

Augmented Reality (AR) Based Disaster Responsive Curriculum Design For Arabic Vocabulary Mastery Post-disasters situation

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Abstract

Indonesia as a vulnerable country disaster face problematic Serious in preparedness face situation emergency, especially limitations mastery vocabulary much needed situational Arabic For coordination with team humanity international post- disaster curriculum existing learning Not yet integrate in a way systematic material disaster, technology cutting-edge, and mastery vocabulary functional based phase responsive emergency. Research This aim For designing curriculum responsive disaster based on augmented reality (AR) for mastery situational Arabic vocabulary post - disaster. The type of research used is studies library research with data sources in the form of books, articles journal scientific, and reports research. Data collection techniques using documentation, whereas data analysis was performed through analysis content qualitative with three stage reduction, presentation, and withdrawal conclusion. Research results produce four findings main : first, map integration material disaster to in competence base Arabic vocabulary that classifies vocabulary to in three cluster functional ; second, six principle design AR interface for context post-disaster that prioritizes simplicity, durability environment, and offline accessibility ; third, mapping need vocabulary based phase responsive emergency, transition, recovery initial, and reconstruction ; fourth, scenario model learning cycle four phase that synchronizes AR, mitigation, and production oral vocabulary. Research conclusions This is design curriculum responsive disaster effective AR- based For increase mastery situational Arabic vocabulary post-disaster. Implementation results study done through compilation map curriculum, development AR application with six principle design, drafting module based phase, and training facilitator and trial field in the community vulnerable disaster.

Keywords: Curriculum Design, Disaster Responsiveness, Augmented Reality, Arabic Vocabulary, Post-Disaster

INTRODUCTION

Indonesia is one of the countries with level vulnerability disaster the highest natural place in the world, located in the area Pacific Ring of Fire with meeting three plate tectonics active as



well as own series mountain fiery the most in the world. Conditions geographical This causing Indonesia to almost every year experience various type disaster like earthquake earth, tsunami, eruption mountain fire, flood bandang, land landslides and wind nipples the pickaxe that resulted in loss great soul and deep psychological trauma for survivors. Based on data from the National Disaster Management Agency Disaster, frequency incident disasters in Indonesia show trend improvement from year to year, with casualties and refugees spread across various regions of the country. In the midst of situation emergency post-disaster like this, communication become factor crucial that often neglected, even though ability communicate in a way effective between survivors, volunteers, teams savior and energy medical is very important success operation responsive emergency and the recovery process post-disaster. Unfortunately, the limitations mastery Language foreigners, including many Arabic languages used by power humanity international from Middle Eastern countries as well organization global humanitarian organizations such as UNHCR, UNICEF, and the International Committee of the Red Cross, often become obstacle Serious in coordination field and giving proper assistance target.

Phenomenon emergency communication in situation disaster This become the more complex If associated with need vocabulary that is situational and specific For every phase handling disaster. In the phase responsive ongoing emergency in hours to day first, the need the most urgent vocabulary are related words with rescue soul like order evacuation, request help medical, and identification location safe. While in the phase recovery, needs vocabulary shifting to aspects psychosocial like expression empathy, counseling simple, and purposeful activities restore a sense of normalcy to survivors. Research about learning Arabic for survivors disaster flood bandang in the Regency North Luwu revealed that learning strategy applied vocabulary must consider trauma factors and conditions psychological survivors, so that method conventional and rigid teaching No will effective implemented in context post-disaster (Sabae, 2025). Findings This show existence gap between need communication real in the field with availability learning methods and media capable language accommodate condition special survivors disaster. More further, mastery vocabulary Arabic language which is receptive (listening and reading) and productive (speaking and writing) are also not can achieved in a way instant, but rather requires a gradual and contextual learning process, where the factors environment safe and comfortable learning become prerequisite important for success acquisition language (Mahlani, 2024).

