

**Developing Interactive Multimedia CD-based Teaching
Materials for Teaching Arabic Skill at Arabic Education
Department of Islamic State University
Sunan Ampel Surabaya**

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Abstract

The development of interactive multimedia CD-based teaching materials is urgent because the learning process in the Arabic Education Department is not 100% done as expected. This can be seen from some indicators that have not been achieved in the teaching and learning process. First, the lecturers teaching the same courses of Arabic language skills do not have the same standards of the competencies that students need to achieve, the learning objectives of each meeting and the assessment. Second, the use of interactive multimedia CDs has not been widely used by all lecturers of Arabic language skills. Third, there was no standard of teaching material used by some lecturers who teach the courses of Arabic language skills despite the findings from previous studies that show 25% of students have general high schools background which cause disparate abilities among students in the department. This study is a research and development adopting Sugiono's development stages combined with ADDIE design model and the ASSURE design model which is then termed as ADDIERE design. This study uses mixed qualitative and quantitative methods. The results of this study are the following. First, there is a set of teaching materials comprising a validated and empirically-proven effective an interactive multimedia CD and book. The book consists of 12 chapters with each covers four language skills. The CD combines autoplay, wondershare quiz creator, record, Arabic pad tool and text media, audio and images.

Keywords: teaching materials, multimedia interactive CD, Arabic

A. Introduction

Based on the results of the current research, the Arabic Language major at the Tarbiyah and Teaching Faculty of UIN Sunan Ampel Surabaya is still not 100% implemented as expected. This can be seen from a number of indicators that have not been able to be achieved in the lecturing process. First, lecturers, even when they teach the same Arabic Language course, do not have the same standard in determining the final ability of courses, learning achievement at each meeting and learning evaluation. Secondly, the interactive multimedia has not been widely used by all Arabic Education Department (PBA) lecturers during the lecturing process, especially in teaching Arabic language skills. Third, some lecturers who teach Arabic language skills do not have the same standard in determining the teaching materials for the students who have a different background of education.

The research survey shows that the educational background of the students in Arabic Education Department is diverse. The 25% of the number of students graduated from a general high school or MA background. 37% of students have a background Islamic-based high school or vocational high school education. Meanwhile, the students who graduated from an Islamic boarding school are about 38% of the total. The research result also indicates the students' Arabic learning experience. It shows that there was only 4% of respondents who had never studied Arabic, 70% of respondents had studied Arabic but not in depth, and 26% of respondents had studied Arabic in depth.

Based on the fact that occurred above, the development of interactive multimedia CD-based teaching materials in Arabic language courses that combining several programs, such as auto-play, wonder-share quiz creators, records, Arabic-pad tools and also text, audio, and image media is required. This media can be used by students to measure their learning behavior without the intervention from their lecturers or friends. Besides that, the modern era is identified with digital society in which every human activity will be driven through a series of digital technologies because technology promises change, progress, ease, increased productivity, accuracy, and speed, as well as popularity (Martono, 2010).

Some researchers have studies the topics related to the teaching and learning of Arabic, they are: the developing of textbook of Arabic teaching material (Zukhaira, et al., 2013; Syairi, 2013), the developing of communicative-based Arabic teaching material (Nurlaila, 2011), the development of model of android application-assisted Arabic letter teaching material (Hartanto, et al., 2016), and Arabic teaching and learning material (Wekke, 2017).

B. The Basic Concepts of Interactive CD-Based Multimedia

1. Interactive Multimedia

Multimedia comes from the words multi and media. Multi comes from Latin, it is a noun, which means various. Meanwhile, the word media comes from Latin, the medium that means an intermediary or something used to deliver, send or carry something. According to Hackbarth (1994), multimedia is:

"Multimedia is suggested meaning meaningful multiple formats for presentation of information, including texts, still or animated graphics, movie segments, videos, and audio information. Computer-based interactive multimedia includes hypermedia and hypertext.

