



Procedure Text To Evacuation Simulation: Effectiveness Of Interactive Media Based On Ai Conversation In Indonesian Language Learning For Post-Earthquake Crisis Communication

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Abstract

Learning text procedure in curriculum Indonesian still dominated approach conventional which is static, so that participant educate No own experience simulation communication realistic crisis For face situation evacuation post- earthquake research This aim For analyze effectiveness of interactive media conversational AI- based in increase understanding structure and rules text procedures, training verbal and nonverbal responses, comparing them with conventional media, as well as identify obstacles and support implementation. The type of research used is studies library with data sources in the form of books, articles journal scientific, and reports results research analyzed use technique analysis content. Research results show that scenario evacuation interactive conversational AI- based in a way significant increase understanding structure and rules text procedure through experience dynamic and contextual learning. Conversational AI proven effective in practice verbal response in the form of speed taking decision linguistic and nonverbal responses in the form of ability read signal emotional victim. Comparison with conventional media show the advantages of AI media in matter authenticity simulation, frequency practice, retention skills and confidence self students. Implementation constraints covering latency technical, limitations infrastructure, mismatch context local, and potential retraumatization, however supported by the availability of modern AI models, support policies, as well as training source Power human. Research This conclude that interactive media conversational AI- based effective For learning text procedure evacuation and ready implemented in a way gradually with adjustment context local as well as mentoring psychological.





Keywords: Procedural Text, Evacuation Simulation, Conversational AI, Communication Crisis, Indonesian Language Learning

INTRODUCTION

Indonesia is one of the countries with level vulnerability disaster natural the highest in the world, especially earthquake earth, because its position in the area Pacific Ring of Fire place meeting a number of plate tectonics active. Condition geographical This make mitigation disaster and preparedness public as priority national that is not can bargained for again. Various effort has carried out by the government through socialization disaster and training evacuation independence in schools, which aims For implant preparedness since early to students and staff educators. However, the approach conventional like brochures, posters, and training face advance short often assessed not enough effective Because Still nature One direction and not yet capable create experience interactive learning as well as realistic for community. Research about communication learning post-earthquake Cianjur 2022 reveals that effectiveness activity Study teach post-disaster Still classified as low Because facility learning Not yet recover completely and method applied learning Not yet capable accommodate need emergency students on site disaster (Soemardjo et al., 2024).

Learning Indonesian in the era of the Independent Curriculum This demand approach which are more contextual, creative, and participant - centered educate, especially in mastery text procedures that are one of the core competencies. Procedural texts, which teach about order steps systematic For reach something purpose, have very high relevance with context evacuation disaster Because structure the language that uses sentence imperative, temporal conjunctions, and verbs very active For convey instructions rescue self. Unfortunately, learning text procedure during This tend done statically through book text and sheets work, so that participant educate lost chance For practice in a way direct How apply instructions procedural in approaching situation reality. Research about implications use of AI in develop skills speak Indonesian at school medium First show that integration intelligence artificial can increase motivation and engagement student through feature interactive and gamified, all at once allows personalization learning that has been going on This difficult achieved with method conventional (Suhada & Fauzirachman, 2025).

Development technology intelligence rapid production in a number of year final open opportunity very promising new For bridge gap between learning text procedure in a way theory with need exercise communication realistic crisis. Intelligence artificial, especially in form agent conversation or chatbot, has proven own ability outside normal For adapt with context learners,





giving bait come back in a way instant, and simulate scenario natural and personal conversations. Research about utilization chatbot technology for increase preparedness public to disasters in coastal areas Lebak Regency proves that chatbots are rated easy usable, informative, and effective help public understand steps responsive emergency in a way practical, with feature interactive and options communication directly that increases comfort users in access information disaster (Sugito, 2025). Findings This indicates that the potential of conversational AI No limited to learning Language foreign, but also can applied to learning Indonesian for contexts specific like communication crisis, where speed, accuracy, and clarity message become factor determinant between safety and risk death.

Intelligence integration artificial in learning Indonesian is not Again just discourse futuristic, but rather has start come true in various form innovation proven pedagogical effective. Research about video- based development intelligence contextualized creation in a way culture For increase skills speak Indonesian shows improvement significant in pronunciation, construction sentences and beliefs self participant educate in speak Indonesian, where AI- based videos are integrated with context culture functioning as an effective additional media in learning Language foreign with provide bait come back linguistics and exposure culture in a way simultaneously (Oktora et al., 2025). Success This give foundation strong theoretical and empirical for effort integrating conversational AI to in learning text procedure evacuation, where the nuances communication crisis - ridden with pressure time and conditions psychological that is not certain need the same approach very different from learning language in general.

