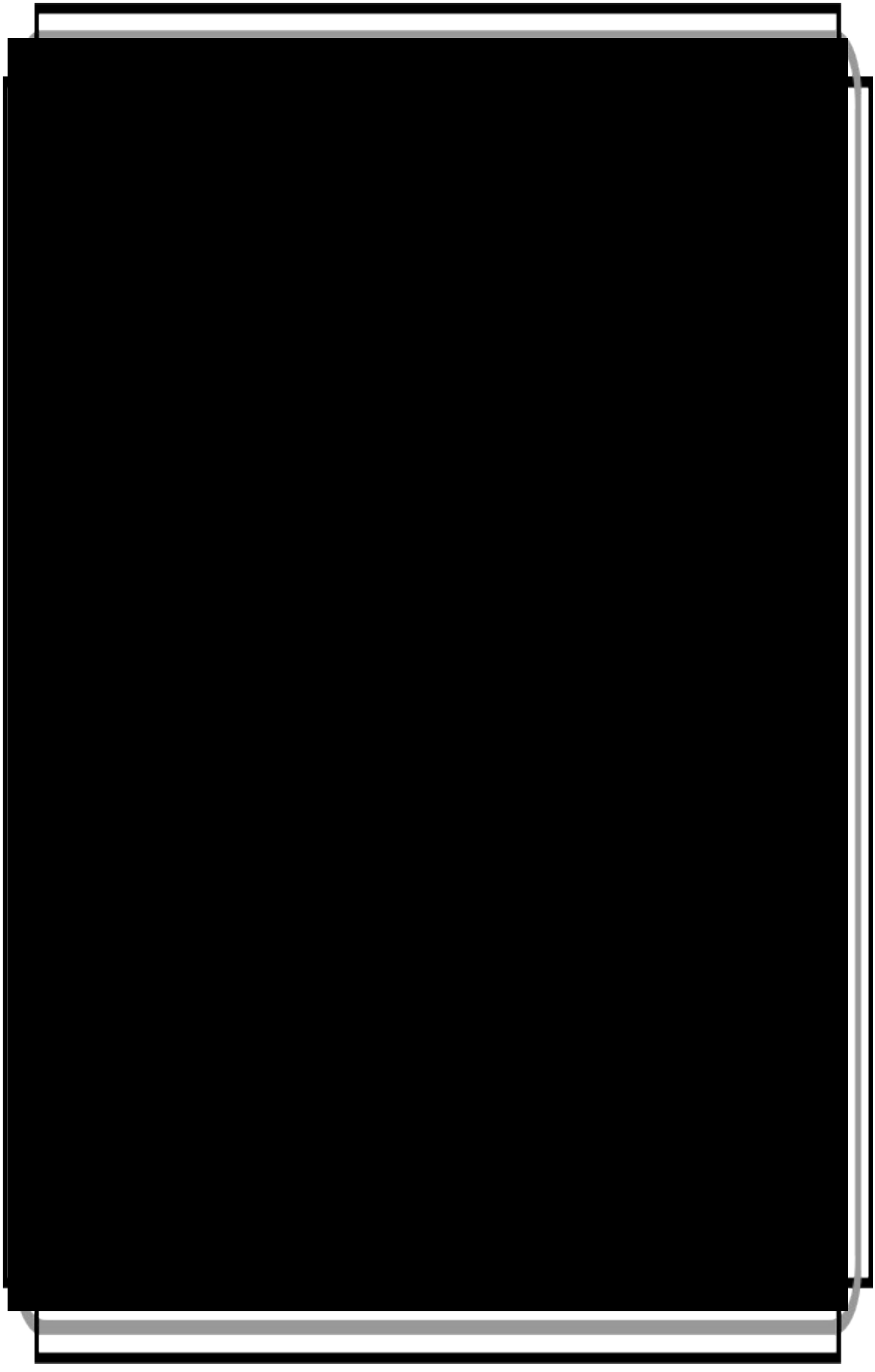

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I. Abstract

Teaching reading skills has been a demanding task among many English teachers due to an array of reasons. Among the four language skills, reading is considered important as it takes students, even gifted ones, a considerable amount of time to learn and enhance. Reading tasks account for 50% of the total score in the National English Competition (NEC). However, students often find it hard to complete them all accurately.

This study explores the integration of Artificial Intelligence (AI) in designing engaging reading tasks for students preparing for the National English Competition (NEC). Recognizing the pivotal role of reading comprehension in such language competitions, the study investigates how AI tools such as ChatGPT, Canva AI, and MagicSchool can assist educators in creating tasks that enhance learner engagement and performance. Employing a qualitative case study methodology involving NEC students, data were collected through task samples, student surveys, and teacher interviews. Findings indicate that AI-generated reading tasks offer increased variety, adaptability, and efficiency, positively influencing students' cognitive, emotional engagement and learning autonomy. However, challenges related to AI content accuracy and teacher preparedness were identified. The study concludes with pedagogical recommendations for teachers and students, emphasizing the potential of AI to revolutionize language teaching learning within competition contexts.

Keywords: Artificial Intelligence, reading comprehension, task design, NEC, English education, learner engagement

II. Introduction

1. Background

Reading comprehension stands as a cornerstone skill in English language acquisition and assessment. This is particularly evident in competitive academic environments such as the National English Competition (NEC), where students are challenged not only to understand texts at a surface level but also to demonstrate sophisticated language abilities including vocabulary mastery, inferencing, prediction, and critical thinking. These skills are essential for academic success and future language proficiency, making the design of effective reading tasks a vital aspect of NEC preparation.

NEC reading tasks are uniquely demanding; they test a combination of linguistic knowledge and cognitive skills under time constraints, requiring students to process and analyze information efficiently and accurately. Preparing learners to meet these demands involves creating tasks that are both cognitively challenging and engaging enough to motivate sustained effort and deep processing. Consequently, task design must strike a delicate balance between difficulty, relevance, and learner engagement to maximize effectiveness.

2. The Role of Artificial Intelligence in Education

In recent years, Artificial Intelligence (AI) has revolutionized various sectors, and education is no exception. The integration of AI technologies in educational settings has introduced unprecedented opportunities for personalized, scalable, and innovative learning experiences. AI-powered applications now assist educators by automating content creation, enabling adaptive assessments, and providing instant, individualized feedback.

Such advancements are particularly valuable in language education, where customization and responsiveness to individual learner needs are crucial. AI systems can analyze learner data to tailor materials and challenges to each student's proficiency level and learning style, fostering more effective and motivating experiences. Furthermore, AI's ability to

generate diverse and contextually relevant content rapidly helps address the time constraints and resource limitations often faced by educators.

3. Rationale for AI Integration in Reading Task Design

Traditional methods of designing reading comprehension tasks tend to be static and labor-intensive, often relying on manual selection or creation of texts and questions. This approach limits the range of materials available and constrains the ability to tailor tasks to individual or group needs dynamically. Given the diverse learner profiles in NEC preparation, from varying proficiency levels to different learning styles, there is a pressing need for more flexible, adaptive, and engaging task design methods.

Integrating AI into the reading task design process offers several promising advantages. AI can generate a wide variety of reading materials and question types, adapt difficulty levels according to learner profiles, and incorporate thematic or linguistic features aligned with NEC standards. This adaptability supports differentiated instruction, helping to meet the unique needs of each student. Additionally, AI-generated tasks can incorporate elements that foster learner engagement, such as interactivity, contextual relevance, and cognitive challenge, which are vital to sustained motivation and deep comprehension.

For NEC preparation specifically, AI's capacity to simulate competition-style materials and tailor complexity levels swiftly offers an innovative means of enhancing both the quality and quantity of practice opportunities, potentially leading to improved learner outcomes.

4. Research Aims and Questions

This thesis seeks to investigate the application of AI in designing engaging and effective reading tasks for NEC students. By exploring the integration of AI tools within the task design process, this study aims to evaluate how such technologies can support both educators and learners in meeting the rigorous demands of NEC reading comprehension.

