DEVELOPING *NAHMA* (*NAHWU* MATCHING) FOR BASIC *NAHWU* LEARNING GAME: A NEED ASSESSMENT STUDY

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Abstract

In this epidemic era, teachers are expected to build a successful learning environment in conjunction with online learning. Basic *nahwu* learning is one of the lessons affected by the pandemic situation. Learning the Arabic language system is increasingly difficult to do online because the Arabic language system is very different from Indonesian, as the learners' mother language. The presentation of linguistic rules clearly cannot be done directly. Educators are responsible for innovating *nahwu* learning through the unity-based Nahma educational game "Nahwu Matching" so that learners can easily understand and avoid boredom during the full online learning. The use of educational games is the right solution to overcome this problem. The aims of this study are: (1) to find out the needs of lecturers and students, (2) to describe the prototype picture of the Nahma. The data of this study were obtained through test and non-test data. The tool of the test is a written test while tools of the non-test data are interviews, observations, and questionnaires on the needs of lecturers and students. Based on the findings, it can be stated that both students and teachers require engaging learning applications for *Nahwu* that can successfully assist the learning process.

*Keyword*s: Nahma "Nahwu Matching", game, unity of application, basic Nahwu learning

Abstract

Di era pandemic ini, guru/pendidik memiliki tuntuntan mampu menciptakan suasan pembelajaran yang efektif di tengah pembelajaran dalam jaringan. Pembelajaran *nahwu* dasar, satu diantara pembelajaran yang terdampak oleh situasi pandemi. Pembelajaran akan sistem bahasa Arab ini semakin terasa sulit dilakukan secara daring, hal ini karena sistem bahasa Arab yang sangat berbeda dengan bahasa Indonesia, sebagai bahasa Ibu para pembelajar. Pemaparan kaidah-kaidah kebahasaan jelas tidak bisa dilakukan secara

langsung, maka pendidik memiliki tanggungjawab untuk melakukan inovasi pembelajaran *nahwu* melalui game edukasi Nahma "*Nahwu* Matching" berbasis unity agar dengan sangat mudah dipahami oleh pembelajar serta tidak menimbulkan kebosanan ditengah pembelajaran yang dilakukan serba dalam jaringan. Pemanfaatan game edukasi merupakan solusi tepat dalam mengatasi masalah ini. Tujuan penelitian ini yaitu: (1) mengetahui kebutuhan dosen dan mahasiswa (2) mendeskripsikan gambaran prototipe media game Nahma. Data penelitian ini diperoleh melalui data tes dan non tes. Alat tes yang digunakan yaitu tes tulias sedangkan data non tes yang digunakan berupa wawancara, observasi, serta angket kebutuhan dosen dan mahasiswa, angket uji validitas ahli terhadap game Nahma " *Nahwu* Matching" untuk pembelajaran *nahwu* dasar dan dokumentasi foto. Atas dasar temuan tersebut, dapat dinyatakan bahwa baik siswa maupun guru memerlukan aplikasi pembelajaran *Nahwu* yang menarik yang dapat membantu proses pembelajaran dengan sukses.

Kata Kunci: *Nahma " Nahwu Matching*, game, unit aplikasi, pembelajaran *Nahwu* dasar

INTRODUCTION

Currently, Indonesia is slowly starting to enter the new normal era after previously carrying out social distancing, physical distancing, and large-scale social restrictions amid the spread of the Covid-19 pandemic. Suspected cases of Covid-19 in Indonesia were reported on March 2, as many as two cases.[1] Since then, the government has immediately implemented policies to prevent the spread and increase of suspects. In line with that, all activities related to public gatherings that can be carried out without face-to-face meetings are temporarily closed, and their implementation is transferred to another system. The implementation is carried out in stages in line with the increasing number of suspects, which is quite fast.

The Covid-19 pandemic, spreading so fast, has undoubtedly greatly influenced people's lives in all fields, including education. Educational activities that are usually carried out face-to-face in schools and campuses have had to be diverted into learning with an online system to prevent and suppress the spread of the virus. However, of course, changes to the system more or less affect the learning process. In fact, for some parties, it is considered disturbing and difficult. It is not only the parents of the students but also educators who do not understand the internet that will be difficult to adjust.