On the other hand, development technology reality added or augmented reality in a number of year final has open opportunity very promising new For revolutionize method learning disaster and training responsive emergency. AR technology allows merger between the real world and the virtual world simultaneously in the same environment, creating experience immersive, interactive, and contextual learning without must to expose learners in situations the real danger. Research about integration technology immersive to in curriculum training safety public show that use of augmented reality in training responsive emergency can increase awareness situational and decision making decision personnel savior in a way significant,





because realistic simulation allows repetition scenario without risk injury or loss material (Mohanty et al., 2025). AR technology also allows visualization object three relevant dimensions with situation disasters, such as debris buildings, tents evacuation, ambulance, and procedure evacuation, which can observed and explored by learners from various corner view. Which is not lost important, AR can operated through common devices owned public like smartphones and tablets, so No need investment device expensive and hard accessible to the public wide including in the regions remote and vulnerable areas disaster. The EON-XR platform was developed For transformation education knowledge social and management disaster has prove that technology reality added can create environment simulation realistic disaster for participant training, enabling they practicing response strategies emergency in a secure virtual environment before applied in situations real (EON Reality, 2024).

However Thus, the use of augmented reality in context learning disasters in Indonesia still is very limited and not yet Lots explored in a way systematic, especially For mastery vocabulary Language foreign in situation emergency. Most of the development of existing AR media Still focused on education mitigation disaster For children in the neighborhood school, with cargo local that combines wisdom traditional local to in content learning. Innovation Yogyakarta State University students who developed card AR based flash tradition drunk Mountain For education mitigation disaster land landslide in the Regency Magelang is one of the example breakthrough that combines AR technology with wisdom local, but its development Still limited to context disaster land landslide and not yet touch aspect mastery Language much needed foreign in coordination help international (Pratama et al., 2025). The same thing was also found in map media development interactive AR with approach spiritual-moral values for education mitigation disaster flooding at school basic, which although has proven effective in a way media quality and performance features, but the load Still limited to understanding disaster in Indonesian and not yet reach need communication cross Language in situation emergency (Fuedsi et al., 2026). The gap between potential big AR technology and its lack development For mastery vocabulary situational Arabic post-disaster become gap urgent research For filled, remembering Arabic is one of the Language Work main in operation humanity international in Southeast Asia and the Middle East.

Need will design curriculum that is special integrate material disasters, augmented reality technology, and mastery vocabulary situational Arabic become the more urge remember dynamics ongoing global disasters increasing and getting bigger complex. Responsive curriculum disaster No can designed with approach rigid and uniform conventional, but rather must nature adaptive to type disaster, phase responsive emergency, profile learners, as well as context socio-cultural public local. Book guide phrase endure life Arabic language published by Tuttle Publishing presents vocabulary emergency in organized modern standard Arabic based on situation such as in hotels, taxis, restaurants, and in condition emergency, but the approach used Still nature general and not designed special For context learning integrated with AR technology (Gharsa & Mansouri, 2024). Temporary that, the book Sensitive Conversations: Arabic for Protection & Mental Health Workers which was published in 2026 more focus on the Levantine





dialect for worker humanity in crisis refugees, with provide script conversation Ready use For trauma interviews and support mental health, however Not yet touch aspect design systematic and integrated curriculum with technology reality added (Learn, 2026).

Systematic means think about all component with consider the role of each component and how interact One each other so that set goals can achieved completely. Harmonious interaction or heterogeneous between element the one with other elements will influence results and will influence succeed whether or not objective (Azmi et al., 2022). Second source This strengthen argument that although has There is effort provision material Arabic for context humanity, still very little research that is special study How material the can integrated to in curriculum AR -based designed special For mastery vocabulary situational post-disaster.

Based on all over description background behind above, research This aim For design and develop design curriculum responsive disaster augmented reality based for mastery situational Arabic vocabulary post- disaster research This important done Because No only fill in gap existing literature, but also provides contribution much needed practical in effort improvement preparedness disaster and effectiveness communication cross Language in situation emergency. The resulting curriculum design expected can become guide for learning media developers, educators, volunteers humanity, as well as institutions operating in the field countermeasures disaster in organize training mastery vocabulary contextual, immersive, and adaptive Arabic to various phase and type disaster. More from that, research this is also expected can push acceleration adoption augmented reality technology in system education disaster national, in line with effort achievement of the Sustainable Development Goals (SDGs) in particular the 4th goal about education quality and the 13th goal about action handling change climate.

METHOD

Study This use type study literature or library research, namely something approach research in which all data and information obtained from various source written materials stored in libraries, digital archives, academic databases, and repository scientific other without do direct data collection from field or subject human. Research literature chosen Because focus main from study This is development design curriculum that is theoretical and conceptual, where researchers need analyze, synthesize, and evaluate in a way critical various thoughts, theories, findings, and models that have been There is previously about integration material disasters, the use of augmented reality in learning, as well as mastery vocabulary situational Arabic post-disaster. Type of research This allows researchers For build foundation solid and formulaic theory recommendation design curriculum based on synthesis from various source credible and relevant literature (Creswell & Poth, 2021).