The core research questions guiding this inquiry are:

- How can AI be harnessed to design reading tasks that align with NEC requirements in terms of content, format, and cognitive demand?
- What impact do AI-generated reading tasks have on learner engagement, motivation, and reading performance compared to traditional tasks?
- What are the practical benefits and limitations of employing AI for reading task design in the context of NEC preparation, from the perspectives of both teachers and students?

By addressing these questions, the study intends to contribute to the growing body of knowledge on AI-enhanced language education and provide actionable insights for educators and developers who aim to optimize reading task design for competitive English learners.

5. Structure of the Thesis

The thesis proceeds with a comprehensive literature review (Chapter 2), followed by methodology (Chapter 3), implementation and examples (Chapter 4), results and discussion (Chapter 5), and concludes with pedagogical implications and recommendations (Chapter 6).

III. Literature Review

1. Reading Comprehension and Task Design

Reading comprehension is widely recognized as an active process wherein readers construct meaning by interacting with texts and integrating their background knowledge (Smith et al. 2021). This complex process relies on multiple cognitive mechanisms, including decoding, working memory, inference-making, and metacognitive regulation. Accordingly, task design must consider how these mechanisms operate to facilitate comprehension effectively.

Cognitive Load Theory (Sweller, 1988) explains that learners possess limited working memory resources. Tasks that impose excessive extraneous cognitive load, such as complicated instructions or unfamiliar vocabulary, can impair comprehension. Therefore, well-designed reading tasks aim to minimize extraneous load and optimize intrinsic load by scaffolding text complexity in alignment with learner ability (Paas et al., 2003). For example, pre-teaching key vocabulary or providing graphic organizers can reduce cognitive strain.

Scaffolding, rooted in Vygotsky's (1978) Zone of Proximal Development, involves providing learners with temporary support structures that enable task completion beyond their independent capabilities. In reading comprehension, this might include guiding questions, glossaries, or sentence starters that gradually fade as learners gain autonomy (Lantolf & Poehner, 2014). This dynamic support promotes confidence and deeper engagement with texts.

Bloom's Taxonomy (Bloom, 1956) offers a hierarchical framework that has influenced reading task construction. Through targeting varying cognitive levels, ranging from remembering and understanding to analyzing and creating, tasks encourage learners to engage with text both superficially and deeply. While lower-level questions might focus on recalling facts or main ideas, higher-order questions demand synthesis, such as comparing viewpoints or evaluating author intent. Such diversity in cognitive demand not only develops comprehension skills but also critical thinking competencies essential for competitive contexts like the NEC.

Effective reading tasks also incorporate active learning strategies such as prediction, inference, and synthesis. Prediction tasks, where learners anticipate text content or outcomes, activate prior knowledge and generate curiosity, increasing engagement (Afflerbach et al., 2008). Inference-making tasks encourage learners to derive implicit meanings from explicit clues, bridging gaps between information and constructing richer understanding (Cain & Oakhill, 2011). Synthesis involves integrating disparate information from a text or multiple sources, fostering analytical thinking and memory retention (Kintsch, 1998).

In addition to this, metacognitive strategies,such as self-questioning, summarizing, and monitoring comprehension, are crucial to task design as they empower learners to regulate their own understanding and employ repair strategies when confusion arises (Baker & Brown, 1984). Including reflective prompts within tasks encourages metacognition and promotes lifelong reading skills.

In conclusion, effective reading task design requires an intricate balance between cognitive load management, scaffolding, hierarchical objectives, and active learner involvement to cultivate comprehensive reading abilities and higher-order thinking.

2. Characteristics of NEC Reading Tasks

The National English Competition (NEC) represents a high-stakes testing environment where reading tasks are strategically designed to evaluate advanced English language proficiency. These assessments serve dual purposes: they function as rigorous evaluation instruments while simultaneously acting as pedagogical tools that guide learners toward

sophisticated linguistic competence, cognitive agility, and strategic reading skills essential for academic and professional success.

2.1. Text Authenticity and Thematic Complexity

NEC reading passages are characterized by their authentic and semi-authentic nature, deliberately incorporating real-world discourse across narrative, expository, and argumentative genres. While these texts may be adapted for language level appropriateness, they retain essential challenging features including thematic complexity, varied sentence structures, and domain-specific vocabulary that mirrors academic and professional contexts.

Such authenticity is further reinforced through the competition's broad thematic scope, encompassing environmental issues, cultural traditions, scientific discoveries, and social phenomena. Such thematic diversity serves multiple interconnected purposes: it exposes learners to extensive lexical ranges, challenges engagement with unfamiliar topics, and simultaneously develops both linguistic competence and world knowledge necessary for comprehensive understanding. The combination of authentic materials and diverse themes creates a testing environment that reflects real-world reading demands while building cultural literacy alongside language skills.

2.2. Cognitive Assessment and Strategic Reading Skills

NEC tasks employ multiple-choice comprehension questions that systematically assess various cognitive levels, from basic identification of main ideas and supporting details to complex inference and prediction tasks. These questions are strategically designed to test not only literal comprehension but also the ability to read beyond the surface text, connecting ideas and anticipating outcomes—skills fundamental to critical reading proficiency.

The assessment framework particularly emphasizes contextual vocabulary application, where students must demonstrate understanding based on collocations, idiomatic usage, and discourse context rather than isolated definitions. This approach directly connects to the competition's focus on critical thinking, as vocabulary questions require semantic flexibility while inference tasks demand analytical reasoning. Together, these elements challenge rote memorization and foster the kind of flexible, strategic thinking necessary for academic success.

2.3. Performance Pressure and Skill Integration

A defining characteristic of NEC reading tasks is the integration of time pressure with comprehensive skill assessment. Strict time limits create conditions that test not only accuracy but also speed-reading abilities, information processing efficiency, and strategic decision-making. This temporal constraint connects directly to the competition's emphasis on critical thinking, as students must rapidly evaluate arguments, recognize bias or propaganda techniques, and draw conclusions from incomplete information under pressure.

The time-pressured environment also reinforces the importance of contextual vocabulary knowledge and strategic reading techniques such as effective scanning. Students cannot rely on careful, leisurely analysis but must demonstrate automatic recognition of linguistic patterns and rapid comprehension of complex ideas. This integration of speed and accuracy reflects real-world academic and professional reading demands where efficient information processing is essential.Overall, NEC reading tasks function not only as assessment instruments but as pedagogical tools that guide learners toward advanced

linguistic competence, cognitive agility, and strategic reading—all necessary for success in national and international academic competitions.

3. Educational Technology and AI in Language Learning

Artificial Intelligence (AI) has emerged as a transformative force in educational technology, offering innovative solutions for personalized, adaptive, and scalable language learning. In recent years, AI-powered platforms have expanded their capabilities from basic content delivery to sophisticated tools that automate task generation, provide immediate feedback, and facilitate learner analytics (Li & Wang, 2023).

ChatGPT, an example of a large language model developed by OpenAI, utilizes deep learning and natural language processing to generate coherent, contextually relevant texts and questions. Its ability to tailor outputs to specific themes, difficulty levels, and linguistic focuses makes it a versatile tool for designing customized reading comprehension tasks. Teachers can input parameters such as target vocabulary, grammatical focus, or cognitive skill level, allowing AI to produce materials aligned with specific learning objectives.

Other tools, such as Quillionz, specialize in automated question generation. By inputting texts, teachers receive generated multiple-choice, true/false, and short-answer questions almost instantly. This automation greatly reduces the time and effort involved in assessment preparation while allowing frequent formative assessments that monitor learner progress and guide instruction.

ReadTheory and similar adaptive platforms utilize AI algorithms to adjust reading passages and questions in real-time based on individual learner responses. This ensures tasks remain appropriately challenging, preventing learner frustration or boredom. Adaptive learning supports mastery-based progression and encourages sustained engagement.

The benefits of AI integration in language learning are multifaceted:

- Efficiency Gains: AI reduces teacher workload in task preparation and grading, allowing more time for instruction and personalized support.
- Personalization: AI's capacity to analyze learner data facilitates tailored content delivery, aligning with differentiated instruction principles.
- Enhanced Engagement: Varied formats (e.g., interactive quizzes, gamified tasks) enabled by AI tools increase learner motivation.
- Real-time Feedback: Instant feedback supports error correction and metacognitive awareness, accelerating learning cycles.