Hypermedia is a computer-based system that allows interactive linking of multimedia information formats including text, still or animated graphics, movie segments, video, and audio. Hypertext is a non-linear organized and accessed screens of text and static diagrams, pictures, and tables.”

Multimedia is defined as a combination of several media which is used to convey information in the form of text, graphics or graphic, movie, video, and audio animation. Multimedia includes hypermedia and hypertext. Hypermedia is a presentation media that includes text, silent graphics or animation, movie, video, and audio. Hypertext is the form of text, static diagrams, images and tables that are displayed and arranged non-linearly. Multimedia is interpreted by (Vaughan, 2005):

“Multimedia is a digital integration of text (written), graphics (the interface of the program), animation, audio (dialogues, stories, sound effects), pictures and visual stimuli, and motion videos. Through the integration of all these media, the learning experience becomes interactive one mirroring everyday experiences.”

Gayeski defines multimedia as a collection of computer-based media and communication systems that have a role to build, store, deliver and receive information in the form of text, graphics, audio, video, and so on (Gayeski, 1993). According to Munir and Halimah Badioze Zaman, multimedia is an integration of text, images, videos, and animation in one platform of digital media that has interactive capabilities gives feedback and gets information in a non-linear way (Munir & Zaman, 1999).

Simply, multimedia can be interpreted as the use of more than one media. It can be a combination of text, graphics, animation, sound, and video. For example, a combination of slides and audio tape. Thus, the meaning of multimedia that is generally known today is a variety of combinations of graphics, text, sound, video, and animation. The function of those combinations is to display more comprehensive information, messages, or content in a lesson (Arsyad, 1997).

Artists, for instance, theater players may translate multimedia as a combination of media that can be used to support theater performances such as musical instruments, lighting, or installation art on the stage (Schiwer & Misanchuk, 1984). Meanwhile, in education circles, multimedia refers to an instructional program which includes various integral sources used in learning instruction. Another multimedia observer, Jojo Rahardjo, revealed that multimedia is an integration of information technology (eg: computers) with communication technology (eg coaxial or satellite cable networks) (Dean, 1996).

According to Elsom-Cook, interactive multimedia is a combination of various communication channels, which uses cross-channel languages, and becomes coordinated communicative experiences that do not cause an integrated interpretation (Elsom-Cook, 2001). Interactive multimedia can be defined as an integration of elements of several media (audio, video, graphics, text, animation, etc.) into a synergistic and symbiotic one-unit that produces more benefits for users because each of the media element itself can provide individual benefits (Munir, 2012). Meanwhile, Phillips interpreted interactive multimedia as a phase that describes new waves of computer software, especially those relating to information sections (Phillips, 2001).

2. Interactive CD

An interactive CD is the latest technology that is used as a media with a multimedia format and allows it to be packaged on a CD (Compact Disk) and contains interactive applications. Interactive means that there is two-way communication and the user can give a response directly. The tool which is used to open the Interactive CD is CD ROM (Read Only Memory). This CD ROM can be installed on CD Player devices, computers, and laptops. This interactive CD allows designers to integrate programs, sounds, videos, and text in one application. It can also be said that the Interactive CD is a CD that contains applications that have several menus in it where the menus can be clicked to display certain information. Because of its interactive nature, interactive CDs are very suitable to be used as learning media in the field of education (Munir, 2012).

C. Research Methodology

The research methodology used in this study refers to Sugiono's development stages combined with ADDIE design model and the ASSURE design model which is then termed as ADDIERE design. This study uses mixed qualitative and quantitative methods.

According to Sugiono in R & D research, there are 10 steps that must be done, including; 1) determining the potency and problems, 2) conducting data or information collection, 3) designing product, 4) making validation design, 5) revising the designs, 6) testing the product for the first phase, 7) revising the product in the first phase, 8) testing the product for the second trial, 9) revising the product in the second trial, 10) publishing the product (Munir, 2012).