Aspect communication in mitigation disaster often become neglected factors whereas own role that is not lost importance with aspect physique evacuation That own research about simulation conversation in taking decision evacuation using a multiagent model generative AI- based show that approach This capable overcome limitations simulation multiagen traditional based rule with consider factor psychological and transmission information during disaster, so that deepen understanding about behavior evacuation and providing outlook For increase method instructions actual evacuation (Japanese Society for Artificial Intelligence, 2025).

Ability For choose proper diction as well as ability For adjust voice pitch, volume, and speed talk in accordance with condition psychological against talk is competence communication a crisis that only can trained in a way effective through simulation repetitive interactive in safe environment However realistic. This is in line with findings that approach based conversation in education disaster capable create two- way interaction that creates participant educate enthusiastic and involved active, different with training conventional which tends to passive and





boring (Ratnasari, 2026). Improvement quality education done with method depend on that internal potential itself. This process use various available techniques and data For empowering component in effort continuously increase his ability, so that he can fulfil expectations of students and society (Azmi & Ridha, 2019).

Study about intelligence artificial adaptive in a way culture in space BIPA class (Indonesian for Foreign Speaker) expressed that even though AI supports it grammatical fluency and reduce anxiety learners, challenges like too formal language, lack of expression everyday life, and inconsistencies culture Still need overcome (Yetty, 2025). Findings This indicates that conversational AI development For learning text procedure evacuation in Indonesia must be notice context local wisdom culture, and variations Language area as well as terms technical common disasters used in society. Research This will study in a way comprehensive how innovative media This can increase understanding structure and rules text procedures, their effectiveness in practice response communication crisis, the comparison with conventional media, as well as obstacles and necessary support For its implementation, so that expected can give contribution theoretical and practical for development learning more Indonesian responsive to challenges of the times and needs disaster national.

Problems the main underlying study This is low effectiveness learning text procedure in curriculum Indonesian language which is still dominated by the approach conventional based book text and sheets work, so that participant educate only get knowledge declarative about structure and rules text procedure without Once practice it in realistic simulation. Problems next is Not yet availability of learning media that is capable practice participants' verbal and nonverbal responses educate For situation communication crisis post-earthquake, where speed, accuracy diction, and ability read condition psychological against talk become factor crucial that has not been accommodated in method learning conventional. In addition, the gap between need will exercise communication intensive and personalized crisis with limitations facilitator as well as time classroom learning become problematic practical that encourages the need media-based innovation technology intelligence artificial.

Study This urge For done because Indonesia is in the region vulnerable earthquake earth and need preparedness society that does not only understand procedure evacuation in a way theoretical but also capable communicate it in a way effective moment crisis ongoing. Urgency other lies in its rapid development conversational AI technology that has not yet been utilized optimally in learning Indonesian, even though its potential For create simulation interactive, providing bait come back instant, and provides exercise repetitive no limit very suitable with demands learning 21st century. Research this is also urgent remember Not yet existence study





comprehensive which is specific highlight conversational AI integration with learning text procedure evacuation For communication crisis, so that study This important For fill in emptiness literature and provide runway theoretical for innovative media development in the future.

Based on the problems and urgency that have described, research This aim For describe improvement understanding structure and rules text procedure through utilization scenario evacuation interactive based on conversational AI. Furthermore, research This aim For analyze effectiveness of conversational AI in practice participants' verbal and nonverbal responses learn in simulation communication crisis post- earthquake research this also aims For compare readiness communication crisis student between those using conventional media with interactive media based on conversational AI. Finally, research This aim For identify constraints and factors support in conversational AI implementation For learning text procedure evacuation in context post-earthquake.

METHOD

Study This use type study literature or library research. Research literature is type complete research depend on sources written For collect relevant data and information with the topic being studied, without do direct data collection to field or subject research. In context study this, approach literature chosen Because allows researchers For explore in a way comprehensive theories, findings, and developments latest about utilization intelligence artificial conversation in learning text procedure evacuation, which is still classified as new and not yet Lots implemented in a way wide in the field. Research literature give profit for researchers For access and synthesize various source scattered knowledge in form books, reports research and documents scientific others, so that can build framework solid theoretical before done testing empirical more continued (Saebani, 2024).

Data sources in study literature This consists of on three category main, namely books text academic, published articles in journal scientific, and reports results relevant research with topic studies. Books text that is used data sources include literature about method research, learning Indonesian in particular text procedures, technology intelligence artificial in education, as well as communication crisis and management disaster. As for the article journal scientifically used the data source is publication periodically from journal national and internationally indexed and has reputation academic trusted, with range time publication especially focused on five years final For ensure up-to-date information remember development very fast AI technology. Report results research that is used data sources include results study relevant previous information, whether published in a way independent and as part from project study institution or institutions





certain (Powell, 1997).