Nevertheless, challenges remain. AI-generated content may occasionally contain factual errors, linguistic inaccuracies, or culturally inappropriate material, requiring vigilant teacher review (Smith, 2022). Ethical concerns also arise regarding data privacy, algorithmic bias, and potential over-reliance on technology at the expense of human interaction and critical pedagogy. In addition to this, effective AI integration demands adequate teacher training and infrastructure. Without understanding AI's capabilities and limitations, educators risk underutilizing or misapplying these tools, diminishing their pedagogical potential. Therefore, while AI holds significant promise, its implementation should be guided by sound pedagogical principles, continuous evaluation, and a commitment to complement rather than replace human expertise in language education.

4. Learner Engagement in Reading Tasks

Learner engagement is a critical determinant of academic success, encompassing behavioral, cognitive, and emotional domains that collectively influence how deeply students interact with reading tasks and materials (Fredricks et al., 2004).

Behavioral engagement involves observable actions such as effort, persistence, attention, and participation in learning activities. In the context of reading tasks, behaviors like completing tasks on time, responding thoughtfully to questions, and following instructions are indicators of engagement. Research suggests that incorporating interactive elements, such as clickable quizzes or peer discussions, can increase behavioral engagement by making tasks more dynamic and participatory (Appleton et al., 2008).

Cognitive engagement refers to the psychological investment and strategic effort learners devote to mastering reading materials. It involves self-regulation, use of metacognitive strategies, and willingness to tackle challenging texts. Reading tasks that encourage higher-order thinking (analysis, synthesis, evaluation) foster deeper cognitive engagement by pushing learners beyond passive reading to active meaning construction (Wang & Guthrie, 2004). Tasks that link reading content to learners' prior knowledge or interests also enhance cognitive involvement.

Emotional engagement includes affective responses such as interest, enjoyment, and motivation related to reading activities. Positive emotional engagement increases persistence and improves overall learning outcomes. Authentic, meaningful texts and culturally relevant topics are known to enhance emotional connection and motivation (Guthrie & Wigfield, 2000). Conversely, repetitive or overly difficult tasks may lead to frustration and disengagement.

Studies indicate that maximizing learner engagement requires designing reading tasks that are meaningful, appropriately challenging, and contextually relevant. Meaningful tasks connect to learners' lives and goals, promoting intrinsic motivation. Appropriate challenge maintains the "zone of proximal development," preventing boredom and anxiety. Contextual relevance situates reading within real-world or simulated scenarios that learners perceive as valuable, enhancing both emotional and cognitive engagement (Schraw et al., 2006). Moreover, feedback mechanisms and social interaction opportunities embedded in reading tasks support engagement by providing reinforcement, clarifying misunderstandings, and fostering collaborative learning communities.

To summarize, designing reading tasks with a holistic view of learner engagement improves not only comprehension outcomes but also motivation, persistence, and lifelong reading habits, critical attributes for NEC students facing rigorous

IV. Methodology

1. Research Design

This study employed a qualitative case study design to investigate the utilization of Artificial Intelligence (AI) tools in designing reading tasks tailored for National English Competition (NEC) students. The case study approach was chosen due to its strength in providing a rich, contextualized understanding of complex phenomena, in this instance, the intersection of AI-assisted task design and learner engagement within a competitive educational setting (Yin, 2018).

This qualitative framework allowed for an in-depth exploration of how AI-generated materials are developed, implemented, and received by learners, as well as how teachers perceive their integration into instructional practices. The focus was on the process, experiences, and outcomes associated with AI usage rather than on generalizable statistical inferences, making this design appropriate for the exploratory aims of the study.

2. Participants

The study involved 20 NEC students aged between 16 and 17 years old, representing intermediate to upper-intermediate English proficiency levels (C1 to C2 on the CEFR scale). These participants were recruited from a well-established English training center renowned for its preparation programs for competitive English exams. The selected age range and proficiency levels reflect the typical demographic of NEC participants, ensuring the relevance of findings to the target population.

In addition to students, two experienced NEC instructors who facilitated the implementation of reading tasks participated in semi-structured interviews. Their insights provided valuable perspectives on the pedagogical implications, challenges, and practical considerations of integrating AI tools into reading task design.

3. Tools

To explore how Artificial Intelligence can enhance reading task design for NEC students, this study utilized a diverse set of AI-powered platforms, each chosen for its specific capabilities in generating, adapting, presenting, and analyzing reading tasks aligned with NEC standards. These tools collectively formed a comprehensive AI ecosystem to support task design, learner engagement, and performance tracking.

3.1. AI Content & Question Generation Tools

- **ChatGPT (OpenAI)**
  Function: An advanced language model used to generate authentic, high-level reading passages and diverse comprehension questions (multiple-choice, inference, vocabulary in context). ChatGPT's versatility allowed tailoring content to NEC themes and linguistic complexity.
  Sample Task: A 650-word passage adapted from a scientific article on algorithmic bias in healthcare, followed by inference and vocabulary questions.
- **Conker (by Mote Technologies)**
  Function: Generates AI-based quizzes from any webpage or passage, integrating with Google Forms for easy student access.
  Strength: Streamlines quiz distribution and data collection.
  Sample Task: Creating instant comprehension checks from online news articles relevant to NEC current events themes.
- **Diffit**
  Function: Adapts any reading text to various levels and produces comprehension questions automatically.
  Use in NEC Prep: Supports differentiated instruction by matching tasks to different learner levels.
  Sample Task: Adapting a challenging environmental report to B2/C1 level with 8 comprehension questions.
- **Quizgecko**
  Function: Automatically converts reading passages into multiple-choice, true/false, and short-answer questions.
  Use in NEC Prep: Enables rapid generation of practice questions aligned with authentic texts, easing teacher workload.
  Sample Task: Transforming an article on climate change effects into a quiz with 15 questions for targeted practice.

- **QuestionWell**
  Function: Instantly generates standards-aligned multiple-choice questions from user-supplied passages, supporting export to Kahoot, Quizizz, or Google Forms.
  Use in NEC Prep: Quick creation of varied question types mapped to reading skills.
  Sample Task: Converting a 600-word history text into 15 well-crafted comprehension questions.
- **Quillionz**
  Function: Uses NLP to automatically generate multiple-choice, short-answer, and true/false questions from any input text.
  Use in NEC Prep: Quickly develops comprehension checks, summary questions, and vocabulary-in-context items aligned with competition themes.
  Sample Task: Feeding a 500-word passage on renewable energy to create 10 comprehension and vocabulary questions.
- **Scribe AI**
  Function: Summarizes long texts and creates comprehension questions focusing on main ideas and summaries.
  Use: Useful for scaffolding complex readings and developing summarizing skills.
  Sample Task: Producing a concise summary and related questions from a 900-word ecology article.
- **• Yippity**
  Function: Question-generation engine specializing in generating quiz questions from web content or pasted text, including distractors and explanations.
  Use in NEC Prep: Supports quick formative assessments after reading practice.
  Sample Task: Generating 20 multiple-choice questions on a text about global health challenges, with explanations for each choice.

3.2. Adaptive Learning and Feedback Tools

- **Amira Learning**
  Function: Uses AI voice recognition to assess oral reading fluency and provide adaptive comprehension questions with instant feedback.
  Use: Supports reading aloud practice while building comprehension in preparation for NEC spoken components or interviews.
  Sample Task: Listening to a student read a passage on science topics and asking inferential questions based on errors detected.
- **DreamBox Reading**
  Function: Adaptive literacy platform that tailors reading tasks using AI-driven performance data.
  Use: Guides NEC students through progressively challenging texts and strategies for skimming, scanning, and deep reading.
  Sample Task: Delivering progressively harder passages on social topics, adjusting in real time as the student masters questions.
- **Carnegie Learning's MATHia Reading Companion**
  Function: An AI tutor originally built for math but now expanding reading modules with adaptive question delivery.
  Use: Integrates cross-curricular reading practice while monitoring comprehension and vocabulary retention.
  Sample Task: Embedding short science texts with comprehension check questions adapted to the student's reading speed and accuracy.

