



## The Development of The English Language Learning Videos Through Role Playing Based on Personalization Through A Data Driven Approach for Deaf Students

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**Abstract:** This study aims to produce English language learning videos through role-playing based on personalization through a data-driven approach for deaf students. This research method used research and development with the ADDIE model, namely analysis, design, development, implementation, and evaluation. The subjects in this study were 2 material experts, 2 learning video media experts, 2 practitioners, and 20 student responses. The results showed that the English language learning video through role-playing based on personalization through a data-driven approach had been tested for validity and reliability, so it is feasible to use in the learning process. The implementation results of this innovation on 3 deaf students obtained scores above 80. This research implies that deaf students find it easier to understand English language material, especially prepositions, comparisons, and subject-verb agreement.

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## Introduction

One effort to improve the intelligence of the nation is through education. All Indonesian citizens have the right to education, not excluding children with special needs. It has been stipulated in Article 31, paragraph 1 of the 1945 Constitution, which states that every citizen has the same right to gain intelligence through education and teaching. Education is also a necessity for individuals who want to advance, both for normal children and children with physical and mental abnormalities. In educational institutions, there are normal students and students with special needs. However, these special needs students are still often overlooked or perhaps considered unnecessary to receive care, which resulted in them being considered unworthy of receiving proper education. This results in these children not being able to optimize the potential they have. Children with special needs (ABK) include groups of blind, deaf, speech impaired, moderate and mild mental retardation, mild and moderate physical disabilities, emotional disorders, HIV, AIDS, drug users, autism, Asperger's syndrome, multiple disabilities, learning difficulties, slow learners, gifted and talented and indigo (Larawana Intan, 2016).

Students with disabilities are those who experience disturbances/obstacles in carrying out certain activities, so they need special aids, environmental modifications, or appropriate alternative techniques so they can follow learning optimally (Ristekdikti, 2017). The readiness of Indonesian universities to accept and manage education for students with special needs has been stipulated in the Minister of Research, Technology, and Higher Education Regulation Number 46 of 2017 concerning Special Education and Special Services in Higher Education. Lecturers are required not only to recognize students with special needs, their characteristics, and special needs but also to develop innovation and creativity in learning so that all students, including students with special needs, can follow and succeed in meeting the



learning targets set by lecturers. By obtaining quality education, it is hoped that students with special needs can also participate fully and productively in community life. In line with this, at Pamulang University, the number of students with special needs each year continues to increase, starting from blind people and deaf to speech impaired. It shows that they have a high spirit to obtain education. The existing differences are no longer an obstacle to learning but a challenge.

Inclusive education is an effective way to reduce discriminatory attitudes, create an open society, build an inclusive society, and open educational opportunities for all to prepare effective education for all students and increase the efficiency of school entry costs (UNESCO, 2003). In this case, children with special needs such as the deaf and blind require special attention in the learning process at school. Especially for deaf children, Nirmaladevi & Raja (2018) state that hearing loss, deafness, hard of hearing, and hearing impairment are various terms used in the deaf community as a condition of inability to hear one of the partial or total disturbances.

Hearing impairment in the deaf results in hindered language development, making it difficult to communicate in the learning process in class and also when communicating with others in their daily lives. Especially in absorbing English language material. It is undeniable that proficiency in a foreign language, especially English, is essential for all students, especially for students with special needs. However, many students' English skills are still inadequate. It is known that English is a universal language because it has been used to communicate in most countries in the world as the main language. In addition, English is also one of the important international languages to master or learn, including in Indonesia (Rahmah, 2018).

The difficulties in learning English are the difficulty of pronunciation in reading due to differences in articulation between readings and how to pronounce them, as well as difficulty understanding grammar or grammar in the context of tenses and words that have many meanings. Lack of self-confidence in speaking English also causes difficulties, coupled with the difficulty of translating every sentence that wants to be spoken into an additional factor in speaking English in public. Lack of friends to practice English also causes someone's final difficulty in practicing English. An increase in someone's interest in learning English can be increased through videos in English that are currently being updated. The more attractive the English video, the more it will increase someone's interest to actively watch and know English vocabulary widely. (Nurul, I. 2021).

The interesting thing here is that English language learning with the application of videos must also be accompanied by a unique, fun method, allowing the class to become dynamic and full of enthusiasm, especially for deaf students. In this case, the researcher provides a choice of one method that is tailored to the needs of deaf students, namely the role-playing method, to arouse passion and optimism in students and create a sense of togetherness. Students can directly participate in playing something that will be discussed in the learning process. The reason for using the role-playing method is that this method can make students do many activities in learning and create a fun atmosphere. It is a form of motivator so that students are more enthusiastic in following learning. Thus, the results of students will be more effective.