Lectures at all universities are also carried out online per the third week of March 2020 since there was an appeal for social distancing.[2] Around March 16-18, 2020, universities in Indonesia began to implement this online system of lectures through the decisions of the heads of their respective institutions based on circulars from the Ministry of Education and Culture

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[1] Wahyu Aji Fatma Dewi, "Dampak COVID-19 terhadap Implementasi Pembelajaran Daring di Sekolah Dasar," *EDUKATIF : JURNAL ILMU PENDIDIKAN* 2, no. 1 (2020): 55–61, doi:10.31004/edukatif.v2i1.89.

[2] Redaksi, "Hadapi Covid-19, Pencegahan Paling Utama," *Suaramerdeka.com*, 2020, Retrieved March 8, 2021, https://www.suaramerdeka.com/opini/pr-04128755/hadapi-covid19-pencegahan-paling-utama?page=all.

(Kemendikbud) and the Ministry of Religion (Kemenag) for religious universities.[3] Of course, universities that start their even semesters in January – February have done many face-to-face lectures. However, this is not the case for universities, for which most start their even semester lectures in March. It can be said that even semester lectures are entirely carried out online based on Circular Number: 657/03/2020 concerning Efforts to Prevent the Spread of Covid-19 (Corona) in Higher Education.

The Arabic Language Education Study Program also carries out lectures with an online system at Semarang State University for all subjects. Online lectures are carried out using various facilities and services, applications and websites. The services used include Zoom Meeting, Google meet, Google Classroom, CloudX, Whatsapp, and many other applications. The use of these applications is adjusted to the course lecturers and students' agreement and to the lecture's needs. In addition, online lectures are also carried out for basic *nahwu* science courses. *Nahwu* science courses are normal Arabic courses that are scheduled in three courses across three semesters.[4]

Based on the results of initial observations related to understanding and learning basic *nahwu* in Arabic language education at Semarang State University, there are several problems in learning basic *nahwu*, including using an online system and without the use of multimedia in learning makes students experience boredom and difficulty digest the rules of the language being studied. It is proven by the results of preliminary research conducted by researchers on 30 early semester students who were randomly selected, 50% of students stated that basic *nahwu* learning was very difficult, 34.38% of students said it was difficult, 3.1% said it was normal, 3.1% said it was easy, and 9.3% others stated very easily from those 71.

From the explanation above, researchers are interested in developing the "Nahma" *Nahwu* Matching game for basic *Nahwu* learning based on the Unity application in the Arabic Language Education study program. The game that will be developed is expected to solve the problem of basic *Nahwu* learning that is carried out online. Besides, students' understanding of *nahwu* can be obtained in a simple and fun way. The development of this game is also one of the adaptations of *nahwu* teaching, which is conventional for millennials.

Jasson explained that "game" means "permainan" in Indonesian language. The game also refers to "intellectual agility" (intellectual playability). At the same time, the word "game" itself can

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[3] Kemenag, "Perkuliahan Semester Genap PTKI Dilakukan Secara Daring," *Kemenag.go.id*, 2020, Retrieved March 8, 2021, https://kemenag.go.id/read/perkuliahan-semester-genap-ptki-dilakukan-secara-daring-oq1mo; Kemendikbud, "16 Maret 2020: Kemendikbud Dorong Pembelajaran Daring Bagi Kampus Di Wilayah Terdampak Covid-19," *Kemdikbud.go.id*, 2020, Retrieved March 8, 2021, https://bersamahadapikorona.kemdikbud.go.id/16-maret-2020-kemendikbud-dorong-pembelajaran-daring-bagi-kampus-di-wilayah-terdampak-covid-19/.

[4] Program Studi Pendidikan Bahasa Arab, "Kurikulum PBA UNNES 2020 (Kampus Merdeka)" (Semarang: Universitas Negeri Semarang, 2020), Retrieved March 8, 2021, http://pba.unnes.ac.id/kurikulum-pendidikan-bahasa-arab-universitas-negeri-semarang/.

be interpreted as an arena for the decisions and actions of the players. There are targets to be achieved by the players. To a certain extent, intellectual agility is a measure of the extent to which a game is interesting to play to its full potential.[5]

According to Wahono, game is a structured or semi-structured activity that is usually intended for entertainment and sometimes can be used as a means of education. The characteristics of fun, motivating, addictive and collaborative games make this activity popular with many people. The game is interesting and fun.[6]

Kirriemuir and McFarlane divide games into five types. First, action games in this genre are the most popular games.[7] This type of game requires the player's reflex ability. One of the popular action subgenres is First Person Shooter (FPS). In FPS games, speed of thinking is required. This game is made as if the player is in that atmosphere. Second, action-adventure, this genre combines action and adventure gameplay. For example, players are invited to explore an underground cave while defeating enemies, look for ancient artifacts, or cross a river. Third, sports, this game genre brings sports to a computer or console. Usually, the gameplay is made as close as possible to the conditions of the actual sport. Fourth, puzzles, the puzzle genre, presents several forms of game offerings such as puzzles, matching the colors of the balls, mathematical calculations, arranging blocks, or recognizing letters and pictures. Fifth, word games are usually designed to test language proficiency or explore its properties. Word Games are generally used as entertainment but have also been shown to serve an educational purpose.