- **Lexia PowerUp Literacy**
  Function: Adaptive program combining vocabulary, comprehension, and grammar training based on real-time learner data.
  Use: Provides NEC students targeted skill-building with frequent feedback on progress.
  Sample Task: Providing targeted vocabulary in academic English after analyzing mistakes in a practice text.
- **ReadTheory**
  Function: Adaptive platform that adjusts reading passage difficulty based on student responses, offering instant feedback and detailed analytics.
  Use: Monitors learner progress and customizes challenge levels to optimize NEC reading skills development.
- **Knowji**
  Function: AI-powered vocabulary learning tool using spaced repetition and contextual examples.
  Use: Supports NEC students in mastering essential vocabulary through smart flashcards and quizzes integrated into reading tasks.
- **Smart Sparrow**
  Function: Adaptive learning platform that personalizes reading content and tasks in real time, based on learner interactions.
  Use: Helps NEC students build strategic reading skills with branching pathways and immediate corrective feedback.
  Sample Task: Adjusting question difficulty during a reading comprehension activity on climate change depending on student answers.

3.3. Gamified and Interactive Reading Tools

• BookWidgets

Function: Enables creation of interactive exercises (crosswords, timelines, quizzes) related to reading passages.
Use: Enhances retention through active engagement with reading content.
Sample Task: Creating a crossword puzzle based on vocabulary from a passage on biodiversity.

• Classkick

Function: Allows real-time student task completion and feedback with AI-assisted grading.
Use: Facilitates live reading practice sessions with immediate teacher and AI support.
Sample Task: Students complete a cloze reading exercise on social media effects with instant teacher feedback during class.

• Gimkit

Function: Combines quiz-based learning with elements of strategy and in-game currency to reward correct answers.
Use: Sustains attention during advanced reading practice with a “level-up” incentive system.
Sample Task: Students answer comprehension questions on a climate change passage to earn points to buy game upgrades.

• Kahoot!

Function: Game-based learning platform allowing teachers to create interactive quizzes, polls, and challenges with music and animations.
Use: Increases student excitement and participation in reading tasks.

Sample Task: Multiple-choice quiz on the main ideas of a passage about cultural diversity, with live leaderboards.

• **MagicSchool**
Function: Creates interactive, gamified reading exercises with embedded quizzes, timed challenges, and instant feedback to increase motivation and engagement.
Sample Task: Gamified reading of a space exploration passage, with time-limited vocabulary matching and inference questions.

• **Nearpod**
Function: Interactive lesson tool that integrates reading passages, polls, open-ended questions, and live quizzes in one platform.
Use: Supports active participation and formative assessment during reading comprehension classes.
Sample Task: Embedding a nonfiction text on artificial intelligence with checkpoints for summarizing and predicting content.

• **Pear Deck**
Function: Interactive slide add-on for Google Slides that supports comprehension questions, drag-and-drop tasks, and polls.
Use: Allows teachers to gamify reading passages while tracking real-time student thinking.
Sample Task: Presenting a passage on environmental policy with drag-and-drop inference questions during a live lesson.

• **Quizizz**
Function: Gamified quiz platform with adaptive question delivery, timers, and live leaderboards to boost motivation.
Use: Makes NEC reading practice engaging through competitive quizzes with instant explanations.
Sample Task: Hosting a timed reading quiz on a global warming passage, with instant feedback and score rankings.

3.4. Visual and Layout Design Tools with AI

- **Adobe Express (formerly Adobe Spark)**
  Function: Provides an easy-to-use platform to design visually engaging reading tasks, posters, and infographics.
  Use: Helps teachers present academic reading materials with appealing layouts and consistent typography.
  Sample Task: Creating an infographic-style worksheet on the impacts of deforestation with key academic vocabulary highlighted.
- **Canva AI**
  Function: Designs professional, learner-friendly reading task layouts with diagrams, charts, and infographics.
  Use: Improves task clarity and motivation through attractive and consistent formatting.
  Sample Task: Building a reading worksheet on renewable energy with thematic icons and highlighted keywords.
- **Genially**
  Function: Enables creation of interactive, visually rich presentations with pop-ups, quizzes, and clickable elements.
  Use: Adds engaging layers to academic reading tasks with visuals and comprehension questions.

Sample Task: Creating an interactive reading slide on climate change with clickable definitions and comprehension checks.

- **H5P**
  Function: Open-source tool for developing interactive reading activities including cloze, drag-and-drop, and multiple-choice tasks.
  Use: Embeds questions directly into academic reading passages for immediate student feedback.
  Sample Task: Creating an interactive fill-in-the-blank activity on a global warming text with instant feedback.
- **Lucidpress (Marq)**
  Function: Professional-grade design and publishing tool for polished print or digital reading handouts.
  Use: Supports consistent, high-quality NEC-style reading materials.
  Sample Task: Formatting a multi-page reading comprehension booklet with glossary sidebars and vocabulary notes.
- **Microsoft Designer / Copilot (PowerPoint/Word)**
  Function: Suggests professional formatting and layouts for reading worksheets automatically.
  Use: Enhances readability and consistent visual style of NEC reading materials.
  Sample Task: Transforming a reading passage on cultural heritage into a clean, sectioned worksheet with headings and boxed questions.
- **Tome AI**
  Function: Storytelling and presentation AI that creates visually enhanced, multi-modal reading passages with integrated questions.
  Use: Simulates NEC-style reading practice with added visuals and interaction.
  Sample Task: Building a presentation combining a text on smart cities with embedded multiple-choice and short-answer questions.
- **Visme**
  Function: Platform for creating professional infographics, presentations, and interactive documents.
  Use: Supports academic reading tasks with engaging visuals and data representations.
  Sample Task: Designing an infographic-based reading task about carbon footprints with key figures and statistics clearly visualized.

3.5. Data Analysis and Student Tracking

- **Edpuzzle AI**
  Function: Embeds comprehension questions in videos and tracks student answers.
  Use: Supports multimodal reading tasks combining text and video content for NEC prep.
  Sample Task: Integrating a documentary video on climate change with embedded multiple-choice and short-answer questions to assess reading-related vocabulary and key ideas.
- **Classkick**
  Function: Enables live student responses to reading tasks, with teacher and AI-assisted feedback tracking progress in real time.
  Use: Supports formative assessment by giving teachers immediate insight into student comprehension and engagement during reading lessons.

Sample Task: Monitoring student responses to an inference question on a reading passage and providing live hints.

- **Curipod**
  Function: AI lesson planner integrating quizzes, polls, and tasks with real-time engagement tracking.
  Use: Monitors classroom-wide reading task engagement and performance.
  Sample Task: Embedding a reading passage on climate change into an interactive lesson with polls and comprehension quizzes, then tracking which students engage with each question in real time.
- **Formative (goformative.com)**
  Function: Allows teachers to upload reading passages and embed diverse question types with instant student tracking.
  Use: Provides detailed data on student answers, time on task, and accuracy.
  Sample Task: Embedding short-answer and multiple-choice questions into a reading about renewable energy, with real-time scoring and analysis.
- **Socrative**
  Function: Live assessment tool to track student understanding with multiple-choice, short-answer, and true/false questions.
  Use: Gathers instant data for reading comprehension checks and class-level patterns.
  Sample Task: Launching a quick quiz after a reading on urban sustainability to see which students need reteaching.
- **Ziplet**
  Function: Real-time feedback tool that collects student responses on reading tasks and aggregates class data.
  Use: Encourages anonymous feedback or quick polls about reading task difficulty and interest.
  Sample Task: Asking students to rate the challenge level of a complex reading comprehension task.
- **Quizizz Reports**
  Function: Generates detailed reports on student responses, accuracy rates, and question-level analysis from gamified reading quizzes.
  Use: Allows teachers to identify patterns and target support for struggling learners.
  Sample Task: Reviewing question-level data after a reading comprehension game about climate change to find common errors.