The followings are the detail explanations:

1. At the stage of determining the potency and problems or needs analysis, researchers conducted a preliminary study to find the potency and problems that exist among the students, involving the analysis students' general characteristics, students' initial ability, and students' learning styles. In this stage, the activities carried out by researchers included the interviews with the head of the study program related to the profile and curriculum of Arabic Education Program at the Tarbiyah and Teaching Faculty of UIN Sunan Ampel Surabaya, the observations, and the distribution of questionnaires to first semester PBA students to determine the personal identity of PBA students.
2. After the potency and problems are found, then the next step is to collect data that can be used as materials for planning certain products that are expected to solve the problems.
3. Based on the problems and data collections, the third stage of the research is designing and developing products. The development of multimedia interactive CD-based teaching materials on Arabic learning included: 1) Stating objectives / designing RPS. 2) Selecting media and materials (interactive CDs and Arabic language material). That was done through FGD I about RPS, FGD II about developing teaching materials, and FGD III about multimedia.
4. After the product is arranged, the next activity is product validation or evaluation by the experts. Expertise test or the first validation related to the design of the product. In this case, it was tested by Dr. Sihabuddin, M.Pd. Meanwhile, the expertise test or second validation on teaching material was

validated by Dr. Baihaqi, MA and Dr. M. Afifuddin Dimiyathi, MA. The third validation test is related to a practitioner or user which in this case was tested by Ida Miftahul Jannah, M.Pd.I

5. The revision phase, after the validation team assessed the developed products and found deficiencies of the product, the steps that must be done are revising the product.
6. Conducting the first phase or limited trial of the product. In this case, the researchers tested the product to the semester one student, D class as the experimental class and B class as the control class. To find out the effectiveness of the product, at this stage, quantitative data from the pre-test and post-test were collected and the results were evaluated according to the objectives, and the results were compared with the control group.
7. Revising the products that have been tested on a limited scale by considering the results and the inputs generated from the trials, then the initial product is developed into a better product.
8. Conducting the second stage of product trials or conducting trials to the products that have been revised previously on a broader scale. The researcher tested the semester one C and D classes as the experimental classes and A and B classes as the control classes. It was aimed to find out the effectiveness of the product, and at this stage, quantitative data from the pre-test and post-test were collected and the results were evaluated according to the objectives, and the results were compared with the control group.
9. Revising the final product. This revision was based on the results of previous product trials.
10. Publishing or disseminating the products. It was a product distribution after passing the quality control. In this case, the researcher disseminated products in 8 classes in Arabic Language Education Study Program, Sunan Ampel Islamic State University Surabaya.

D. Findings and Discussion

In this study, the development of instructional materials based on interactive multimedia CDs on Arabic learning at UIN Sunan Ampel Surabaya was using the stages of research proposed by Sugiono. The steps have been described above by combining the ADDIE design model and the ASSURE design model which the researcher called as ADDIERE design. In detail these steps are as follows:

1. Potency and Problems (Needs analysis)

The analysis conducted in this study included the analysis of general characteristics of students, the initial ability of students, and students' learning styles. After making field observations and disseminating questionnaires as data collection instrument, some data was obtained regarding these four things. The results of the field analysis of the respondents are presented in table form as follows:

Table 1: Results of the field analysis of the respondents

No.	Criteria	SMA/MA (Public school)	SMA/SMK/MA (Islamic-based school)	Boarding School	Ever	Never	Grammar	Arabic Vocabulary	Writing in Arabic	Speaking using Arabic	Yes	No	Not Sure (Neutral)
1.	Educational background before studying at UIN Sunan Ampel	41 %	27 %	32 %									
2.	Learning Arabic before				96 %	4 %							
3.	Learning Arabic is difficult										20 %	61 %	19 %
4.	The hardest Arabic skill						81 %	11 %	1 %	7 %			
5.	Arabic is important to be mastered										94 %	6 %	
6.	Arabic has correlation with the current study										96 %	4 %	
7.	Arabic can be used to deepen the current knowledge										94 %	6 %	
8.	The Arabic mastery influences the confidence										89 %	3 %	8 %
9.	It is interesting to learn Arabic using multimedia										68 %	14 %	18 %