According to Amri in Ningsih (2014) "role-playing method is learning through the development of students' imagination and appreciation by having students play a character, both the living and the dead. This method develops appreciation, responsibility, and skill in using the material studied". Komalasari (2014) added, "Role playing is a student's appreciation. Students carry out the development of imagination and appreciation by acting



as a living character or dead object. This game is generally carried out by more than one person, depending on what is being played". In this case, the role-playing method is based on personalization through a data-driven approach. The approach using data is predicted to become a top trend in the education technology industry. Personalized learning focuses on connecting the knowledge, experiences, and abilities that students already possess with new learning material. Data-driven personalization is when we know enough about someone to deliver content to them at just the right moment. At its core, personalization is delivering value to someone at just the right moment. Gone are the days of random blasts and generalization. Today, we must be specific, personal, and strategic with our marketing efforts (Todd Lebo, 2020).

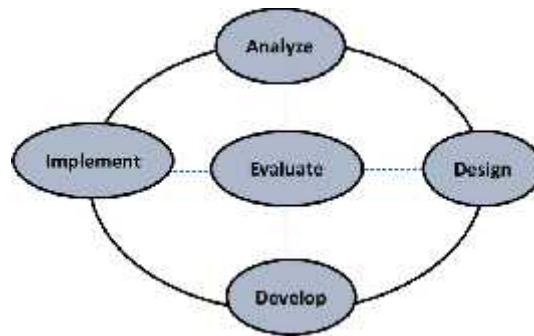
Deaf students actually do not have cognitive obstacles in processing information and giving responses. However, due to differences in how these responses are given, it becomes a challenge to interact between deaf students with their lecturers or hearing friends. Individuals who hear quickly are able to capture explanations verbally. At the same time, deaf students rely more on non-verbal symbols (sign language) and visualization in the form of writing/pictures (Ariej & Rahardjo, 2019). The difficulty in learning English is due to the difficulty of pronunciation in reading because of the differences in articulation between readings and how they are pronounced, as well as the difficulty in understanding grammar or grammar in the context of tenses and words that have many meanings. Lack of self-confidence in speaking English also causes difficulties, coupled with the difficulty of translating every sentence that wants to be spoken into an additional factor in speaking English in public. Lack of friends to practice English also causes someone's final difficulty in practicing English. The limitations of deaf students in following the education process at universities are also due to the lack of support from the surrounding environment for language input through various media and methods that match the communication patterns of deaf students, such as signals, gestural techniques, and easy-to-understand reading materials (Lintangsari, 2014).

Refocus (2022) states that "the approach using data is predicted to become a top trend in the education technology industry. Personalized learning focuses on connecting the knowledge, experiences, and abilities that students already possess with new learning material. Data can also be used by EdTech companies to apply changes and improvements in student learning experiences." Rifki Dharma (2021) added that "data-driven is one approach taken in doing work that uses data as a reference or basis for the work itself. In its implementation, data-driven will focus more on analysis processes, interpretation, and also presenting the necessary data." Based on the data obtained, deaf students at Pamulang University heavily rely on written text as one of the ways students understand the lecturer's explanation, which is primarily still delivered verbally. Often, lecturers have not fully provided the needs required by deaf students in the form of complete and detailed writing. Even during the lecture process, lecturers explain the material very quickly, so this becomes an obstacle and adds to the difficulty for students to understand the material given. Offering "English language" learning videos through role-playing based on personalization through a data-driven approach for deaf students it will be able to strengthen one of the problems of difficulty in achieving a friendly environment at universities, which is accessibility provided by campus for learning (Soleh, 2014).

## Research Method

This research used a research and development (R&D) method. R&D research, according to Sugiyono in Haryati (2012), is a research method used to produce a specific

product and test the effectiveness of that product. Furthermore, it is explained that to be able to produce a specific product, analysis research was used (survey or qualitative method), and to test the effectiveness of the product in society, research was needed to test the effectiveness of the related product (experimental method). This study used a needs analysis with a qualitative method and product effectiveness testing with an experimental method through the ADDIE model.



**Figure 1. ADDIE Model**

The development of learning innovation uses the ADDIE model. The ADDIE model is a framework that dominates for use by instructional designers (Morrison et al., 2010) in Sharifah & Faaizah (2015). In the ADDIE model, there are dynamic, flexible guidelines that can help designers form effective support tools, becoming 5 phases, including analysis, design, development, implementation, and evaluation. The following is an R&D approach using the ADDIE model:

#### *Stages of Analysis*

*In the analysis stage*, this research used a needs analysis for special needs students, in this case, deaf students. From the researcher's observation, it was found that deaf students are students who experience a loss of hearing function, either partially or entirely, which has complex impacts on their lives. Deaf students physically appear normal, but when invited to communicate, it is apparent that they have hearing impairments. Deaf students do not necessarily have speech impairments, but generally, deaf students experience secondary disabilities such as speech impairments. The cause is that students have very little vocabulary in the brain system, and students are not used to speaking. Deaf students have varying levels of intelligence, from low to genius. Deaf students who have normal intelligence generally have low achievement levels at universities. It is caused by the acquisition of information and language understanding being less than that of hearing-capable students. Deaf students get information from the senses that still function, such as sight, touch, taste, and smell.