Unity is a Game Engine built in 2004 by David Helgason (CEO), Nicholas Francis (CCO), and Joachim Ante (CTO) in Copenhagen, Denmark and launched in 2005.[8] Unity is very popular among developers because of its engine, which is very easy to use even for new users. Initially, Unity was a paid software and was used by about 53% of developers worldwide. However, in 2009, they launched their product for free, resulting in Unity's increasing popularity. Until now, Unity itself has been divided into 3 categories: Unity Free, Unity Plus, and Unity Pro.[9]

Graphics in unity applications are made with high-level graphics for OpenGL and DirectX. Unity applications support all file formats, especially common formats such as all formats of art

[5] Jasson, *Role Playing Game (RPG) Maker* (Yogyakarta: ANDI, 2009).

[6] Maria Virvou, George Katsionis, and Konstantinos Manos, "Combining Software Games with Education: Evaluation of Its Educational Effectiveness," *Journal of Educational Technology & Society* 8, no. 2 (2005): 54–65, http://www.jstor.org/stable/jeductechsoci.8.2.54.

[7] John Kirriemuir and Angela McFarlene, *Literature Review on Games and Learning*, Futurelab Series, Report 8 (Bristol: NESTA Futurelab, 2004), https://www.nfer.ac.uk/literature-review-in-games-and-learning/.

[8] John K. Haas, "A History of the Unity Game Engine - An Interactive Qualifying Project" (Worcester: Worcester Polytechnic Institute, 2014), https://web.wpi.edu/Pubs/E-project/Available/E-project-030614-143124/unrestricted/Haas_IQP_Final.pdf.

[9] Zohan, "Tentang Unity 3D," *Www.zohan.my.id*, 2020, Retrieved February 19, 2021, https://zohan.my.id/2020/05/27/sejarah-unity-3d/.

applications. The unity application is compatible with 64-bit versions, can operate on Mac OS x and windows, and can produce games for Mac, Windows, Wii, iPhone, iPad and Android.[10]

Arabic syntax (the science of *nahwu*) is one of the main elements in Arabic. To study and understand Arabic texts, both classical and modern, non-Arabic people master the science of *nahwu*, because this knowledge helps in understanding the meaning and intent of the word changes in Arabic.

Basic *nahwu* learning courses are introductory courses in Arabic grammar or syntax. After taking this course, students can explain the syntax, the object of study, and the tradition of Arabic syntactic studies, including construction, categories, functions, relations, patterns, inflectional systems, verb conjugations, noun declination, and Arabic syntactic analysis.[11]

The purpose of learning basic *nahwu* is for students to be able to describe the syntax and the object of study as well as the Arabic syntax study tradition, including construction, categories, functions, relations, patterns, inflectional systems, verb conjugations, noun declination, and Arabic syntactic analysis.[12]

METHOD

The type and research approach used is research and development applied to the education field. According to Borg and Gall, educational development research is a process used to develop and validate educational products. The results of development research are not only the development of an existing product but also to find knowledge or answers to practical problems. Research and development methods are also defined as research methods used to produce certain products and test the effectiveness of these products.[13] Furthermore, research and development is a strategy or research method that is powerful enough to improve practice.[14]

The are several stages offered in the design and development research by Borg and Gall: a) the collection of information, b) planning, designing, and developing a product, c) product tryout, d) product improvement, e) try out, f) improvement, g) operational try out, h) product improvement, i) final revision, and j) product distribution and development. Meanwhile, Sugiyono presented ten stages, including a) the potential and problems, b) data collection, c) the design of the product, d) validation of the design, e) revision of the design, f) product tryout, g) the revision of the product, h)

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[10] Zohan, "Tentang Unity 3D," *Www.zohan.my.id*, 2020, Retrieved February 19, 2021, https://zohan.my.id/2020/05/27/sejarah-unity-3d/.