Data collection techniques used in study literature This is technique documentation, namely technique collect data with method tracing, recording, and identifying various document relevant written with focus research. The data collection process begins with stage heuristics or search source, where the researcher do exploration in a way systematic through various academic databases such as Google Scholar, Scopus, Web of Science, and SINTA for article journals, as well as through catalog digital and physical libraries For books and reports research. Keywords used in search covering combination from terms like " text procedure ", " simulation evacuation ", " conversational AI ", " learning Indonesian ", " communication crisis ", " post-earthquake ", "conversational AI", "evacuation simulation", "procedural text", and "crisis communication" in Indonesian and English. After relevant sources collected, researchers do stage recording bibliographic For documenting identity complete every source, including author's name, year publication, title, publisher, and relevant pages. Stage next is read and understand in a way critical every sources that have been collected, with give sign or notes on the sections containing information important related with formulation problem research (Connaway & Radford, 2021).

Data analysis techniques in study This use method analysis content or content analysis, namely approach purposeful analysis For identify, categorize, and interpret in a way systematic patterns the meaning contained in texts that become research data sources. The data analysis process begins with stage data reduction, where researchers do selection to information that has been collected from various source For sort out which ones are most relevant and important with focus study about effectiveness of interactive media conversational AI- based in learning text procedure evacuation. Information that is not relevant or only peripheral nature is set aside, while substantive and direct information support topic study saved For analyzed more next. Stage next is data presentation, where the information that has been reduced Then organized to in categories appropriate thematic with subtitles results research that has been set previous. Stage final is withdrawal conclusion and verification, where researchers do interpretation to patterns findings that have been organized For answer question study in a way holistic analysis content in study This nature qualitative-interpretive (Kusuma, 2025).

Testing techniques validity of data in study literature This apply a series common criteria used in study qualitative, namely credibility, transferability, dependability, and confirmability. Credibility or degrees trust against the data achieved through several strategies, first is triangulation source, where the researcher compare and verify findings or information obtained from One source with source other different ones. The second strategy is member checking in



context bibliography, namely with ensure that interpretation researchers to something text No deviate from Meaning original the author. Transferability or distraction results study achieved with provide detailed, concise, and clear description about context and focus research, including characteristics data sources used, so reader can evaluate Alone to what extent are the findings study This can applied or diverted to in context or different settings. Dependability or data dependency tested through an audit trail, namely researchers documenting in a way systematic the entire research process start from formulation problem, search sources, techniques data collection, to the analysis process, so that other people or other researchers can track return the way research and, if required, replicate it with same procedure. Confirmability or data objectivity is achieved with ensure that findings study truly based on collected data, not on subjectivity or personal bias researcher (Sugiyono, 2019).

RESULTS AND DISCUSSION

A. Improvement Understanding Structure and Rules of Procedural Texts through Scenario Evacuation Interactive Conversational AI- based

Based on study in -depth library, found that utilization scenario evacuation interactive based intelligence artificial conversation give contribution significant to improvement understanding participant educate to structure and rules text procedures. Interactive media that integrates element conversation with simulation condition emergency capable transform text static procedures become experience Dynamic and contextual learning. Integration of conversational AI technology in scenario evacuation allows participant educate For No just read or memorize text procedures, but rather in a way active involved in simulations that require understanding deep about order steps, chronology actions, as well as use sentence imperative and temporal conjunctions that become characteristics typical text procedure (Maquilón et al., 2024).

More further findings This supported by evidence that approach based scenario interactive in a way effective bridge gap between knowledge declarative about structure text and capabilities procedural in apply it to the situation real. When participants educate face to face with simulation evacuation post- earthquake utilizing conversational AI, they forced to For in real-time understand and follow instructions procedural matters submitted through interactive dialogue, so that structure text procedures that include objectives, materials, steps, and affirmations repeat internalized in a way experience through practice No just theory (Kusuma & Wijaya, 2022).

Aspect linguistics text procedure like use of verbs active, sentence command, adverb



method and time, as well as term related technical matters with evacuation also got portion adequate training in simulation AI- based because system can adapt level difficulty and complexity Language based on the response given participant educate, so that a personalized scaffolded learning process occurs (Pramono et al., 2023). Research more carry on reveal that scenario evacuation interactive conversational AI- based superior in demonstrate connection causality between understanding structure text procedures and success implementation evacuation ; when participant Didik misordered step or ignore instructions important in simulation, conversational AI can give bait come back direct direct they For review return element missed procedures, creating a learning loop that reinforces understanding structural through consequence performative (Widodo & Haryanti, 2021).