V. Implementation and Examples

1. Designing Reading Tasks with AI

Using ChatGPT, reading passages relevant to NEC themes were generated with adjustable length and vocabulary complexity. Comprehension questions were crafted to address literal, inferential, and evaluative levels. Canva AI enhanced task presentation by embedding visuals and organizing question formats clearly.

Sample 1: Climate Change Effects

Passage (approx. 700 words)

The global climate system has experienced significant warming over the past century, with average surface temperatures rising by approximately 1.1°C since the pre-industrial era. This warming has led to a cascade of environmental changes, including increased

frequency and intensity of extreme weather events such as heatwaves, heavy precipitation, and tropical cyclones. These changes are attributed primarily to anthropogenic greenhouse gas emissions, which have increased atmospheric concentrations of carbon dioxide, methane, and nitrous oxide to unprecedented levels.

One of the most visible impacts of climate change is the accelerated melting of polar ice caps and glaciers, contributing to a steady rise in global sea levels. Coastal regions face heightened risks of flooding, erosion, and salinization of freshwater resources, posing threats to human settlements and biodiversity. Furthermore, ocean warming and acidification disrupt marine ecosystems, affecting fisheries and coral reefs, which are vital for food security and coastal protection.

Climate change also exacerbates terrestrial ecosystem stress, altering species distributions, phenology, and productivity. Shifts in temperature and precipitation patterns affect agricultural yields, with vulnerable regions—particularly in the tropics and subtropics—experiencing increased food insecurity. Additionally, climate-driven changes impact human health by increasing the spread of vector-borne diseases and heat-related illnesses.

Mitigation efforts focus on reducing emissions through renewable energy adoption, energy efficiency improvements, and carbon capture technologies. Adaptation strategies include developing resilient infrastructure, enhancing early warning systems, and promoting sustainable land and water management. However, the effectiveness of these measures depends on international cooperation and immediate action, as delays increase the risks of irreversible damage.

Source: Adapted from IPCC Sixth Assessment Report (2021), Summary for Policymakers
IPCC, 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

Comprehension Questions (multiple choice / Quizgecko format)

1. What is the primary cause of recent global warming?
   a) Volcanic activity
   b) Increased greenhouse gas emissions
   c) Natural solar cycles
   d) Deforestation
2. Which of the following is NOT an effect of melting polar ice caps mentioned in the passage?
   a) Rise in global sea levels
   b) Increased freshwater availability
   c) Flooding of coastal regions
   d) Erosion of shorelines
3. How does ocean acidification primarily affect marine life?
   a) By increasing ocean temperatures
   b) By disrupting coral reefs and fisheries
   c) By reducing salinity
   d) By expanding marine habitats
4. Which region is most vulnerable to food insecurity due to climate change?
   a) Polar regions
   b) Temperate forests
   c) Tropics and subtropics
   d) Deserts
5. What are key components of adaptation strategies listed in the passage?
   a) Renewable energy and carbon capture
   b) Resilient infrastructure and early warning systems

c) Fossil fuel subsidies
d) Increased industrial production

Step-by-Step Design Using AI Tools

Step 1: Input the Passage to an AI Language Model (e.g., ChatGPT)

Prompt example:

"Create 5 multiple-choice questions based on this passage about climate change effects. Each question should have 4 answer options (a–d), with only one correct answer. Questions should test key details and understanding."

(Paste your passage text after this prompt)

Step 2: Review and Edit AI-Generated Questions

- Check question clarity and relevance.
- Ensure distractors (wrong options) are plausible but clearly incorrect.
- Adjust wording for your target level (B2, C1, etc.).

Step 3: Format Questions for Quiz Tools

- Use a clean format with question number, question text, and answer options aligned neatly.
- Highlight or mark the correct answer clearly (for answer keys).

Example:

1. What is the primary cause of recent global warming?

a) Volcanic activity

b) Increased greenhouse gas emissions

c) Natural solar cycles

d) Deforestation

Step 4: Automate Quiz Creation (Optional)

- Upload the question set to platforms like Quizgecko or Socrative which can parse MC questions directly and create interactive quizzes.
- Some platforms allow bulk upload via CSV or formatted text.

Step 5: Generate Distractor Analysis and Feedback (Advanced)

- Use AI to produce explanations for why each answer is right or wrong.
- Example prompt to AI:
  "For each MC question, provide a brief explanation for the correct answer and why the other options are incorrect."

Sample 2: In the passage below, six paragraphs have been removed. For questions 1-6, read the passage and choose from paragraphs A-G the one which fits each gap. There is ONE extra paragraph which you do not need to use. Write your answers in the corresponding numbered boxes provided.

The Vanishing Arctic Ice

The Arctic region is undergoing some of the most rapid and significant climatic changes on the planet. Each year, vast areas of sea ice melt away during the summer months, exposing open waters that have been frozen for millennia. This ongoing transformation affects not only local ecosystems but also global climate patterns.

1.	

The Arctic ice cap acts as a reflective shield, bouncing sunlight back into space and helping regulate the Earth's temperature.

However, as the ice melts, darker ocean water absorbs more solar radiation, accelerating warming in a process known as the ice-albedo feedback. This feedback loop exacerbates the melting and contributes to rising global temperatures.

2.	

The loss of sea ice has profound impacts on native species such as polar bears, seals, and walruses that depend on the ice for hunting, breeding, and shelter. As their habitat diminishes, these animals face increasing challenges to survival, including food scarcity and greater exposure to predators.

3.	

Some indigenous communities that have lived in the Arctic for generations are also affected. Traditional ways of life, including hunting and fishing practices, are disrupted as wildlife patterns shift and travel over ice becomes dangerous. These changes have both cultural and economic repercussions.

4.	

Efforts to monitor the Arctic involve satellite imagery, on-site observations, and climate modeling. These tools provide critical data that help scientists predict future changes and inform global policies aimed at mitigating climate change. International cooperation is essential due to the shared nature of the Arctic environment.

5.	

Despite global commitments to reduce greenhouse gas emissions, current measures have proven insufficient to halt ice loss. Many experts warn that without drastic action, the Arctic could become nearly ice-free in summer within decades, profoundly altering weather systems and sea levels worldwide.

6.	

Scientists are also studying the potential release of methane from thawing permafrost in the Arctic, which could further accelerate global warming. This feedback mechanism represents a critical area of research, highlighting the interconnectedness of climate systems.

The missing paragraphs:

A. The Arctic's unique environment has made it a focus for scientific research and environmental advocacy. Organizations worldwide have launched expeditions to better understand the rapid changes taking place and to raise awareness about the consequences of a warming planet.

B. This accelerating trend is linked closely to human activities such as the combustion of fossil fuels, deforestation, and industrial pollution, all of which increase greenhouse gas concentrations and trap heat in the atmosphere.

C. Additionally, melting ice opens new maritime routes, raising geopolitical and economic questions concerning sovereignty, resource extraction, and environmental protection in the fragile Arctic region.

D. The indigenous peoples' knowledge is increasingly being integrated into scientific research to develop more comprehensive strategies for adaptation and conservation.
E. Although the Arctic is one of the coldest regions on Earth, recent summers have recorded unprecedented temperatures, breaking historical records and alarming scientists globally.
F. Moreover, changes in the Arctic are connected to shifts in weather patterns far beyond the polar region, including altered jet streams and more frequent extreme weather events in temperate zones.
G. International bodies like the Arctic Council play a key role in fostering cooperation among nations to address environmental challenges and promote sustainable development in the region.

Source: Adapted from National Aeronautics and Space Administration (NASA). (2022). *Arctic Sea Ice Decline and Its Global Impact*. Retrieved from https://climate.nasa.gov/news/3067/arctic-sea-ice-decline-and-its-global-impact/

Step-by-Step Design Using AI Tools

Step 1. Select and Adapt Authentic Source Text

- **Tool:** *ChatGPT* (or any advanced LLM)
- **How:** Provide ChatGPT with the scientific source URL or upload the text. Ask it to generate a simplified yet advanced-level (C1/C2) adaptation of the scientific article, maintaining key facts and vocabulary, about 600–1000 words.
- **Example prompt:**
  "Please adapt this NASA article about Arctic sea ice decline into a 700-word C1-level reading passage suitable for NEC students."