Besides getting the data through questionnaires, the data was obtained through interviews with Arabic subjects lecturers who were also the practitioners of Arabic teaching materials. The interview results are as follows (Jannah, 2017):

- a) The students' ability is heterogeneous. Some have been able to communicate in Arabic because there are alumni of Islamic boarding schools. Some are able to communicate a little (alumni of non-Islamic boarding schools) and there are

- those who have not been able to communicate (alumni of SMK). But all of them were quite enthusiastic about learning Arabic.
- b) Lecturers use various models and strategies in teaching. Sometimes the lecturers ask the students to work individually and sometimes in groups.
 - c) Some students still find it difficult to learn Arabic because of their educational background, for example vocational high school (SMK) graduates.
 - d) Lecturers have to keep motivating the students to study hard and create a pleasant atmosphere in learning.
 - e) The presence of students who have not been able to communicate in Arabic makes the communication process less racial.
 - f) Multimedia as one of alternative teaching materials.in learning process
 - g) Multimedia is beneficial to make the students learn independently.

2. Design of Development of Teaching Materials

The design of the development of this teaching material includes materials, multimedia and trial stages:

a. Materials

There are several things that have to be considered before giving Arabic language materials to the students. First, the material is provided in accordance with the ability of students and second, it must be correlated from one meeting to another. Thus, after completing the learning process students have the skills as the targeted goals. The material in this research product was taken from several main references, such as from the book *Al-Arabiyyah Baina Yadaik* written by Abdur Rahman Bin Ibrahim Al-Fauzan, Mukhtar Al-Thohir Hasan, Muhammad Abdul Kholiq, and Muhammad Fadhil.

1). Learning Themes

The themes in this interactive CD-based textbook are;

الدَّرْسُ الثَّانِي : الأسرة	الدَّرْسُ الْأَوَّلُ : التَّحِيَّةُ وَالتَّعَارُفُ
الدَّرْسُ الرَّابِعُ : الحياة اليومية	الدَّرْسُ الثَّلَاثُ : السكن
الدَّرْسُ السَّادِسُ : الدراسة	الدَّرْسُ الْخَامِسُ : الشراب والطعام
الدَّرْسُ الثَّامِنُ : مرحلة الشباب	الدَّرْسُ السَّابِعُ : اللغة العربية
الدَّرْسُ الْعَاشِرُ : التعليم بين الماضي والحاضر	الدَّرْسُ الثَّاسِعُ : نظافة البيئة
الدرس الثاني عشر: الحياة في المدن الكبيرة	الدَّرْسُ الْحَادِي عَشَرَ : أنواع التراويح

2). Language Proficiency

Based on the themes that have been compiled from the beginning to the last, to optimize the ability of students in Arabic, an indicator is made that refers to the four skills, namely listening, speaking, reading and writing.

3). Exercise

After determining the theme and indicator, the Arabic learning media should be completed with some exercises in order to get the success as what it is expected. Therefore, in this interactive CD-based teaching materials, there are some exercises which are provided in each skill on each theme.

b. Multimedia

1). Picture

Pictures have better meaning than writing. Images are used to support written text so that it is easier and faster to understand. In interactive CD-based teaching materials there are several main images in the part of speaking skills and some writing exercises.

التدريب الرابع : هات خمس جمل فعلية في موضوع التمر، وخمسا أخرى في موضوع الجامعة
 التدريب الخامس : كون جملة فعلية من الصور الآتية وفقا للقاعدة ثم تحدث عنها



Figure 1: Example of pictures

2). Audio

Audio is a sound element that can be included in learning media. Audio can be in the form of songs, instrument music, conversations, audio recordings, and other sounds. Audio is used to support images in complementing learning media so that they are easier to understand even without looking at the media directly. In this interactive CD-based teaching material, the audio is provided primarily for listening and speaking skills sections.