[11] Program Studi Pendidikan Bahasa Arab, *RPS Mata Kuliah Muqaddimah fiy Ilmi al Nahwi (Pengantar Sintaksis Arab) (Introduction to Arabic Syntax Studies)* (Semarang: Universitas Negeri Semarang, 2021), 1- 2.

[12] Ibid.

[13] Sugiyono, *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif dan R&D)* (Bandung: Alfabeta, 2012), 297.

[14] Nana Syaodih Sukmadinata, *Metode Penelitian Pendidikan* (Bandung: PT Remaja Rosdakarya, 2012), 56.

user trial, i) the revision of the product, j) mass production.[15] In this current study, five stages of research and development design were conducted: a) the potential and problems, b) data collection, c) the design of the product, d) validation of the design and e) revision of the design.

The data in this study were collected through observation, questionnaire, and interview techniques.[16] The questionnaires and interviews were used to ask the students and lectures about the product *Nahwu* Matching. The observation is used to see the process of *nahwu* teaching. The research subjects are Arabic Language Education Study Program students who take basic *Nahwu* courses.

RESULT AND DISCUSSION

The results of the study include two things, namely: (1) the results of the analysis of the needs of lecturers and students on the development of Nahma (*Nahwu* Matching), a basic *nahwu* learning game based on the unity application in the Arabic language education study program and (2) game learning media prototype Nahma (*Nahwu* Matching), a basic *nahwu* learning game based on the unity application in the Arabic language education study program suitable for students, lecturers and curriculum.

Needs Analysis Results of Nahma (*Nahwu* Matching)

The first step researchers took in developing Nahma (*Nahwu* Matching), a basic *nahwu* learning game based on the unity application in the Arabic language education study program, was analyzing the needs of lecturers and students on the media. This needs analysis was carried out in two ways: direct interviews with lecturers of basic syntax/basic *nahwu* courses and distributing needs analysis questionnaires to lecturers and students. Researchers interviewed lecturers of basic Arabic *nahwu* courses to support data on needs analysis. Interviews were conducted with basic *nahwu* lecturers at the Arabic language education study program, Semarang State University to know the lecturers' opinions about basic *nahwu* learning that had been going on, especially before using learning media with educational games.

Basic *nahwu* learning at Semarang State University lasts 2 hours or 2x50 minutes. The *nahwu* course was taught by *Ustadz* Singgih Kuswardono, *Ustadz* Yusuf Muhammad Hasyim, *Ustadz* Muhlisin Nawawi, *Ustadzah* Darul Qutni, and *Ustadz* Ahmad Miftahuddin. In the opinion of lecturers, in general, students are less enthusiastic when learning does not use media so students have difficulty in learning basic *nahwu*. This is because lecturers emphasize more on conventional learning. Lecturers only use the Grammar Translation Method and never use learning media.

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[15] Sugiyono, *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif dan R&D)* (Bandung: Alfabeta, 2012), 409-427.

[16] Mohammad Ainin, *Metodologi Penelitian Bahasa Arab* (Malang: Hilal Pustaka, 2010), 7.

Lecturer also stated that it would be very good if there is the development of learning media that can motivate and assist students in understanding basic *nahwu* material. So the next step is media needs analysis.

The research respondents were 2nd-semester students of the Arabic Language Education Study Program UNNES, UIN Walisongo Semarang, and IAIN Salatiga. Fifty students take the *Nahwu* Basic course each, consisting of 14 male and 36 female respondents. In addition to these five lecturers who teach *Nahwu* courses. Respondents were asked to fill out a questionnaire that had been prepared and interviews were conducted with respondents' representatives. The results of the data analysis are as follows.

The *questionnaire* for *analyzing* the needs of lecturers and students consists of several aspects, namely (1) aspects of media content and material, (2) visual aspects of media, and (3) aspects of media support.

Aspects of Media Content and Material

Aspects of media content and materials include the urgency of developing educational game media, types of games, game design, game duration, in-game menus, learning material themes, number of levels on evaluation, number of questions, and the language used in the game.

Table 1. The results of the needs analysis of question number 1

No	Aspect	Answer Options	Lecturer/ %	Student/ %
1	Development of game application media to improve basic *nahwu*/basic syntax understanding	It is necessary	3/ 60	33/66
		Need	2/ 40	17/ 34
		No need	0	0
		Do not know	0	0

Based on table 1 above, it can be described that of 5 lecturers and 50 students who were respondents, 3 lecturers or 60% of lecturers and 33 students or 66% of students stated that it was very necessary to develop game media applications to improve understanding of basic *nahwu*/basic syntax. Meanwhile, 2 lecturers or 40% of lecturers and 17 students or 34% of other students stated it was necessary. This statement shows that there is a need to develop new game-based media that can facilitate understanding basic *nahwu* material / basic Arabic syntax.