Step 2. Create the Main Passage & Identify Logical Gaps

- **Tool:** *ChatGPT* or manual annotation
- **How:** From the adapted passage, select 6–8 key paragraphs to remove for the gap-fill. The AI can suggest which paragraphs to remove to create a coherent and challenging matching task.
- **Example prompt:**
  "Divide this passage into paragraphs and suggest which ones could be removed for a matching paragraph gap-fill task, ensuring one extra paragraph remains."

Step 3. Generate Distractor Paragraphs

- **Tool:** *ChatGPT*
- **How:** Ask AI to generate plausible distractor paragraphs that are thematically related but do not fit any gap. This makes the task challenging but fair.
- **Example prompt:**
  "Write one extra paragraph about the Arctic environment that fits the topic but doesn't logically complete any gaps in the passage."

Step 4. Create Comprehension Questions

- **Tool:** *Quizgecko* or *Scribe AI*
- **How:** Use Quizgecko to generate multiple-choice, true/false, and short-answer questions from the full adapted text. Use Scribe AI to generate summary and scaffolding questions to support comprehension.
- **Why:** These can complement the paragraph matching task with varied question types.

Step 5. Format and Design Visual Layout

- **Tool:** *Canva AI* or *Microsoft Designer*

- **How:** Design a clean, accessible worksheet or digital page with the passage, instructions, gaps, and paragraph choices clearly formatted. Add visual elements like infographics or subtle Arctic-themed backgrounds for engagement without distraction.

Step 6. Create Interactive or Gamified Practice

- **Tool:** *MagicSchool* or *BookWidgets*
- **How:** Upload the passage and questions into MagicSchool to create interactive quizzes, timed challenges, and instant feedback modules. This increases student motivation and provides immediate correction.

Step 7. Implement Real-Time Classroom Monitoring

- **Tool:** *Classkick + Curipod*
- **How:** Use Classkick for live student task completion, allowing teachers to monitor responses and provide feedback in real time. Curipod can track overall engagement and aggregate student answers for analysis.

This multi-tool approach illustrates how AI can streamline and enrich reading task design for NEC students, providing diverse, adaptive, and engaging learning experiences.

2. Examples of AI-Generated Tasks vs. Traditional Ones

Example 1: Traditional textbook passage on environmental issues with standard questions.

The Changing Face of Cities

A. Cities have always been hubs of culture, innovation, and diversity, but in recent decades, urban landscapes have undergone dramatic transformations. The rise of technology, global migration, and environmental challenges have reshaped how people live, work, and interact in these densely populated areas. Understanding these changes is essential to planning for sustainable urban futures.

B. One of the most notable trends in modern cities is the shift towards "smart city" concepts, where data and digital infrastructure are integrated into urban management. This approach promises to improve transportation efficiency, reduce pollution, and enhance public services through real-time monitoring and responsive systems.

C. However, not all aspects of urban change are positive. Many cities face growing income inequality and social segregation, with affluent neighborhoods juxtaposed against deprived areas lacking access to quality housing, education, and healthcare. These disparities challenge policymakers to find inclusive solutions.

D. Environmental sustainability is also a pressing concern. Urban areas contribute significantly to global carbon emissions and often suffer from poor air quality and heat island effects. Green spaces, renewable energy adoption, and sustainable transport are key priorities to mitigate these impacts.

E. Despite these challenges, cities continue to attract people with the promise of opportunity and community. They remain centers of creativity and economic growth, and with thoughtful governance, they can adapt to future needs and become more resilient and equitable places to live.

Adapted from *Cambridge English: Proficiency (CPE) Practice Tests* by Mark Harrison and Oliver Bowyer, Cambridge University Press, 2019.

The passage consists of five paragraphs marked A to E. For questions 1–10, match each statement below with the paragraph (A–E) in which it is mentioned. Write your answers in the corresponding numbered boxes.

1. The benefits of integrating technology in urban management

2. Challenges posed by social inequality in cities
3. The historical role of cities as cultural centers
4. Environmental issues caused by urbanization
5. The ongoing attractiveness of city life despite difficulties
6. Examples of solutions to environmental problems in cities
7. The concept of "smart cities" and their goals
8. Urban areas' contribution to climate change
9. The importance of planning for sustainable development
10. The coexistence of wealthy and poor neighborhoods

Example 2: A ChatGPT-generated passage on the same topic with tasks matching NEC standards.

Smart, Sustainable, Green Cities: A New Urban Transformation

Adapted from Javidroozi et al. (2023), "Smart, Sustainable, Green Cities: A State-of-the-Art Review" mej.researchcommons.orgen.wikipedia.org+2mdpi.com+2byarcadia.org+2en.wikipedia.orgsciencedirect.com+11researchgate.net+11reuters.com+11

Cities are not just population centres; they are engines of economic growth, hubs of innovation, and critical battlegrounds in the fight against climate change. Today, around two-thirds of the world's population live in urban areas. Despite covering just 2–3% of the Earth's land, cities are responsible for approximately 60–80% of global energy consumption and greenhouse gas (GHG) emissions . As urban areas expand, so does their ecological footprint—making them key to the success of global sustainability goals.

To respond to this challenge, scholars identify converging frameworks under the banner of **Smart–Sustainable–Green (SSG) Cities**:

- **Smart**: Utilises ICT—sensors, IoT, big data, and digital twins—to optimise urban systems, from traffic to energy and waste mdpi.com+15mej.researchcommons.org+15researchgate.net+15arxiv.org+13researchgate.net+13mdpi.com+13.
- **Sustainable**: Focuses on resource efficiency—energy-efficient buildings, public transport, waste reduction, and equitable governance.
- **Green**: Emphasises ecosystem integration through parks, green roofs, biodiversity corridors, and permeable pavements.

Rather than functioning in silos, effective city planning must **integrate** these paradigms. Smart functionality enhances service quality, while sustainability ensures social inclusion and resilience. Green infrastructure mitigates climate impacts—like reducing urban heat islands and managing stormwater—when digitally supported and sustainably governed .

Implementing integrated SSG strategies requires coordination across scales. At the household level, **energy dashboards** enable residents to track consumption; at the neighbourhood level, **digital twins** simulate energy, traffic, and environmental scenarios . City districts apply **smart urban metabolism** tools, which map energy, water, and material flows to identify inefficiencies and guide behavioural change, crossing domains from environmental monitoring to urban design .

Emerging cities like **Seoul**, **Oslo**, and **Barcelona** exemplify SSG integration. Seoul optimises transport and air quality via sensor networks; Oslo combines smart grids with carbon-neutral building retrofits; Barcelona uses smart water systems to tackle drought issues . The **EU Mission for 100 Climate-Neutral and Smart Cities** aims to replicate such models across Europe by 2050, promoting participatory governance and open data infrastructures byarcadia.org.

However, SSG city strategies are not without challenges:

- **Data silos** and poor integration undermine holistic planning
- **Privacy and equity concerns** arise as sensors and surveillance proliferate, risking "digital redlining" ouci.dntb.gov.ua+15en.wikipedia.org+15mdpi.com+15byarcadia.org
- **Governance complexity** hampers coordination across agencies, developers, and stakeholders.

Policymakers and planners advocate for **multi-level governance**, inclusive design, and ethical frameworks to ensure that digital infrastructure serves all citizens fairly.
Ultimately, the resilience of future cities hinges not only on technological innovation but on civic participation, ethical data use, and ecological sensitivity woven into their lifeblood.

A. Multiple-Choice Questions

1. What percentage of global energy is consumed by cities?
   A. 10–20% B. 30–40% C. 60–80% D. 90–100%
2. Which component is NOT part of SSG city frameworks?
   A. Smart B. Sustainable C. Green D. Digital-only
3. What tool maps flows of energy, water, and materials for behavioural insights?
   A. Smart grids B. Digital twins
   C. Smart dashboards D. Urban metabolism
4. Which city uses smart water systems to handle drought?
   A. Seoul B. Oslo C. Barcelona D. New York
5. What equity concern is linked to data collection in smart cities?
   A. Data integration B. Digital redlining
   C. Energy dashboard coverage D. Urban metabolism transparency

B. Short-Answer Questions

6. Name one benefit of integrating green infrastructure in cities.
7. What is the EU initiative mentioned that promotes smart cities by 2050?
8. List one challenge associated with smart city data.
9. Give one example of household-level technology mentioned.