3). Text

Text is the main material and media in learning material. Text is used to convey the contents, messages contained in learning materials through Arabic writing. Text media has functions to train learners' abilities in the field of reading and writing. Media text can be supported with images, audio and video or vice versa. In this interactive CD-based teaching material, there are several texts taken from several main references, such as Al-Arabiyyah Baina Yadaik's book, written by Abdur Rahman Bin Ibrahim Al-Fauzan, Mukhtar Al-Thohir Hasan, Muhammad Abdul Kholiq, and Muhammad Fadhil.



4). Recordings

Recordings are used to record conversations that have been done by students.

The steps are as follows: Click the record button /  then the display will appear as below:



Figure 2: The Audacity

Then click the button  and wait 5 seconds to start recording the answer and click the button  again to stop recording. After finishing the recordings, then the next is to save the recording by clicking the *file* button in the upper left and then selecting and clicking *export audio*. See the following picture:

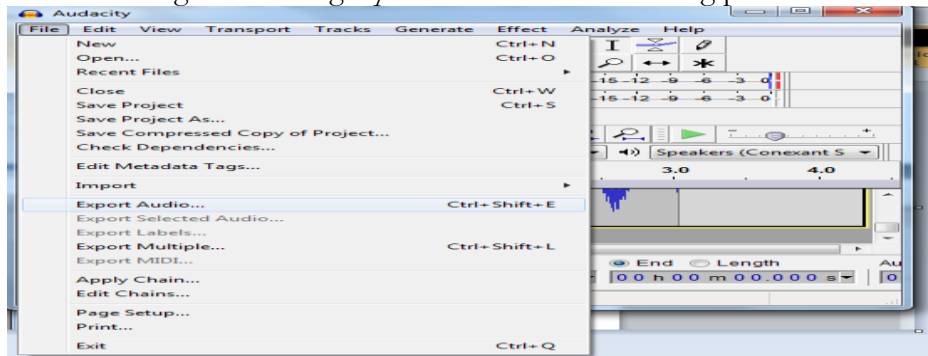



Figure 3: The Audacity

5). Arabic-Pad Tool

Arabic-Pad tool is used to answer questions which require answers in the form of essay writing. The steps are as follows:

Click the ArabicPad /  button, then the display will appear as below:

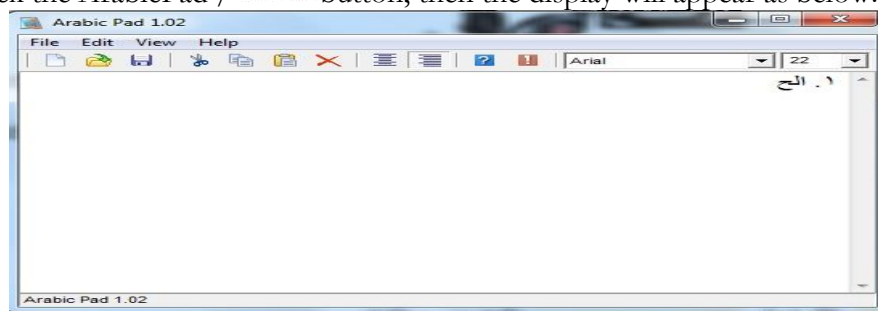


Figure 4: The Arabic-Pad

Then, write your answer on the Arabic-Pad sheet, after it's finished then save your answer. The trick is press Control + S on the keyboard, or click the *file* menu located on the left-hand side, then select and click *save*, or by clicking on the *diskette* image that is under the *view* menu. Then, specify where to save the results of your answers by selecting and clicking on the desired folder.

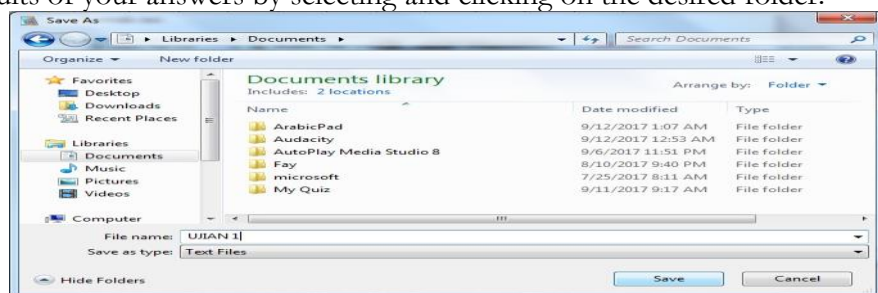


Figure 5: Save As

Then, give name the file of the recorded answers by typing in the column next to the word *file name*. Then, set the file format to *text file* or *all files* by clicking on the column next to the word *save as type* and then select *text file* or *all files*. After that, click *save* to complete the process of storing the recording of the answer.