Table 2. The results of the needs analysis of question number 2

No	Aspect	Answer Options	Lecturer/ %	Student/ %
2	Game type	Action	0	5/ 10
		Adventure	0	8/ 16
		Puzzles	3/ 60	36/ 72
		Word game	2/ 40	0

		Football	0	1/ 2

Based on table 2 above, it can be described that of 5 lecturers and 50 students who were respondents, 5 or 10% of students chose the type of action game design and 8 or 16% of students chose adventure games. Meanwhile, 3 or 60% of lecturers and 36 or 72% of students prefer puzzles. Two other lecturers, or 40% of lecturers, chose word games as the most suitable type for learning. However, 1 or 2% of students propose another type, namely a football game (soccer) as the desired type of game. This statement shows that most of the desired types of games are puzzles, and the second is word games, so combining both into educational games is possible.

Table 3. The results of the needs analysis of the question number 3

No	Aspect	Answer Options	Lecturer/ %	Student/ %
3	Game design type	*Install*	3/ 60	5/ 10
		On line	2/ 40	1/2
		Mobile	0	44/ 88
		Do not know	0	0

Based on table 3 above, it can be described that of the five lecturers and 50 students who were respondents, 3 or 60% of the lecturers and 5 or 10% of students chose to install games, namely in the form of applications or software installed on the computer. Meanwhile, 2 or 40% of lecturers and 1 or 2% of students chose online games as the most suitable design. Online games are played via a computer with an internet connection. In addition, 44 or 88% of students choose mobile games so that they can be played via smartphone devices. This statement shows that most choose mobile, which allows educational games to be played via smartphone devices.

Table 4. The results of the needs analysis of question number 4

No	Aspect	Answer Options	Lecturer/ %	Student/ %
4	Game duration	2-5 minutes	0	0
		5-10 minutes	3/60	40/80
		10-15 minutes	2/ 40	2/4
		15-20 minutes	0	8/16

Based on table 4 above, it can be described that of the five lecturers and 50 students who were respondents, 3 or 60% of the lecturers and 40 or 80% of the students chose the most appropriate game duration was 5-10 minutes for one game theme. At the same time, 2 or 40% of lecturers and 2 or 4% of students choose 10-15 minutes. The rest, 8 or 16% of students, chose 15-20 minutes as the ideal time. However, in the design, the game's duration is adjusted to the allocation of learning time so that students can still receive materials and games at the appropriate time.

Table 5. The results of the needs analysis of question number 5

No	Aspect	Answer Options	Lecturer/%	Student/%
5	Game elements that need to be displayed	Competence	3/60	37/74
		Nahwu material	4/40	48/96

| | | Evaluation/gameplay | 4/80 | 50/100 |
| | | Other | | |

In this question, the respondent may choose more than 2 answers choices. Based on table 5 above, it can be described that of the five lecturers and 50 students who became respondents, 3 or 60% of the lecturers and 37 or 74% of students chose the competencies to be achieved needed to be used as the main elements in educational games. 4 or 80% of lecturers and 48 or 96% of students choose *nahwu* material which also needs to be an element of this game. Furthermore, 4 or 80% of lecturers and 50 or 100% of students choose the game element which is the core of this game, namely evaluation/gameplay. Based on this statement, these three elements must be the game's main elements. Therefore, the design of this game will also contain three elements, namely Competence, *Nahwu* Material, and evaluation/game.

Table 6. The results of the analysis of the needs of question number 6

No	Aspect	Answer Options	Lecturer /%	Student/%
6	In-game theme	classification of words and their signs (address)	3/60	34/68
		classification of Isim, fi'il and hurf	3/60	45/90
		I'rab and its division	3/60	37/74
		grammatical marker	4/80	36/72
		Marfuat, mansubat, Mahfudhot	3/60	31/62
		Awamil Nawasikh	3/60	33/66

In this question, respondents can choose more than one answer. Based on table 6 above, it can be described that of the five lecturers and 50 students who were the respondents, 3 or 60% of the lecturers and 34 or 68% of the students chose the classification of words and their signs as the main theme of the game. 3 or 60% of lecturers and 45 or 90% of students choose Classification of *ism, fi'l,* and *harf*. Furthermore, 3 or 60% of lecturers and 37 or 74% of students choose *I'rab* and its distribution as a theme that must be included in the game. 4 or 80% of lecturers and 36 or 72% of students also chose grammatical markers as a suitable theme while there were 3 or 60% of lecturers and 31 or 62% chose *marfu'at, manshubat,* and *mahfudhot* as themes, 3 or 60% lecturers and 33 or 66% of students chose the *layil nawashikh* theme.