Data sources in study literature This consists of on three type main, namely book texts and monographs scientific, articles journal scientific Good national and international, as well as report results relevant research with topic study. Book texts and monographs scientific made into as primary data sources for understand framework underlying theory development curriculum, principles augmented reality design in learning, as well as theory acquisition





vocabulary Language second in context situational and emergency. Journal article scientific become very important secondary data sources Because serve findings empirical latest from various study applications that have been carried out by experts in the field, incl effectiveness of augmented reality in education disaster, mapping need vocabulary in context responsive emergency, as well as learning models integrative that has been tested try in various population and setting. Report results research published by institutions research, ministry related, organization humanity international such as UNESCO or UNDRR, as well as results study from institution affiliate education height is also utilized as tertiary data sources that provide description about implementation real from various educational programs disaster and learning Language in situation crisis (Sugiyono, 2022).

Data collection techniques used in study This is technique documentation, namely something method data collection with method tracing, identifying, recording, and organizing various information from documents relevant written with focus research. The data collection process begins with keyword composition comprehensive search, including terms such as " curriculum responsive disaster ", "augmented reality education disaster "," situational Arabic vocabulary "," learning Language post-disaster ", " design emergency AR interface ", as well as combination from terms the Good in both Indonesian and Language English. Search data sources are carried out through various academic databases trusted such as Google Scholar, Scopus, Web of Science, ERIC, and Garuda Portal for sources national, as well as through catalog digital library of various leading universities. After successful data sources identified, steps furthermore is do selection beginning based on relevance title and abstract, then to be continued with reading comprehensive to sources that meet criteria inclusion. Information important things found in every data sources are recorded in a way systematic in sheet Work documentation that has been prepared, which includes recording main ideas, arguments key, findings main, and quotes relevant important with each sub- focus research (Sari & Lestari, 2024).

Data analysis techniques applied in study This is analysis content qualitative (qualitative content analysis) conducted through three stages main in a way simultaneous and repeated, namely data reduction, data presentation, and data extraction conclusion or verification. Stage data reduction begins with read all over data sources that have been collected in a way repeatedly For get deep understanding about overall fill in, then the coding process is carried out with label or code on each relevant unit of analysis with focus research, such as draft integration curriculum, principles AR design, phase disaster, vocabulary priorities, and learning models. The codes that have been produced Then grouped to in more categories big based on similarity theme or emerging patterns, and categories This furthermore summarized become themes the main thing that becomes structure discussion in results research. Stage data presentation is done with compile all over information that has been reduced to in form narrative organized descriptive in a way systematic based on sub- subtitles research, where each findings served in a way sequential and complete with relevant quotes For strengthen the argument. Stage withdrawal conclusion done in a way continuously since the beginning of the analysis process, where the researcher always take notes patterns beginning, relationship



between categories, as well as propositions that emerge, then verified with browse return original data source For ensure that conclusions drawn truly based on strong evidence and not go out from context original (Sugiyono, 2022).

Testing techniques validity of data in study literature This use four adapted criteria from the concept of trustworthiness in study qualitative, namely credibility, transferability, dependability, and confirmability. Testing credibility done through several strategies, first is extension time and repetition search data sources for ensure that No There is sources important things that are missed and understanding to data sources have been reach point saturated. Second, researchers do triangulation source with compare information from various type different data sources, for example compare findings from book text with article journals and reports research, for see whether information obtained consistent or precisely show necessary differences analyzed more continue. Third, researchers do discussion with colleague colleagues or a mentor who has expertise in the field curriculum, technology education, or Arabic linguistics for get input critical to interpretations that have been done to data sources. Testing transferability done with compile thick and detailed description of context, characteristics data sources, as well as procedure analysis used, so reader can evaluate Alone to what extent are the results study This can diverted or applied to other similar contexts. Testing dependability or consistency done with maintain complete and transparent audit trail, namely documentation the entire research process start from search data sources, selection, recording, coding, to withdrawal conclusion, so that other researchers can track return steps that have been taken done and verified consistency logic used. Testing confirmability or objectivity done with ensure that the findings produced truly originate from data sources and not tainted by bias or interest subjective researchers, including with method include quotes direct from source original For every claim or findings important things that are presented, as well as in a way explicit differentiate between facts found in data sources with interpretation or opinion researchers (Creswell & Poth, 2021).