6). Interactivity (Wondershare Quiz Creator)

Wondershare Quiz Creator (WQC) is a software that is designed to make the students able to do the test interactively. The test can be done both online and offline. WQC has the advantage of being able to make automatic corrections and provide information about the students' scores. The following is the Quiz Creator that researchers have developed:



Figure 6: Wondershare Quiz Creator

7). Autoplay

Autoplay is a software or program that allows someone to create autorun. Autorun is the ability to run multiple operating systems for certain actions when we insert removable media such as CDs, DVDs, or flash memory into a VCD player or computer. To clarify how Autoplay software is, we include a few screenshots of the Autoplay software as follows:



Figure 7: The display of Autoplay cover



Figure 8: The display of Autoplay menu

3. Try-out Stages

To validate the product, three-times try-outs or testing were carried out, involving expert testing, limited testing or the try-out conducted on small groups as product users, and field testing or the test of the products which have been tested and revised before. The result of field testing is the final product.

a. Expert test

The details of the expert test results are as follows:

1). Expert test or validation from the designer of the products

The following table shows the result of expert assessment on the design of Interactive Arabic Language teaching materials:

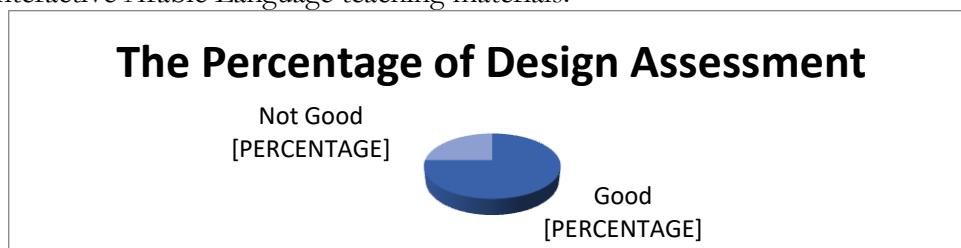


Figure 9: The percentage of design assessment

After being converted to the feasibility table, it is found that the Interactive Arabic Language teaching materials reached 75% achievement level means that the product has good design. Comments and suggestions of design experts in Arabic teaching materials were taken into consideration to improve the product of Arabic teaching materials.

The result of the assessment done by design experts in Arabic teaching materials in the form of suggestions and comments are as follows:

- 1) It is needed to convert to WMP or Gom Player, Flash Player.
- 2) The buttons on the main menu which is linked to internet should be able to open automatically.
- 3) The numbering of *ad-darsu* is better sorted from top right and so on.
- 4) The speed of response button is less fast.

2). Experts test or validation of teaching material qualification

The percentage of achievement obtained from the overall material expert test is as follows:

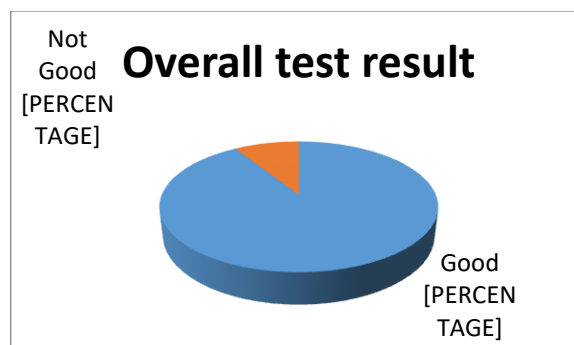


Figure 10: The percentage of test of teaching material qualification

After being converted to the feasibility table, the percentage of achievement level is 91% means that the Interactive Arabic Language teaching material has a very decent qualification. Based the calculation of the teaching materials experts as shown above, the conclusion is that the Arabic language teaching material in the form of interactive multimedia is very suitable to use in Arabic learning.