Findings important other is that simulation evacuation interactive that utilizes conversational AI capable accommodate difference style Study participant educate ; share visual learners, animation and representation graphic from steps evacuation can combined with verbal instructions from AI, whereas for learners auditory, interactive dialogue that is rich in structure procedural become the main media, while learners kinesthetic get benefit maximum from aspect simulation that requires they respond in a way active to every instructions procedural (Sutrisno & Lestari, 2024). Other identified advantages from implementation of this media is his abilities in represent text procedure as something alive and contextual No document dead ; through conversation with AI playing a role as coordinator evacuation or fellow victims, participants educate Study that text procedure is not instructions stiff that must be followed without thinking critical, but rather guide that requires interpretation and adaptation to condition field, so that understanding they about flexibility structural in text procedure become more mature (Cogan et al., 2025).

Discussion about findings First study This show that utilization scenario evacuation interactive conversational AI- based give very significant contribution to improvement understanding participant educate to structure and rules text procedure. Phenomenon This can explained through theory learning constructivist who emphasizes that knowledge No can transferred in a way passive from teacher to participant educate, but rather must constructed in a way active by participants educate through experiences and interactions with environment study. In context this, interactive media conversational AI- based provide environment learning that is rich in procedural stimuli, where participants educate No only read or hear about How structure text procedure should be, but in a way direct experience and practice use structure the in demanding simulation response active. Research about chatbot development for education disaster management conducted at Makassar State University and Malang State





University proves that that guided conversational learning approach applied in AI chatbot is capable increase understanding student to multi -geohazard concept significant, because system No give answer instant but reverse question to users For dig understanding beginning they before provide guidance in a gradually (Syamsunardi et al., 2025).

More further, the effectiveness of conversational AI media in increase understanding structure text procedures are also related with his abilities provide repetition and variation an unforeseen scenario limited. In learning conventional, a participant educate Possible only get One or two opportunities For practice text procedure through simple role-play Because limitations time and amount facilitator. However, with conversational AI, participants educate can train repeatedly with scenario different evacuations, starting from from evacuation independent in room until coordination with team rescuers outside building. Every time a participant educate do error in order step or use sentence less imperative right, AI can give correct direct and specific. Research about development of the EduSiaga platform that integrates augmented reality and smart chatbots For education disaster find that variations of learning media that combine audio, visual, and interactive elements capable improve students' spatial intelligence and spatial ability in a way meaningful compared to with learning that only depend on book static text (Amri et al., 2024). Findings This in line with results study that approach multimodal in learning disaster is very effective For accommodate difference style Study participant educate.

Aspect important other necessary discussed is How scenario evacuation interactive conversational AI- based capable teach flexibility structural text procedures that are not can obtained from learning conventional. Procedural text in book text usually served as order steps that are linear, fixed, and not can changed. However, in situation evacuation real, rigid procedures often No can implemented Because condition dynamic and unstable field unexpected. Through simulation with conversational AI, participants educate Study that text procedure is not instructions must die followed without thinking critical, but rather guide that requires interpretation and adaptation. Research about development of an intelligent tutoring chatbot based on generative AI carried out in Japan show that Use of ChatGPT in educational chatbots capable produce variation richer and more diverse responses compared to with conventional chatbots, so that participant educate get experience more natural and contextual learning (Ida, 2025). The ability of AI to give response that is not fully unexpected This precisely become mark plus pedagogical Because force participant educate For think critical about How adapt procedure evacuation with situation specific that they face it.





B. Effectiveness of Conversational AI in Practice Verbal and Nonverbal Responses in Simulation Communication Crisis Post-earthquake

Literature review conducted reveal that conversational AI integration in simulation communication crisis post-earthquake show impressive effectiveness in practice participants' verbal and nonverbal responses education. Ability unique conversational AI For simulate various scenario communication crisis start from interact with traumatized victims coordinate with team savior create environment safe exercise However realistic for participant educate For develop competence communication emergency. Research show that practiced verbal responses through conversational AI covers aspect speed taking decision linguistics, accuracy election diction in situation stress, as well as ability convey instructions evacuation with structure clear and unambiguous sentences ambiguous, where everything is element crucial in communication an unresolved crisis can trained in a way adequate through method learning conventional (Hasibuan et al., 2022).

More far, modern conversational AI based on language models big proven capable produce richer, more responsive responses diverse, and more experience compared to with agent conversation traditional, as well as own control on quality prosodic voice such as tone, duration, and intonation, so that the resulting simulation is very close interaction between humans actually and provide the right stimulus for development participant's verbal response educate in atmosphere crisis (Luque et al., 2024). Aspects nonverbal language which includes element paralinguistics like pause, pressure sound, volume, and speed talking also gets portion adequate training because of conversational AI can programmed For respond No only to what was said participant educate but also towards How they say it ; when system detect panic or uncertainty in tone of voice, AI can give bait back that directs participant educate For calm self and repeat instructions with more articulation clear, as necessary in situation evacuation real (Firmansyah & Rahmawati, 2023).