RESULTS AND DISCUSSION

Research result

1. Disaster Material Integration Map to in Basic Competence of Situational Arabic Vocabulary

Study results library show that integration material disaster to in competence base vocabulary situational Arabic need systematic mapping based on level emergency and context spatial post-disaster. Based on analysis to various source bibliography, found that approach thematic-integrative become runway main in compile map integration mentioned, where the material disaster No taught as content separated but braided in a way organic to in themes relevant vocabulary with phases responsive emergency (Rahman & Hasyim, 2023). Mapping This classify vocabulary to in three cluster main, namely cluster rescue and assistance first, cluster communication base with team evacuation, as well as cluster identification need main and



services emergency. More continue, results studies library disclose that competence base situational Arabic vocabulary post-disaster must formulated with consider level frequency the appearance of words in scenario disaster real, so that words like " نجدة " (help), " إخلاء " (evacuation), and " مأوى " (place protection) is placed as priority highest in hierarchy learning (Al-Khalidi et al., 2022). Additionally, maps integration this also takes into account aspect gradation difficulty linguistics, starting from vocabulary receptive (listening and reading) phase beginning learning, then gradually going to vocabulary productive (speaking and writing) in the phase continued, so that learners No experience burden cognitive excessive when faced with a situation a real emergency (Wahyudi, 2024). Research results the library also shows that success integration this is very much determined by the existence of harmony between material disaster with context socio-cultural public local, considering response to disasters are greatly influenced by values local and experience collective community to incident disaster previously (Hasanah & Zainuddin, 2023). With thus, the map the resulting integration No nature rigid and universal, but rather adaptive to regional characteristics and types the most likely disaster occurs in the environment learners, so that curriculum responsive disaster can truly functioning as tool contextual and applicable preparedness (Pramono et al., 2025).

2. Characteristics of Augmented Reality (AR) Interface Design and Simulation for Context Post-disaster

Literature review about characteristics design Augmented Reality interface and simulation for context post-disaster produce findings that there is six principle absolute design must be fulfilled so that AR technology can function optimally in situation emergency. Principle First is simplicity interface (interface simplicity), where all visual elements, navigation, and controls interaction must designed minimal Possible without reduce core functionality, considering users in situation post-disaster tend experience stress, fatigue, or disturbance concentration due to trauma (Chen & Watanabe, 2021). Principles second is resilience to condition non - ideal environments, where AR simulations must be still can operating on the device with specification limited, internet connection is not stable, and condition common poor lighting happened at the location disaster, so that technology No become barrier precisely become solution in the middle limitations (Sutrisno, 2022). Research results the library also identifies principle third in the form of bait multimodal feedback, namely utilization simultaneous from visual, auditory, and haptic cues For confirm every action users, because in situation noisy or dark even though, learners still can accept information response from AR system used (Martinez & Putra, 2023). Principles the fourth one that doesn't lost important is minimal design burden memory work, where all instructions and directions use must available in a way contextual and just-in-time, not served in long manual form that must be read and remember moreover before, remembering condition psychological survivors an unforeseen disaster allows For processing information complex in long time (Thompson et al., 2022). Furthermore, the principle fifth is compatibility cross devices and offline availability, considering access to device state-of-the-art and internet network on site





disaster is very limited, so that AR design must accommodate various level devices and provide content that can accessible without active internet connection (Lestari & Firmansyah, 2024). Principle sixth is existence feature possible visual and auditory adjustments arranged themselves by users, such as arrangement size text, volume, contrast color, and speed simulation, for accommodate diversity need users including person with disabilities disability sensory which is also vulnerable affected disaster (Nugroho, 2025). Characteristics design interface that has been identified This in a way collective form framework reference for developer curriculum and designers instructional in designing a truly immersive AR simulation responsive to reality post-disaster, not just addition technology that is actually add complexity learning (Rahmawati et al., 2023).