3). Expert test or the validation from practitioners or users.

The assessment of practitioners / users of Arabic teaching materials is as follows:

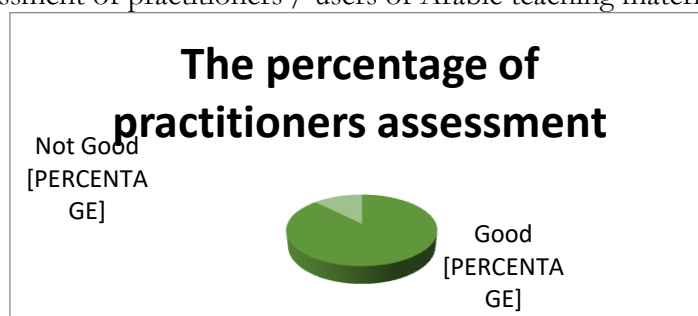


Figure 11: The percentage of practitioners assessment

After being converted to the feasibility table, the percentage of achievement level is 87% means that the practitioners measured that the Arabic language teaching material in the form of interactive multimedia has a decent qualification.

b. Limited Field Try-out

To test the developed product (Arabic multimedia interactive CD-based teaching materials), the researcher implemented this product to the Arabic Education Study Program students in UIN Sunan Ampel Surabaya. In this stage (limited field try-out), the researcher implemented this product to a limited number of students in the first semester (D class) in the course of Istima 'Wa Kalam lil Muftadi`In'. Calculation of paired t-test: pre-test, post-test is using Minitab 16 which results are presented in table form as follows:

Table 2: Paired T for Pre-Test - Post-Test

	N	Mean	Standard Deviation	Standard Error Mean
Pre-Test	21	76.67	6.58	1.44
Post-Test	21	82.86	7.17	1.56
Difference	21	-6.19	4.98	1.09

95% CI for mean difference: (-8.46, -3.93)

T-Test of mean difference = 0.05 (vs not = 0.05): T-Value = -5.75

P-Value = 0.000

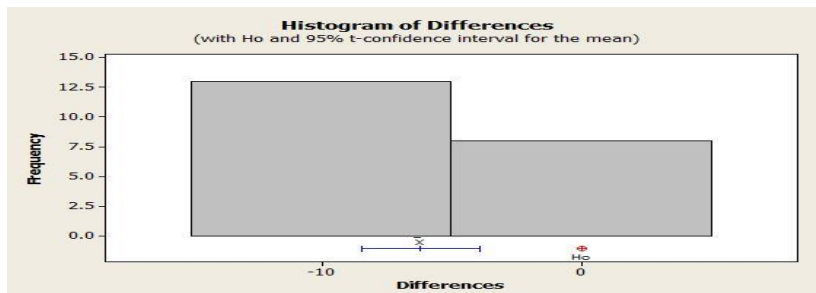


Figure 12: Histogram of differences

Based on the results of calculations performed using the Minitab 16 application it can be seen that the value of the t-count from the pre-test and post-test tables is 5.75.

Step 1. Determining the testing rules

- a) If the value of t count > t table is significant, it means that H0 is rejected and Ha is accepted.
- b) If the value of t count < t table then significant, meaning that H0 is accepted and Ha is rejected.

Table = t table: db

Db = n-1

Db = 21-1

Db = 20

ttable = t0.05: 20 = 1.725

So t count (5.75) > t table (1,725), so Ha is accepted and H0 is rejected.

Step 2. Conclusion

Ho: There is no significant difference in the learning outcomes of Arabic students before and after using multimedia interactive CD-based teaching materials in Arabic.