Table 7. The results of the analysis of the needs of the question number 7

No	Aspect	Answer Options	Lecturer/%	Student/%
7	Number of levels per theme	1 (one)	0	15/30
		2 (two)	1/20	0
		3 (three)	4/80	34/68

| 4 (four) | 0 | 1/2 |
| > 4 | 0 | 0 |

Table 7 above shows that out of 5 lecturers and 50 respondents, 15 or 30% of students chose only one game level. 1 or 20% of lecturers chose 2 game levels. Meanwhile, 4 or 80% of lecturers and 34 or 68% of students said there should be 3 levels in the game. 1 or 3.33% of students choose 4 levels. Based on this statement, the majority of respondents, both lecturers and students, chose the ideal number of levels, which is 3 levels for each theme.

Table 8. The results of the needs analysis of question number 8

No	Aspect	Answer Options	Lecturer/%	Student/%
8	Number of questions per level	4-6 questions	0	0
		7-9 questions	0	0
		10-12 questions	0	1/2
		>12 questions	1/20	1/2
		Level up to many levels	4/80	48/96

Based on table 8 above, it can be described that from 5 lecturers and 50 students who became respondents, 1 or 2% of students chose the ideal number of questions per level was 10-12 questions. 1 or 20% of lecturers and 1 or 2% of students choose more than 12 questions, and 4 or 80% of lecturers and 48 or 96% of students choose that question is made tiered according to the level increase. Based on this statement, most respondents chose the ideal number of tiered questions.

Table 9. The results of the analysis of the needs of question number 9

No	Aspect	Answer Options	Lecturer/%	Student/%
9	The language used in the game display.	Arab	2/40	7/14
		English	0	0
		Indonesia	0	0
		Indonesian Arabic	3/60	43/86

Table 9 above shows that of the five lecturers and 50 students who became respondents, 2 or 40% of the lecturers and 7 or 14% chose Arabic as the display language in the game. Meanwhile, 3 or 60% of lecturers and 43 or 86% of students chose Arabic-Indonesian as the language in the game display. Therefore, based on this statement, it can be seen that most respondents chose Arabic-Indonesian as the language in the game display.

Visual Aspects of The Media

The visual aspects of the media include color types, image illustrations, image types, pointer shapes, and game resolution.

Table 10. The results of the needs analysis of question number 10

No	Aspect	Answer Options	Lecturer/%	Student/%
10	Types of color	Complementary	1/20	5/10
		Monochromatic	0	4/8
		Polychromatic	0	1/2
		Analogous	4/80	39/78
		Others (black-blue)	0	1/2

Table 10 above shows that of the 5 lecturers and 50 students who were respondents, 1 or 20% of the lecturers and 5 or 10% of students chose complementary colors as game design colors. 4 or 8% of students choose monochromatic colors and 1 or 2% choose polychromatic colors. However, 4 or 80% of lecturers and 39 or 78% of students chose analogous colors as game design colors. Meanwhile, 1 or 2% of students chose alternative colors, a combination of blue and black. Based on this statement, it is known that most respondents choose analogous colors, the closest combinations of colors on the color disc.

Table 11. Results of needs analysis of question number 11

No	Aspect	Answer Options	Lecturer/%	Student/%
12	Illustration for explanation	It is necessary	2/40	30/60
		Need	3/60	20/40
		No need	0	0
		Do not know	0	0

Based on table 11 above, it can be described that of the five lecturers and 50 students who were the respondents, 2 or 40% of the lecturers and 30 or 60% of the students stated that image illustrations for vocabulary were essential in the game display. 3 or 60% of lecturers and 20 or 40% of other students also think illustrations are necessary. So in this game, the illustrations will be adjusted to the *nahwu* material displayed.