3. Analysis The Need for Functional Arabic Vocabulary Response Phase Based Emergency and Recovery Disaster

Research result library about analysis need necessary functional Arabic vocabulary in context post-disaster show that vocabulary the No can arranged in a way uniform but must grouped based on phases specific in cycle handling disaster. In the phase responsive ongoing emergency in hours to day First post-disaster, needs most urgent vocabulary are related words with rescue soul, such as order evacuation, request help medical, identification location safe, and communication base with team deep savior Arabic includes vocabulary like " ? ين المخرج A " (where is the door out ?), " ? هل هناك مصابون " (what are there any injured victims ?), and " اتصل " (contact ambulance) (Hassan & Mohamed, 2021). Entering phase ongoing transition from day second until Sunday second post-disaster, needs vocabulary shifting to aspects fulfillment need base like logistics, clothing, food, shelter, and service health advanced, where learners must control vocabulary For convey complaint health, ask help logistics, and communication with officers at the post evacuation (Suryani, 2022). In the phase recovery the beginning that took place from Sunday third until month third, analysis need identify importance related vocabulary with the recovery process psychosocial, such as expression empathy, counseling simple, game children post-disaster, and activity community with a purpose restore a sense of normality in life everyday, so that vocabulary like " لا تخف " (don't afraid), " كل Shay Sokoun Al Mo " (all of them will fine only), and " ? كيف تشعر اليوم " (how your feelings day This ?) become very relevant in the phase This (Abdullah et al., 2022). Research the library also reveals that in the phase recovery advanced until reconstruction, needs vocabulary the more complex covering related terms with development return place stay, recovery eye livelihood, administration assistance, as well as coordination inter-institutional, so that learners need equipped with vocabulary technical like " ترخيص البناء " (permission wake up), " تعويضات " (compensation / replacement loss), and " إعادة تأهيل " (rehabilitation) (Kurniawan & Dewi, 2024). Findings important other from study library This is that need vocabulary in each phase is largely determined by the type the role played learners in situation disaster, is it He play a role as survivors in need assistance, volunteers who provide assistance, or coordinator the governing





field distribution assistance, so that curriculum responsive disaster must provide track differentiated learning For every profile role (Mulyono et al., 2025). With mapping need based phases and roles this, learning situational Arabic vocabulary post-disaster become more directed, efficient and appropriate because learners only focused on real vocabulary needed in the phase and role specific possibilities big will they face (Wijaya, 2023).

4. Scenario Model Disaster Responsive Learning : Synchronizing AR, Mitigation, and Oral Vocabulary Production

Literature review about scenario models synchronized learning Augmented Reality technology, materials mitigation disasters, and production oral Arabic vocabulary produces findings that the most effective model is a cycle model four the initial phase with phase visual exploration using AR. In the phase this, learner invited For observe AR simulation that displays scenario disaster certain along with objects three relevant dimensions, such as debris buildings, tents evacuation, ambulance, or post health, while in a way passive listen pronunciation related Arabic vocabulary with objects the without pressure For direct produce it (Hwang & Chen, 2021). The second phase is phase imitation guided, where the learner requested For imitate pronunciation vocabulary that has been heard in phase previously with help feature introduction integrated speech recognition in AR applications, which can give bait come back direct about accuracy articulation and intonation so that error pronunciation can quick corrected before become wrong habits (Santoso, 2022). The third phase is simulation role interactive, where learners face to face with scenario based on augmented reality which requires active verbal response, for example play a role as a victim who must request help in Arabic, or as volunteers who must give instructions evacuation, so that production process occurs oral contextual and communicative vocabulary (Rashid et al., 2023). Research results the library also shows that in the phase fourth namely reflection and reinforcement, learners invited For record and listen return production oral they during simulation, then compare it with the correct pronunciation model, as well as get strengthening through repetition vocabulary that is still weak in form card digital flashcards that are also integrated with AR (Purnama & Hidayat, 2024). Findings important other from study library This is that scenario model the most effective learning is the one who takes advantage of the principle of "gradual release of responsibility", where at the beginning learning AR's role is very dominant as role model and guide, but in a way gradually role the reduced so that learners the more independent in produce vocabulary without relies on visual cues from AR simulation (Widodo et al., 2025). In addition, research the library also identifies that synchronization between material mitigation and production oral vocabulary must done through "content and language integrated learning" approach, where content mitigation (eg method take shelter moment earthquake or method give help first) taught in a way simultaneous with Arabic language used For communicate content said, so that learners No only control vocabulary but also understand procedure real safety (Garcia & Martinez, 2022). The ideal scenario model should also provide track adaptive that can adapt level difficulty simulation





based on performance learners in the phases previously, for example If learners show mastery fast vocabulary so scenario will enriched with variation more sentences complex, on the other hand If learners experience difficulty so simulation will give repetition and practice addition before continue to level next (Mulyati, 2023). With comprehensive scenario model implementation this, learning situational Arabic vocabulary post-disaster No Again nature memorization mechanical but become experience immersive, contextual, and mastery - oriented learning competence communicative much needed real when disaster truly occurred (Kusuma & Nugraha, 2025).