C. Cloze Exercise

Complete the following summary using words from the passage *The Changing Face of Cities*. **You may need to change the form of the words to fit the grammar of the sentence. Use no more than one word in each gap.**

As global **(1)** _____ accelerates, cities face increasing environmental challenges. Despite their limited land area, urban centres generate disproportionately large GHG **(2)** _____. **(3)** _____ networks and **(4)** _____ technologies, such as "digital twins," empower planners to forecast climate-related events and improve system **(5)** _____.
Green roofs and permeable pavements reduce **(6)** _____ islands while supporting urban **(7)** _____. However, true **(8)** _____ requires more than technology: it demands inclusive **(9)** _____ and responsible data use. The goal is to build cities that can withstand future shocks from climate change and continue to thrive in harmony with nature.

D. True–False–Not Given

Read the statements below. Choose:

- **T** if the statement agrees with the text
- **F** if it contradicts the text

- **NG** if there's no information in the text

10. SSG cities only focus on environmental issues.
11. Oslo uses carbon-neutral buildings as part of its smart strategy.
12. Digital twins are only used for transportation planning.
13. "Digital redlining" refers to restricting green space access.
14. Multi-level governance is recommended to resolve smart-city coordination issues.

This comprehensive, AI-supported task demonstrates how authentic scientific texts can be transformed into NEC-aligned reading materials—covering a variety of question types, critical thinking, and vocabulary demands, proving AI power in designing reading tasks for students.

These examples clearly illustrate the potential of AI in transforming reading comprehension tasks for high-level learners. The traditional passage on *The Changing Face of Cities*, while well-structured and informative, follows a predictable format—largely centered around recall and paragraph-matching. In contrast, the AI-generated passage on *Smart, Sustainable, Green Cities* demonstrates how advanced natural language processing can curate scientifically grounded content and align it with the cognitive demands of NEC standards.

The AI-assisted task incorporates a richer variety of item types, including multiple-choice questions targeting inference and synthesis, short-answer prompts requiring precision, gap-fills that test lexical and grammatical awareness, and True–False–Not Given items that demand nuanced reading. These formats mirror real NEC exam tasks more closely and better engage students in higher-order thinking.

Furthermore, AI enables access to up-to-date, domain-specific knowledge drawn from scientific sources, ensuring that learners are exposed to authentic and relevant content. By combining modern urban challenges with integrated comprehension practice, AI-generated reading tasks can more effectively foster both critical engagement and language development.

This comparison highlights how AI can enhance not only the quality and variety of reading tasks but also their relevance, depth, and alignment with the evolving demands of national and international English proficiency standards.

3. Task Features

The AI-designed reading tasks demonstrated several distinctive features that differentiate them from traditional textbook exercises, particularly in terms of cognitive depth and learner engagement. One key feature was the emphasis on vocabulary acquisition through contextual exposure. Instead of isolated word lists, target vocabulary items were embedded in authentic contexts drawn from up-to-date scientific or academic texts, allowing students to infer meaning from surrounding clues. This aligns with research indicating that context-rich vocabulary learning improves long-term retention and word-use flexibility (Nation, 2013).

Moreover, the tasks incorporated inference-based questions, which prompted students to go beyond surface-level understanding and engage with the author's assumptions, implications, and argument structure. This reflects the NEC's emphasis on reading between the lines and developing critical literacy. Additionally, prediction tasks were included—asking students to anticipate content or outcomes based on partial information. These activities actively stimulated higher-order cognitive processes, such as hypothesis testing and logical deduction, thus aligning well with the C1/C2 level reading objectives of the NEC.

Finally, the variety of question formats—including True–False–Not Given, cloze summaries, short answers, and analytical multiple-choice, etc. —ensured that learners practiced different sub-skills of reading comprehension while maintaining sustained interest.

4. Classroom Simulation

To assess the practical effectiveness of the AI-generated materials, a classroom simulation was conducted in the form of a mock NEC competition involving upper-intermediate and advanced-level students. The simulation aimed to evaluate not only task validity but also learner engagement and performance under exam-like conditions.

During the activity, students were divided into pairs and small groups to complete AI-designed tasks delivered through MagicSchool, a digital platform integrating interactive reading tools with AI feedback features. This allowed real-time assessment of comprehension, vocabulary usage, and reasoning accuracy. One notable outcome was the increase in time-on-task, as students were observed spending more time analyzing questions, checking vocabulary meaning via embedded glossaries, and discussing possible interpretations with peers.

The platform's instant feedback mechanism played a crucial role in reinforcing correct answers and addressing misunderstandings promptly, which in turn improved confidence and reduced learner frustration. In addition, peer collaboration was encouraged through scaffolded tasks requiring group consensus or shared decision-making, thus supporting the NEC's aim of fostering academic discourse and collaboration.

Overall, the simulation revealed that AI-based tasks not only aligned with the cognitive demands of the NEC but also enhanced learner autonomy, engagement, and metacognitive awareness in ways that traditional print-based materials often fail to achieve.

VI. Results and Discussion

1. Learner Engagement

Survey data collected post-simulation revealed a marked increase in both emotional and cognitive engagement when students interacted with AI-generated reading tasks. Participants described the materials as more "stimulating," "modern," and "relevant to current global issues" compared to traditional textbook content. The interactive features—such as instant feedback and contextual vocabulary aids—were frequently cited as contributing to a more enjoyable learning experience. Moreover, the diverse question formats, which included multiple-choice, short-answer, cloze, and inferential reasoning tasks, sustained learners' interest and encouraged deeper involvement with the text. These findings align with constructivist learning theories, which emphasize the role of learner agency and meaningful interaction in comprehension (Bruner, 1990).

2. Task Effectiveness

Quantitative performance data indicated that students achieved comparable or slightly higher accuracy scores on AI-designed tasks compared to traditional materials. In particular, comprehension of inferential questions and vocabulary-in-context tasks showed modest improvement, suggesting that the AI-generated exercises met the intended difficulty level and cognitive demands of NEC reading standards. The broader range of question types, which allowed learners to engage with texts from multiple angles, appeared to promote more robust understanding and information retention. These results support previous research indicating that varied task formats enhance critical reading outcomes (Grabe & Stoller, 2011).

3. Benefits of AI in Task Design

Teachers involved in the implementation phase reported several pedagogical benefits associated with AI-assisted task design. Chief among these was the speed and efficiency with which tasks could be generated, revised, and adapted. AI tools allowed for rapid customization, enabling instructors to produce differentiated materials that addressed specific learner needs, text genres, or curricular goals. Additionally, the increased variety of question types, vocabulary focus, and content topics helped reduce redundancy and learner fatigue across lessons. This flexibility significantly enhanced instructional planning and classroom responsiveness.

4. Challenges and Limitations

Despite the promising results, several challenges were noted. A recurrent issue was the occasional inaccuracy or lack of contextual appropriateness in AI-generated content. In some cases, questions lacked alignment with the main ideas of the source text or included distractors that were ambiguous or misleading. These flaws necessitated manual review and pedagogical editing by experienced teachers to ensure task validity and reliability. Moreover, some educators expressed concerns about the learning curve associated with using AI tools, particularly those with limited prior exposure to instructional technology. There was also caution regarding the risk of over-reliance on automated generation, which could inadvertently diminish the role of human insight in task sequencing, scaffolding, and learner motivation. Teachers emphasized that while AI is a powerful assistant, its outputs should be critically mediated by educators to maintain instructional integrity.