Findings important from various studies library indicates that effectiveness of conversational AI in practice response communication crisis No let go from his abilities provide scenario responsive branching to participant's verbal choices educate ; when a participant educate choose use sentence declarative imperative in order evacuation, AI can react as a confused victim or No quick respond, so that participant educate Study in a way experiential that text procedure For communication crisis must put forward structure sentence firm and unwavering command multiple interpretations (Mulyono & Anggraeni, 2024).

More interesting again, conversational AI proven capable practice aspect nonverbal responses in the form of ability read and respond signal emotional from against talk ; in





sophisticated simulation, AI plays a role as an earthquake victim can show various level stress, confusion, or panic through modulation voice, and participants educate sued For adapt communication strategies they, for example with lower the volume moment speak with victims who are in shock or use convincing pauses and intonation moment give instructions evacuation to group prone to like elderly or children (Septiawan & Kurniawan, 2021). The study also highlighted that conversational AI effective in practice verbal response that takes into consideration aspect safety psychological state of the victim; in context communication crisis post-earthquake, the choice of words such as " evacuate " versus " exit " or " hold on " versus " run " has implications different psychological to victim response, and through conversation repetitive with AI, participants educate can explore various choice diction and learn which ones are most effective in condition emergency certain, so that competence communication crisis they become more nuanced and context-sensitive (Brutti et al., 2024).

Discussion about effectiveness of conversational AI in practice verbal and nonverbal responses are necessary started with understanding that communication crisis post-earthquake own very different characteristics with communication everyday. In normal situation, individual own enough time For formulate sentence, choose proper diction, and adjusting the tone of voice. However, in situation crisis post-earthquake, decision must taken in count seconds, pressure very high psychological, and mistakes communication can have fatal consequences for safety soul. Research about utilization of chatbots for increase preparedness public to disaster in Lebak Regency shows that chatbots are rated easy usable, informative, and effective help public understand steps responsive emergency in a way practical, with feature interactive and options communication directly that increases comfort users in access information disaster (Sugito, 2025). Findings This indicates that media is based on conversation own superiority experience in practice two- way communication which is essence from verbal response in situation emergency.

Modern conversational AI capabilities based on large generative language models allows system For No only respond content from what was said participant educate, but also adapt response based on tone of voice, speed speech, and other nonverbal indicators. In simulation communication crisis, nonverbal aspects such as voice volume, pauses, word stress, and intonation own role that is not lost importance with that choice of words alone. A panicked earthquake victim will more easy calmed down If officer evacuation speak with a calm voice However firmly, with speed talk that is not in a hurry, and use proper pause For give time for victims to process information. Research about development of the EduSiaga platform at Gadjah Mada University revealed that audio and visual approach in learning disaster capable help



student develop greater understanding deep about How convey information evacuation in a way effective, including aspect frequent prosodic neglected in learning based text (Amri et al., 2024). This platform prove that integration various media video, animation, sound, and chatbots create experience learn more holistic and encompassing all over aspect necessary communication in situation emergency.

Aspect psychological from communication the crisis also got portion adequate training through conversational AI. In sophisticated simulation, AI plays a role as an earthquake victim can show various level stress, confusion, fear, or even shock psychological, and participants educate sued For adapt communication strategies they in real-time. For example, when face to face with victims who experienced disorientation, officer evacuation need use very simple sentences, repeating instructions several times with convincing intonation, as well as avoid potentially offensive words trigger panic addition like " earthquake" sequelae " or " death ". Research about integration digital technology in education in the middle challenge infrastructure in Indonesia emphasizes that effectiveness learning based technology really depends on the extent of technology the can adapted with context local and needs specific users (Athillah, 2025). In context communication crisis, adaptation This means conversational AI must trained with relevant scenarios in a way culture and geography, including use terms local For evacuation and understanding about communication norms in situation emergency in force in society local.

C. Comparison of Conventional Media with Interactive Media AI -based on Readiness Communication Crisis Student

Analysis comparative between conventional media and interactive media conversational AI- based through studies comprehensive library produce findings that readiness communication crisis student show significant difference when trained use second approach those. Conventional media in learning text procedure communication crisis like book text, sheet work, lectures, and simple role-play although own mark pedagogical alone, proven own limitations in matter authenticity, intensity practice and ability give bait personalized returns. Study of effectiveness of conventional media show that method lectures and readings text procedure evacuation in a way traditional only capable transfer knowledge declarative about What should done in situation crisis, but fail build scheme cognitive and response automatic required when participant educate face pressure psychological moment disaster indeed occurred (Nugroho et al., 2022).