Ha: There is a significant difference in the learning outcomes of Arabic students before and after using Arabic teaching materials.

c. The final test of the products

After testing the developed product (Arabic multimedia interactive CD-based teaching materials) in limited field, the researcher did the final test to the larger field. In this case, the researcher implemented this product to the first semester students of Arabic Education Study Program in UIN Sunan Ampel Surabaya in C and D classes in the course of Istima 'Wa Kalam lil Muftadi In'. The result of paired t-test calculation: pre-test, post-test is using Minitab 16, the results are presented in table form as follows:

Table 3: Paired T for Pre-Test - Post-Test

	N	Mean	Standard Deviation	Standard Error Mean
Pre-Test	41	84.780	3.298	0.515
Post-Test	41	87.098	2.862	0.447
Difference	41	-2.317	1.619	0.253

95% CI for mean difference: (-2,828; -1,806)

T-Test of mean difference = 0.05 (vs not = 0.05): T-Value = -9.36
P-Value = 0.000

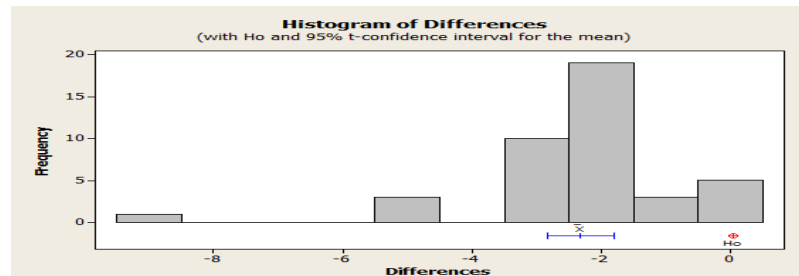


Figure 13: Histogram of differences

Based on the results of calculations performed using the Minitab 16 application it can be seen that the magnitude of the t-count value from the pre-test and post-test tables is 9.36.

Step 1. Determining the testing rules

- If the value of t count > t table is significant, it means that H₀ is rejected and H_a is accepted.
- If the value of t count < t table then significant, meaning that H₀ is accepted and H_a is rejected.

Table = t table: db

Db = n-1

Db = 41-1

Db = 40

t table = t_{0,05: 41} = 1,684

So t-count (9.36) > t table (1.684), so that H_a is accepted and H₀ is rejected.

Step 2. Conclusion

From the above explanation it can be concluded that:

H_a: There is a significant difference in learning outcomes of Arabic students before and after using instructional materials based on multimedia Interactive CD.

H₀: There is no significant difference in learning outcomes of Arabic language students before and after using Arabic teaching materials.

4. Revision

The followings are the last revisions of the products in order to get the desired results or benefits from the Arabic multimedia interactive CD-based teaching materials

a. The revision of interactive CD

- It is needed to convert to WMP or Gom Player, Flash Player.
- The buttons on the main menu which is linked to internet should be able to open automatically.
- The numbering of *ad-darsu* is better sorted from top right and so on.
- The speed of response button is less fast.
- The *Istima'* program should be able to be off to continue to the next part without returning to the beginning of the text.

- 6) There is a writing mistake on Istima' I 'Tadribat I number 3.

b. Revision of Teaching Materials

Based on the results of the evaluation of the validator and the practitioner / product user, there are some suggestions given as follows;

- 1) Giving *syakal* to all learning texts.
- 2) Equate the length and length of the learning text so that it can adjust the teaching and learning time.
- 3) There needs to be a sub-presentation of *mufrodad* for each *dars* with *mufrodad* mastery targets measurement in each *dars*.

After the researcher evaluates and revises the final product development, the writer does the final project of this research, which is disseminating the product or what is called dissemination. Researchers disseminated this product to five 8 classes at the Tarbiyah and Teaching Faculty Arabic Language Education Study Program in Sunan Ampel Surabaya State Islamic University.

E. Conclusion

The product developed in this study is an interactive CD that combines several programs namely *autoplay*, *wondershare quiz creator*, *record*, *Arabic tool pad* and also text, audio and image media. This interactive CD is completed with textbooks consisting of 12 units and each unit consists of four skills .

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