VII. Conclusion and Recommendations

1. Summary of Key Findings

This study demonstrates the significant potential of artificial intelligence to enhance reading task design for students preparing for the National English Competition (NEC). The integration of AI tools, such as ChatGPT, enabled the rapid generation of high-quality, varied reading materials that aligned with NEC standards. Results showed improved learner engagement, task effectiveness, and pedagogical efficiency. While AI cannot replace the role of the teacher, it can serve as a powerful support mechanism by streamlining the task creation process and enabling differentiation in content delivery. However, the study also highlighted the need for careful teacher oversight to address occasional inaccuracies and ensure contextual appropriateness.

2. Pedagogical Implications

The findings suggest that AI can play a transformative role in supporting differentiated instruction and fostering student-centered learning environments. In the context of NEC preparation, where tasks must balance linguistic challenge with conceptual depth, AI-generated materials can be tailored to address varying proficiency levels, topical interests, and strategic needs. To fully harness these benefits, teachers must be equipped with AI literacy: the skills to evaluate, refine, and ethically implement AI-generated content. Professional development programs should include training on prompt engineering, content validation, and alignment with curricular standards.

3. Recommendations

3.1. For Teachers:

- Treat AI as a collaborative tool: use it to generate initial drafts of reading tasks, then apply professional judgment to review, adapt, and scaffold the materials as needed.
- Integrate AI-generated texts into classroom practice gradually, pairing them with student feedback to inform task refinement.

3.2. For Students:

- **Engage actively with AI-enhanced tasks** by treating them not only as test practice but also as opportunities for language exploration and skill-building. Use feedback from these tasks to identify strengths and areas for improvement.
- **Develop digital and critical literacy** by questioning the content, language, and perspectives presented in AI-generated materials. Discuss any inconsistencies or unclear passages with teachers or peers to deepen understanding.
- **Use AI tools responsibly** by generating reading summaries or vocabulary lists for personal study, for example, not to replace learning efforts. Treat AI as a support, not a shortcut, in your learning process.
- **Participate in task co-creation** where possible. Providing input on which topics, formats, or question types are most engaging can help teachers and AI tools better meet learners' needs.

VIII. Conclusion

This study has investigated the application of artificial intelligence (AI), particularly large language models (LLMs) such as ChatGPT, in designing engaging reading tasks aligned with the requirements of the National English Competition (NEC). The research aimed to determine the pedagogical value of AI-generated tasks in enhancing learner engagement, supporting differentiated instruction, and meeting the linguistic and cognitive demands of high-stakes academic reading assessments.

The findings indicate that AI tools can play a significant role in enriching reading instruction. ChatGPT-generated texts and task sets successfully mirrored the complexity and variety of NEC-style materials, incorporating inferential comprehension, vocabulary-in-context, and global reading skills (Cambridge Assessment English, 2020). The integration of multiple task types—such as multiple-choice, cloze, and true/false/not given, supported a more comprehensive skill set than traditional, uniform exercises typically found in textbooks (Nation, 2009).

Empirical classroom data further confirmed that AI-generated tasks contributed to higher levels of learner engagement. Survey responses and observational data revealed increased emotional and cognitive involvement, attributable to the tasks' relevance, authenticity, and interactive formats (Fredricks et al., 2004). Performance data showed that students achieved comparable or improved comprehension accuracy when working with AI-generated materials, suggesting that such tasks were appropriately challenging and aligned with students' developmental levels (Vygotsky, 1978).

From the perspective of task design, AI tools significantly enhanced teacher productivity and creativity. The ability to instantly generate, revise, and personalize reading tasks allowed for more agile and differentiated instructional planning, echoing recent literature on AI's role in supporting teacher agency (Luckin et al., 2016; Holmes et al., 2019). However, the study also highlighted several limitations. AI-generated content occasionally included factual inconsistencies or linguistic inaccuracies, underscoring the necessity of human oversight in the task review process (Brown & Larson, 2023). Additionally, teachers noted a need for professional development in AI literacy to effectively evaluate, adapt, and implement AI-generated materials in pedagogically sound ways.

In conclusion, this research affirms the potential of AI to augment, not replace, educators in designing high-quality reading tasks. When used thoughtfully, AI can support learner engagement, task variation, and curriculum alignment, particularly in competitive academic contexts like the NEC. Future work should investigate longitudinal outcomes of AI-integrated instruction, examine its efficacy across different skill domains (e.g., writing and speaking), and promote ethical frameworks for responsible AI use in education.

IX. Appendices

1. Appendix A: Survey and Interview Questions

A1. Student Engagement Survey Form

Instructions: Please answer the following questions based on your experience with both traditional and AI-generated reading tasks. Your responses will remain confidential.

No.	Question	Response Options
1	How interesting did you find the AI-generated reading tasks compared to traditional tasks?	Very interesting / Somewhat interesting / Neutral / Somewhat boring / Very boring
2	How easy or difficult were the AI-generated tasks compared to traditional ones?	Much easier / Somewhat easier / About the same / Somewhat harder / Much harder
3	Did the variety of question types in AI tasks help you understand the text better?	Strongly agree / Agree / Neutral / Disagree / Strongly disagree
4	How motivated were you to complete AI-generated tasks?	Very motivated / Somewhat motivated / Neutral / Somewhat unmotivated / Not motivated at all
5	Did you find the instant feedback on AI tasks helpful?	Yes, very helpful / Somewhat helpful / Neutral / Not very helpful / Not helpful at all
6	Please share any additional comments or suggestions about your experience with AI-generated tasks.	Open-ended

A2. Teacher Interview Data

Introductory Questions

Q: Could you describe your experience with AI tools for task design?

A: I have been experimenting with AI tools like ChatGPT to create reading comprehension tasks. The process is much faster than manual creation, and the AI provides a variety of question types and vocabulary levels that align well with our curriculum.

Q: How comfortable do you feel using AI-generated materials in your teaching?

A: Initially, there was a learning curve, especially in verifying the accuracy of content and tailoring it to student needs. However, after some practice, I feel confident using AI-generated materials as a starting point, provided I review and adapt them before class.

Design and Implementation

Q: What advantages do you see in AI-generated reading tasks compared to traditional materials?

A: AI-generated tasks offer more diverse question formats and can be quickly customized

for different learner levels. This flexibility saves preparation time and helps address individual student needs more effectively.

Q: What challenges have you encountered when using AI-generated tasks?

A: Sometimes the AI produces content that is slightly off-topic or includes minor inaccuracies. It also tends to repeat certain phrases. Therefore, teacher oversight is necessary to ensure quality and relevance.

Q: How do you integrate AI tasks into your lesson plans?

A: I usually use AI-generated tasks for warm-ups or supplementary practice after introducing new vocabulary or grammar. I pair these with class discussions or group work to deepen understanding and engagement.

Effectiveness and Engagement

Q: Have you noticed any changes in student engagement or performance with AI tasks?

A: Yes, students seem more interested and motivated when the tasks include interactive or varied question types. Their comprehension scores have improved slightly, especially when instant feedback is available.

Q: How do students respond to the variety of question types in AI tasks?

A: They appreciate having different types of questions, such as multiple-choice, cloze exercises, and true/false/not given. It keeps the tasks fresh and challenges different cognitive skills.

Future Perspectives

Q: What improvements would you suggest for AI tools used in task design?

A: Improving the accuracy and contextual relevance of generated texts is key. Also, having AI templates specifically designed for NEC standards and easier user interfaces for teachers would be helpful.

Q: How do you foresee AI influencing your teaching practice in the future?

A: I believe AI will become an essential co-creator of teaching materials, allowing me to focus more on pedagogical strategies and student interaction while the AI handles repetitive or initial drafting tasks.

2. Appendix B: Student Feedback Data

B1. Engagement Levels

Engagement Aspect	Traditional Tasks (Mean Score)*	AI-Generated Tasks (Mean Score)*	% Increase (+) / Decrease (-)
Interest	3.2	4.1	+28%
Motivation	3.0	4.0	+33%
Perceived Difficulty	3.5	3.3	-6% (tasks easier)
Usefulness of Feedback	2.8	4.3	+54%

*Scale: 1 = Lowest, 5 = Highest

B2. Performance Comparison

Task Type	Average Accuracy (%)	Average Completion Time (minutes)
Traditional Reading	78	25
AI-Generated Reading	82	22

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