On the other hand, interactive media conversational AI- based capable simulate pressure time, ambiguity information and demands taking decision fast that becomes characteristics



situation crisis real, so that readiness established communication No just knowledge procedural but also regulations emotions and flexibility cognitive in respond dynamics changing situations fast (Widiastuti & Prasetyo, 2023). The most striking difference between both media lie in aspect frequency and quality exercise ; in learning settings with conventional media, every participant educate Possible only get One or two opportunities For practice communication crisis through limited role-play Because constraint time and amount facilitator, while interactive media AI-based enables exercise repetitive without limits with varied scenarios, where AI can take role as a victim with characteristics different start from the cooperative to the point of panic or even No responsive so that readiness communication student become more mature and comprehensive after expose they are in various variation situation crisis (Hidayatullah & Sari, 2024).

Findings important other is that conventional media tend teach communication crisis as linear and repeatable procedures predictable, while interactive media AI- based teaching that communication crisis nature dynamic and requires adaptation constant. In learning with book text, students taught order step communication standard evacuation, but when face to face with conversational AI that can give response No suspected, students Study that plan stiff communication often failed in the field and they must develop ability improvisation linguistics while still stick to the principles base text procedures (Gutiérrez Maquilón, 2024).

More far, study about Power stand readiness communication crisis between both media show that knowledge gained through conventional media experience further decline fast compared to with skills being practiced through interactive AI media. Students who learn through conversational AI simulation show retention ability communication a deeper crisis Good when tested repeat after period certain, which is suspected caused by experience learn more deep and meaningful Because involving aspect affective and cognitive in a way simultaneous, different with learning conventional which tends to shallow and memorization - centered No mastery procedural (Briones et al., 2025). Differences significant was also found in matter trust self student For do communication crisis ; students who are trained with conversational AI media report level trust distant self more tall in face scenario emergency compared to with a group that only using conventional media, with reason that experience repetitive interact with responsive AI has remove anxiety beginning them and build a strong mental model about How communication effective evacuation should carried out (Cogan et al., 2025).

The most critical weaknesses of conventional media is his inability provide bait personalized and immediate feedback. In conventional role - play, a student Possible do error in convey instructions evacuation but No quick corrected Because facilitator No can notice every





interaction in a way simultaneous, while conversational AI can give correct direct and specific to each error linguistics for example wrong prepositions, order reversed instructions, or use sentence passive that is not effective in situation emergency so that the learning process from error happen in real-time and more efficient (Dewi & Santoso, 2022).

Discussion comparative between conventional media and interactive media conversational AI- based need notice that the most fundamental difference between both of them lies in the paradigm underlying learning. Conventional media like book simple texts, lectures, and role-plays operate in paradigm transmission knowledge, where educators play a role as source main information and participants educate as recipient passive. In contrast, interactive media conversational AI- based operate in paradigm more constructivist in accordance with demands learning 21st century, where participants educate in a way active build knowledge they Alone through exploration, experimentation, and reflection on experience. Research about the use of generative AI for support discussion family about preparedness disaster in Japan show that AI- based chatbots are capable of provide more from just information He capable stimulate meaningful conversation, digging understanding beginning users, and help users formulate plan customized evacuation with condition specific family they, something that is not Possible carried out by conventional media like brochure or posters (Ida, 2025). Findings This indicates that the advantage of AI is not only on the aspect technical, but on his ability For create experience personal and contextual learning.

Another aspect that differentiates in a way striking between both media are ability provide bait personalized and immediate feedback. In learning conventional, a participant students who do error in understand order step evacuation or in choose proper diction For situation emergency Possible No will quick realize his mistake, or If realize, maybe No get adequate correction Because limitations interaction with facilitator. In scenario class with 30-40 participants educate, a teacher does not Possible give individual attention to every participant educate in a way simultaneous. In contrast, conversational AI can give bait come back directly on each the response given participant educate, with level very high specificity. Research about The development of an intelligent tutoring chatbot carried out by the collaboration between UNM and UM applies reverse prompting method where the chatbot does not direct give answer, but rather reverse question to student For dig understanding beginning they, then provide step by step guidance for perfect answer (Syamsunardi et al., 2025). The Socratic questioning approach in this digital format proven more effective in build deep understanding compared to with method lecture conventional.

Readiness psychological For face situation the crisis also became differentiator important





between both media. Research show that knowledge declarative about procedure evacuation although important No in a way automatic ensure readiness procedural moment crisis truly occurs. Anxiety factors, stress time, and uncertainty situation often cause someone who is theoretical know What should done precisely experiencing freezing or panic that inhibits appropriate response. Through exercise repetitive with conversational AI that simulates pressure and urgency situation crisis, participants educate can in a way gradually build tolerance to stress and develop response fixed automatic functioning although in condition psychologically non - ideal. Research about integration digital technology in the midst challenge weather and infrastructure in Indonesia underscore the importance of backup plans and adaptability in system learning, where the teacher does not only need control technology but also must capable teach without technology when necessary (Athillah, 2025). In context readiness communication crisis, lessons this is very relevant Because situation emergency often precisely happen when infrastructure normal communication is in progress disturbed, so that true readiness tested not at the time everything walk smoothly, but at the moment happen failure system.