Table 12. The results of the needs analysis of question number 12

No	Aspect	Answer Options	Lecturer/%	Student/%
12	Image type	Caricature/cartoon	3/60	49/98
		Man	0	0
		Object	2/40	1/2
		Do not know	0	0

Based on table 12 above, it can be described that of the 5 lecturers and 50 students who were respondents, 3 or 60% of the lecturers and 49 or 98% of students chose the most appropriate type of caricature image. 2 or 40% of lecturers and 1 or 2% of other students choose object images. From this statement, it can be seen that the majority of respondents chose caricature images to represent the material.

Table 13. The results of the needs analysis of question number 13

No	Aspect	Answer Options	Lecturer/%	Student/%
13	Pointer shape	*Hand clicker*	2/40	48/96

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Animation clicker	3/60	2/4
Face clicker	0	0
Do not know	0	0

Table 13 above shows that of the five lecturers and 50 students who were respondents, 2 or 40% of the lecturers and 48 or 96% of students chose the hand clicker as the best form of pointer. However, 3 or 60% of lecturers and another 2 or 4% of students chose animation clicker as the most suitable form of pointer. Based on this statement, it can be concluded that most respondents prefer the form of a pointer hand clicker.

Table 14. The results of the needs analysis of question number 14

No	Aspect	Answer Options	Lecturer/%	Student/%
14	Game resolution	Tall	2/40	50/100
		Currently	3/60	0
		Low	0	0
		Do not know	0	0

Table 14 above shows that of the five lecturers and 50 students who were respondents, 2 or 40% of the lecturers and 50 or 100% of the students chose the high-resolution type. Meanwhile, 3 or 60% of other lecturers choose the medium resolution. Based on this statement, respondents want high resolution for games in the hope that when applied with projectors and LCDs, the image will not break because of the high resolution.

The audio aspect of media

The audio aspect of educational game media consists of audio illustrations and the type of audio contained in the navigation.

Table 15. The results of the needs analysis of question number 15

No	Aspect	Answer Options	Lecturer/%	Student/%
15	Audio illustration	It is necessary	1/20	47/94
		Need	4/80	3/6
		No need	0	0
		Do not know	0	0

Table 15 above shows that of the five lecturers and 50 students who were respondents, 1 or 20% of the lecturers and 47 or 94% of students chose audio illustrations as necessary in a game. At the same time, 4 or 80% of lecturers and 3 or 6% of other students choose necessary. This shows that respondents want audio illustrations, so the game design will make audio illustrations one of the elements of educational games.

Table 16. The results of the needs analysis of question number 16

No	Aspect	Answer Options	Lecturer/%	Student/%
16	Audio type	Narrative	2/40	0
		Sound effects	3/60	28/56
		Back sound	0	22/44
		Do not know	0	0

Table 16 above shows that of the five lecturers and 50 students who were respondents, 2 or 40% of the lecturers chose narration as the most appropriate type of audio. Meanwhile, 3 or 60% of lecturers and 28 or 56% of students chose sound effects. Another 22, or 44%, of students, chose backsound as the most suitable audio. Based on this statement, the most suitable audio is a sound effect.

Nahma Prototype: Unity-Based *Nahwu* Matching

Based on the questionnaire analysis of the needs of lecturers and students, the Unity-based *Nahwu* Matching game was made according to the references and considerations of the analysis of the needs of the students and lecturers. Although in the making of the Unity-based Nahma game, there are many adjustments with several considerations, the results of the needs questionnaire analysis are still used as a reference in making the Unity-based game and adapted to the needs of students and lecturers.

Unity-based educational game media designs were created using the Action Script 2.0 application, Corel Draw CS2 and Adobe Photoshop CS2 to design illustration images, navigation, layouts and game coding. Design creation goes through two stages before being validated by software engineers and materials experts. The first design was made as an initial product which was then consulted with software engineers and materials experts. After receiving some input, the initial product design was revised.

Meanwhile, the theme in this educational game is adjusted to the basic *Nahwu* material curriculum.

First design of unity-based Nahwu Matching prototype

The initial menu display for educational games consists of (1) game titles, (2) material menu displays, (3) material displays, and (4) game menus.

Figure 1. Game initial view

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In the initial view, the user simply points the cursor towards the start button to enter this game.

Figure 2. Display material menu

The following is a menu display of the material to be studied in this game in accordance with the material to be studied in the basic *Nahwu* course/basic syntax.

Figure 3. Display materials and games

The material is explained in a simple way to be easily understood by game users, and games are made in stages according to the needs analysis results.