DISCUSSION

Discussion in study This focused on analysis deep to four findings main results study library, namely map integration material disaster to in competence base situational Arabic vocabulary, characteristics design AR interface for context post-disaster, analysis need vocabulary functional based phases, as well as scenario models learning that synchronizes AR, mitigation, and production oral vocabulary. Fourth aspect the discussed in a way integrative with referring to the findings latest from various study empirical and relevant theoretical.

Discussion started from map integration material proven disaster need approach thematic-integrative, where the material disaster No stand Alone but braided in a way organic with themes contextual vocabulary. Findings This in harmony with results research that shows that effectiveness education mitigation disasters are very much determined by the capabilities of learning media in serve integrated content in a way meaningful, not just gathering fragmented information (Fuedsi et al., 2026). More further, other studies confirm that approach integrative in learning disaster capable increase preparedness student in a way significant, because the material presented in coherent framework more easy understood and remembered (Fuedsi et al., 2024). Integration between content disaster with competence linguistics in context learning situational Arabic post-disaster in line with principle learning integrated which emphasizes that mastery skills linguistics will more optimal if associated with context authentic and relevant use with need learners. The research results also strengthen argument that mapping based on frequency the appearance of words in scenario real is an effective strategy For determine priority learning, remembering No all vocabulary own level the same urgency in situation emergency (Syafitri & Nurjanah, 2025). With thus, the map the resulting integration in study This No only nature theoretical but also applicable Because based on the principles that have been tested in various context education disaster.

Next, the discussion about characteristics design AR interface for context post-disaster reveal that six principle identified design own relatedness close with characteristics users and conditions environment place technology the operated. Principle simplicity interface for example, to become foundation main Because users in situation post-disaster often is at in condition stress and fatigue, so that complicated interface precisely will become inhibitors. Findings This strengthened by the results research that shows that the AR media is designed with interface simple and intuitive capable increase effectiveness learning mitigation disaster until

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fulfil criteria very good quality in aspects performance features (Fuedsi et al., 2026). Principles resilience to condition non - ideal environment also becomes differentiator main between AR design for normal learning with AR for context emergency, where the availability of offline mode and the ability operating on the device with specification limited become must absolute. Research about effectiveness of AR for mitigation disaster tidal floods prove that AR technology remains effective used in the field although with limitations infrastructure technology, during the design accommodate condition real users (Fuedsi et al., 2024). Principles bait multimodal feedback that combines visual, auditory, and haptic cues become very crucial Because in situation noisy or minimal lighting, users Still can accept information response from system through channel sensory that is still functioning optimally. Research about transformation learning via e- module interactive AR -based assertion that use diverse multimedia elements in AR capable increase literacy information student in a way significant, because the learning process involving more Lots senses simultaneously (Syafitri & Nurjanah, 2025). Principle fourth until the sixth which includes minimization burden memory work, compatibility cross devices, as well as feature visual and auditory adjustments, respectively collective form framework user - centered design, where needs and limitations are taken into account users become consideration main in every decision design.

Discussion about analysis need functional Arabic vocabulary based phase responsive emergency and recovery disaster reveal that grouping vocabulary based on phases specific in cycle disaster is the most rational and efficient approach. Every phase own characteristics need different communication, so that relevant vocabulary in the phase responsive emergency Not yet Of course The same with what is needed in the phase recovery. Research about AR media development for education mitigation disaster flood show that approach gradually in delivery material disaster, starting from introduction risk until steps mitigation, proven more effective compared to delivery of a nature simultaneously and comprehensively (Fuedsi et al., 2026). Findings This relevant with context learning vocabulary, where the gradation material from the most urgent to the more complex allows learners For quick use most needed vocabulary without must wait mastery all over vocabulary moreover first. More far, research about effectiveness of AR on preparedness disaster confirm that deep understanding about context and time use something information become factor determinant success education disaster, because the right information at the right time own far value more big compared to the same information delivered outside context temporal (Fuedsi et al., 2024). Division role learners as survivors, volunteers, or coordinator the field also becomes findings important Because every role own not quite enough responsibility and needs different communication. Survivors for example, more need vocabulary For request help and convey condition himself, while volunteers need vocabulary For give instructions and coordination, and coordinator field need more vocabulary technical and administrative research about improvement literacy information through e- AR module proves that personalization content based on role and context users capable increase effectiveness learning in a way significant, because learners feel that what was learned truly relevant with possible situations they face (Syafitri & Nurjanah, 2025).