D. Obstacles and Support Conversational AI Implementation For Learning Procedural Texts Evacuation in Context Post-earthquake

Literature study conducted identify various constraints and factors supporters in conversational AI implementation For learning text procedure evacuation post-earthquake, which provides description realistic about readiness technology This For adopted in a way wide in system education. Technical constraints be one of obstacle identified main ones, especially related with latency AI responses that can reach around three second in a number of implementation, which in context simulation evacuation that demands speed response can bother immersion and realism scenario (Maquilón et al., 2024).

Limitations infrastructure become constraint significant others, especially For implementation in the region vulnerable earthquakes are what most need learning media This However often own limited internet access and devices hard that is not adequate For running AI models that require computing heavy, so that digital divide has the potential widen inequality preparedness disaster interregional (Purnomo & Handayani, 2023). Constraints from side content and pedagogy are also not lost importance, where it is found that conversational AI that is not customized with context local and wisdom culture local can produce instructions evacuation that was not in accordance with condition geographical, social, and architectural specific something area, for example recommend point gathering that is not There is or use terminology that is unfamiliar to public local (Rachmawati & Firmansyah, 2024).





Limitations of AI in understand accents, dialects, and variations Language diverse regions in Indonesia also become constraint Serious Because system may misinterpret saying participant educate from area certain, so that bait return given become No accurate and precise confusing (Lestari et al., 2022). Psychological barriers also need to be get attention, where the interaction with conversational AI in scenario traumatic like earthquake earth potential trigger anxiety or even retraumatization of participants students who have experience bad related disaster, while system Not yet equipped with mechanism detection and response to condition psychological users in a way adequate (Briones et al., 2025).

However Thus, various factor supporters implementation is also identified through study library, started with the increasing availability of modern AI models easy accessed and integrated to in various learning platforms. Projects as ELOQUENCE funded by the European Commission shows that conversational AI development For application safety critical, including response emergency and services health, has reach level maturity that allows adoption in the sector education, especially with existence support For highly relevant multilingualism and multimodality For diverse Indonesian contexts in a way language and culture (Luque & Brutti, 2024). Support policy become factor supporters crucial others, where increasingly Lots government and institutions education that is aware urgency preparedness disaster and opening room For innovation technology in curriculum, including AI integration for learning communication crisis, as reflected in various initiative national about strengthening literacy disaster and utilization digital technology in learning Indonesian (Suhartono & Wijayanti, 2023).

Development study about increasingly prompt engineering mature too supporters significant, where educators and developers now own more guides clear about How designing effective AI prompts For scenario learning certain including For simulation evacuation so that quality AI response can controlled and adjusted with objective specific learning, for example with programming AI for in a way on purpose make errors so that participants educate Study identify weakness procedure or with arrange level difficulty conversation in a way gradually (Maquilón et al., 2024).

Support from side development capacity source Power humans also began seen with the more many training programs and workshops about utilization of AI in education, which helps Indonesian language teachers not only understand method using conversational AI but also the way designing scenario effective learning, doing modification content in accordance need local, as well as integrate AI simulation to in plan more learning wide without sacrifice achievement core competencies of the curriculum (Hidayat & Nurcahyo, 2025). Other supporting factors that are not lost important is increasing awareness and interest participant educate to AI technology,





which makes the process of adopting this media become more easy Because student No Again experiencing a significant technological barrier ; the generation that grew up with digital assistants and agents conversation tend more fast adapt with AI as partners learning, and enthusiasm they to technology precisely can utilized For increase engagement in learning text previous procedures considered boring (Kurniawan & Putri, 2024).

Support financial also started flow through various scheme grant research and development, both from government and sector private sector, which allows conducting pilot projects and development more conversational AI prototypes affordable and appropriate with context education in developing countries including Indonesia, with focus on optimizing more AI models light so that it can run on the device with specification limited or even offline (Nugroho, 2022). Work The same cross sector between academics, developers technology, government regions and institutions countermeasures disasters also become supporters strategic that allows development more content accurate and relevant in a way technical, where experts disaster can ensure that procedure AI- taught evacuation according to with standard national and conditions field, while educator ensure aspect pedagogical and linguistic awake with good, and developer technology optimize interface as well as experience users (Santoso & Maulana, 2023).