CONCLUSION

Based on the results, it can be concluded that both lecturers and students need interesting learning applications for *Nahwu* that can support the learning process effectively. Content and material aspects, visual media aspects, and media support that are deemed necessary by lecturers and students include basic syntax material, types of puzzle games, forms of applications installed, game duration of 5-10 minutes, information about competencies achieved, the material, evaluation, game themes of *Nahwu* material, the number of multilevel questions leading to a higher level, and Arabic-Indonesian as the language used in the game. From a visual perspective, the results show that lecturers and students need learning applications for *Nahwu* with analogous colors, illustrations for explanations, types of caricature/cartoon images, pointer animation clickers, medium resolution, and audio illustrations in the form of sound effects. The present research results in product arrangement. It is suggested that further actions are conducted, among others, expert validation and product trial both on small and large scales by future researchers so that this study can contribute

positively to the learning process of *Nahwu*. Moreover, the material covered in this game should be more comprehensive by including the details of the Arabic syntax system.

REFERENCES

Ainin, Mohammad. *Metodologi Penelitian Bahasa Arab*. Malang: Hilal Pustaka, 2010.

Bagi, Berbicara, Siswa Kelas, and X I I Di. "Pembelajaran Jarak Jauh Berbasis Web Dalam Meningkatkan Keterampilan Berbicara Bagi Siswa Kelas Xii Di Australia," n.d., 1–23.

Dewi, Wahyu Aji Fatma. "Dampak COVID-19 terhadap Implementasi Pembelajaran Daring di Sekolah Dasar." *EDUKATIF : JURNAL ILMU PENDIDIKAN* 2, no. 1 (2020): 55–61. doi:10.31004/edukatif.v2i1.89.

Haas, John K. "A History of the Unity Game Engine - An Interactive Qualifying Project." Worcester: Worcester Polytechnic Institute, 2014. https://web.wpi.edu/Pubs/E-project/Available/E-project-030614-143124/unrestricted/Haas_IQP_Final.pdf.

Jasson. *Role Playing Game (RPG) Maker*. Yogyakarta: ANDI, 2009.

Kemenag. "Perkuliahan Semester Genap PTKI Dilakukan Secara Daring." *Kemenag.go.id*, 2020. https://kemenag.go.id/read/perkuliahan-semester-genap-ptki-dilakukan-secara-daring-oq1mo.

Kemendikbud. "16 Maret 2020: Kemendikbud Dorong Pembelajaran Daring Bagi Kampus Di Wilayah Terdampak Covid-19." *Kemdikbud.go.id*, 2020. https://bersamahadapikorona.kemdikbud.go.id/16-maret-2020-kemendikbud-dorong-pembelajaran-daring-bagi-kampus-di-wilayah-terdampak-covid-19/.

Kirriemuir, John, and Angela McFarlene. *Literature Review on Games and Learning*. Futurelab Series, Report 8. Bristol: NESTA Futurelab, 2004. https://www.nfer.ac.uk/literature-review-in-games-and-learning/.

Program Studi Pendidikan Bahasa Arab. "Kurikulum PBA UNNES 2020 (Kampus Merdeka)." Semarang: Universitas Negeri Semarang, 2020. http://pba.unnes.ac.id/kurikulum-pendidikan-bahasa-arab-universitas-negeri-semarang/.

———. *RPS Mata Kuliah Muqaddimah fiy Ilmi al Nahwi (Pengantar Sintaksis Arab) (Introduction to Arabic Syntax Studies)*. Semarang: Universitas Negeri Semarang, 2021.

Redaksi. "Hadapi Covid-19, Pencegahan Paling Utama." *Suaramerdeka.com*, 2020. https://www.suaramerdeka.com/opini/pr-04128755/hadapi-covid19-pencegahan-paling-utama?page=all.

Sugiyono. *Metode Penelitian Pendidikan (Pendekatan Kuantitatif, Kualitatif dan R&D)*. Bandung: Alfabeta, 2012.

Sukmadinata, Nana Syaodih. *Metode Penelitian Pendidikan*. Bandung: PT Remaja Rosdakarya, 2012.

Virvou, Maria, George Katsionis, and Konstantinos Manos. "Combining Software Games with

Education: Evaluation of Its Educational Effectiveness." *Journal of Educational Technology & Society* 8, no. 2 (2005): 54–65. http://www.jstor.org/stable/jeductechsoci.8.2.54.

Zohan. "Tentang Unity 3D." *Www.zohan.my.id*, 2020. https://zohan.my.id/2020/05/27/sejarah-unity-3d/.