Discussion final regarding scenario models learning responsive AR synchronized disaster, material mitigation, and production oral vocabulary. Cycle model four the initial phase with visual exploration, followed by imitation guided, simulation role interactive, and ends reflection as well as strengthening, reflecting implementation principle learning learner -centered phase. The visual exploration phase allows learners build connectedness between visual form of the object with equivalent vocabulary in Arabic without pressure For quick produce, so that the coding process information in memory term long become more strong. Research about map media interactive AR with spiritual-moral value approach shows that phase rich visual exploration with object three dimensions capable increase engagement and motivation Study student in a way significant (Fuedsi et al., 2026). Imitation phase guided with support feature introduction voice become bridge between understanding passive and production active, where the learner get bait come back direct about accuracy articulation and intonation they so that error can quick repaired. Research about effectiveness of AR for mitigation disaster prove that feature interactive that provides response direct to action users is one of the factor the key that differentiates AR from learning media conventional (Fuedsi et al., 2024). Simulation phase role interactive is the core of this model because in the phase here it is production process occurs oral contextual and communicative vocabulary, where learners No just repeat the word but use it in a scenario that resembles situation real. Research about transformation learning through the e- module AR confirms that immersive and contextual simulation capable increase literacy information student Because they experience direct usage process information in relevant situations (Syafitri & Nurjanah, 2025). The fourth phase in the form of reflection and reinforcement complete cycle with give chance to learners For evaluate performance they alone and strengthen vocabulary that is still weak through repetition structured. Implementation The principle of gradual release of responsibility in this model also reflects understanding that objective end learning is independence learners, so that along walking time, dependence on visual cues from AR simulation must reduced in a way gradual. The content and language integrated learning approach is implemented in synchronization between material mitigation and production oral vocabulary is also in line with findings that learning integrated language with content substantive more effective compared to learning separate languages from content, because learners see Language as tool For understand and communicate something meaningful, not just memorized objects.

CONCLUSION

Based on all over results study libraries that have been described, can concluded that design curriculum responsive disaster augmented reality based for mastery situational Arabic vocabulary post-disaster need systematic integration between material disaster with competence base vocabulary through mapping adaptive thematic to context local. Characteristics design AR interface for context This must put forward six principle main that is simplicity, durability environment, bait multimodal feedback, minimization burden memory, compatibility cross device with availability offline, as well as feature adjustments that can be

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IJETER, Volume 04 Issue 02, 2026



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made accessed by various users including person with disabilities disability. Analysis need functional Arabic vocabulary show that vocabulary must grouped based on phase responsive emergency, transition, recovery beginning, until reconstruction, as well as customized with role specific learners as survivors, volunteers, or coordinator field. Scenario model the most effective learning is a cycle model four phase that synchronizes AR, material mitigation, and production oral vocabulary through gradual release of responsibility approach and content and language integrated learning, so that learning become immersive, contextual, and competency - oriented communicative real.

Implementation from results study This started with compile map curriculum that groups Arabic vocabulary to in cluster rescue, communication basic and needs main based on frequency emergence and gradation difficulties, then integrate it in a way thematic with material relevant disasters with regional characteristics and types disaster local. Next developed AR applications that implement six principle design interface with provides offline mode, feed multimodal feedback, as well as feature visual and auditory adjustments, then tested try on device with specification diverse in locations that resemble condition post-disaster. After application ready, arranged module learning based loading phase vocabulary specific For phase responsive emergency, transition, recovery early, and reconstruction, as well as provide track learning different For profile survivors, volunteers, and coordinators field. Implementation in the field done through training facilitators who understand the cycle model four phase, continued with trial limited to the community vulnerable disaster, then evaluated For repair before more launches area. Finally, the results implementation This documented as best practice and socialized to stakeholders policy education and disaster For adoption and adaptation in various regions with characteristics various disasters.

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