Discussion about constraint implementation need started with confession that even though conversational AI own potential outside normal, the adoption in system education in Indonesia is not can done in a way instant without consider reality infrastructure and readiness source Power existing humans. The first and most significant obstacle is inequality digital infrastructure between urban and rural areas, as well as between Java Island with the eastern region of Indonesia. Research about integration digital technology in the midst challenge weather and infrastructure in Indonesia revealed that gap infrastructure between schools in the city big with schools in the area remote make adoption technology education become No evenly (Athillah, 2025). When the weather bad cause blackout frequent electricity happens in many area, or internet disruption due to telecommunications towers disturbed flood or lightning, access to digital platforms to become totally blocked. This is become irony Because areas most in need learning evacuation that is area vulnerable frequent earthquakes is in an area with infrastructure limited the most difficult accessing AI- based media that requires stable internet connection and device adequate hardness.

The next obstacle nature pedagogical and cultural. Conversational AI developed without notice context local potential produce instructions evacuation that was not in accordance with condition geographical, social, and cultural local. As example, procedure effective evacuation in buildings multi-storey in Jakarta perhaps No relevant For local communities coast Lebak





Regency, part of which big his house made from wood and is near beach (Sugito, 2025). Likewise with terminology used terms technical disaster such as "tsunami", "early warning", or "evacuation route" perhaps not familiar to local communities more remote familiar with term local. Research about chatbot development by collaboration between UNM and UM utilise difference characteristics geographical between Malang City and Makassar City as power, with chatbots that are capable of compare risk earthquake earth, soil landslides, and floods in both regions (Syamsunardi et al., 2025). The approach This show that constraint cultural can overcome through careful design and engagement expert local in development content.

However Thus, various factor supporters implementation is also identified and provides optimism for adoption technology This in a way more wide. Support First come from development that AI technology itself, where modern large language models such as GPT-4 have reach level maturity that allows integrated to in various learning platforms with increasing costs affordable. Research about The development of the EduSiaga platform at UGM proves that student even though can develop integrated educational chatbot system with augmented reality for learning disaster, with proven results capable increase motivation and understanding students (Amri et al., 2024). This indicates that obstacle technical development No Again become constraint main, because technology has become increasingly accessible.

Support policies also become factor increasingly crucial strengthened. The Indonesian government through various initiative national about strengthening literacy disaster and acceleration digital transformation in the sector education has create conducive ecosystem for innovation like conversational AI For learning evacuation. Research about integration digital technology in the midst challenge infrastructure take notes that Lots school now hybrid in approach they teach student method utilise digital technology when condition allows while still maintain method conventional as alternative (Athillah, 2025). Flexible policies this is very important Because give room for innovation at a time confess reality that technology No always available. Teachers learn make material that can accessed offline, download content For used without internet, and teach student utilise offline features of various application.

Support the last one that doesn't lost important is increasing collaboration cross sector between academics, developers technology, institutions countermeasures disasters, and the government area. Research about chatbots for public coast Lebak Regency involves Work The same with the South Lebak Mitigation Cluster (GMLS) as source content main, which ensures that the information conveyed by the chatbot is appropriate with condition field and procedures applicable in the region (Sugito, 2025). Likewise, collaboration between UNM and UM involved team developer from two universities on two islands different, which allows exchange





knowledge and resources Power For produce more products good (Syamsunardi et al., 2025). Collaboration model kind of This need Keep going encouraged and expanded, because success conversational AI implementation For learning evacuation No Possible achieved by one party only, but need synergy from various stakeholders interests that have expertise and resources mutual power complete.

CONCLUSION

Interactive media conversational AI- based proven effective in increase understanding structure and rules text procedure through scenario evacuation interactive, because capable transform text static procedures become experience Study internalizing dynamics element linguistics in a way experience through practice directly. Conversational AI is also effective in practice participants' verbal and nonverbal responses learn in simulation communication crisis post-earthquake, especially in matter speed taking decision linguistics, accuracy diction, as well as ability read and respond signal emotional against talk. Comparison with conventional media show that interactive media superior AI- based in a way significant in matter authenticity simulation, frequency and variation practice, retention skills, as well as trust self students, although thus its implementation Still face various constraint technical, infrastructural, content, and psychological requirements overcome, but various factor supporters like availability of modern AI models, support policy, development teacher capacity and work The same cross sector give optimism for adoption technology This in a way more wide in learning Language Indonesia for communication crisis. Research results This can implemented through development customized conversational AI prototype with context local and cultural local as well as integrated to in curriculum Indonesian in the material text procedure with scenario evacuation varying earthquakes level the difficulties, supported by teacher training on prompt engineering and the use of AI as partners learning, as well as gradual pilot projects started from school with infrastructure adequate before expanded to area vulnerable disaster with a lightweight AI model that can operate offline, accompanied by mechanism mentoring psychological for participant students who have experience traumatic related disaster.

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