#### *Design Stages*

The principle of learning for deaf students starts from easy things and then gradually moves to more difficult levels. Learning for deaf students can be done by providing real and repeated experiences. Deaf students lack understanding of verbal information. It causes them difficulty in receiving abstract material, so media is needed to facilitate understanding of a concept in deaf students. An attractive picture media that students favor is considered as relevant media to help deaf students overcome learning problems that have abstract material. In this case, deaf students have difficulty digesting English language learning, so an interesting learning design is needed to facilitate the concept of English. Through observation, the researcher provides alternative role-playing to innovate in learning so that lecturers find it easy to deliver material in class. This stage is the stage of designing learning



videos through role-playing based on personalization through a data-driven approach used as English language learning tools for deaf students.

#### *Development Stages*

The next step in the ADDIE process is the development stage. In this case, there are several procedures in the development process used in this learning innovation model, including:

- 1) Implementing English language learning innovation through role-playing videos with personalization through a data-driven approach.
- 2) Testing from the perspective of:
  - a) Feasibility from the material expert's perspective
  - b) Feasibility from the media perspective
  - c) Feasibility from the practitioner's perspective
  - d) Response to trial from deaf students

#### *Implementation Stage*

The implementation stage is the stage after the video innovation is produced. Through trials by several experts, it is then tested on students to obtain the feasibility of the resulting product. After that, it is implemented in inclusive classes to determine whether or not the product used is effective.

#### *Evaluation Stage*

The examination stage is to check whether the output produced has met the expected quality standards of development results, with success indicators: innovative learning development is said to be feasible if it has met valid, practical, and effective criteria. Valid criteria are obtained from the results of technology validation by material experts, media, and practitioners. Effective criteria are if the results of using innovative learning are able to deliver success to students in understanding English material; that is, students achieve a mastery learning score with a minimum of 70.

## **Results and Discussion**

The development of English language learning videos through role playing based on a data-driven approach was developed using the ADDIE model, which consists of several stages. The five stages of the ADDIE model were analysis, design, development, implementation, and evaluation. These five stages are interconnected and interrelated with each other.

**Table 1. Research Instrument**

No.	Aspect	Indicator	
1	Material Expert	Language Use	Clarity of language use
			Clarity of word and sentence structure
	Learning		Relevance of material to the competencies to be achieved
			Relevance of material to the indicators to be achieved
		Provision of exercises	
2	Media Expert	Text and Image	Clarity of displayed text
			Clarity of displayed images
			Accuracy of text and image colors
	Material		Accuracy of material
			Clarity of material in media
			Clarity of material in media
	Attractiveness	Attractiveness of media appearance	
	Ease of Use	Ease of media use	





	Language Use	Clarity of language use
		Clarity of word use
		Clarity of sentence use
3	Practitioner Expert	
	Text and Image	Clarity of displayed text
		Clarity of displayed images
		Accuracy of text and image colors
	Attractiveness	Attractiveness of media appearance
	Material	Accuracy of material
	Language Use	Clarity of language use
		Clarity of word use
		Clarity of sentence use
4	Student	
	Material	Material selection
	Ease of Use	Ease of media use

*The analysis stage* is carried out with needs analysis, curriculum analysis, and student characteristic analysis. In the needs analysis, it is known that the problem is the lack of varied learning media in English language learning, especially for deaf students, which reduces the students' interest in learning. At this stage, deaf students have not been able to understand learning without using interesting methods and media that can support the learning process. Therefore, learning media is needed as a tool that supports the learning process of delivering material. The data obtained at this stage was collected to be a reference in the media development process. The curriculum analysis showed that the material that becomes the reference in making learning videos through role-playing based on personalization through a data-driven English was preposition material, subject and verb, and comparison. These three materials have been adjusted to the needs of deaf students who can be linked to role-playing through material experts from English lecturers.

*The design stage* is the design stage of the product being developed based on the results of the collected analysis. This stage was carried out by compiling four assessment instruments for English language learning videos through role playing based on personalization through a data-driven, consisting of material expert validation instruments, media experts, practitioner experts, and student responses. From these four instruments, content validity and instrument reliability tests have been carried out. The content validation of the instrument obtained results that are in the range of 0.80-1.00 so that the assessment instrument for English language learning videos through role-playing based on personalization through a data-driven is declared valid with a "very high" content validity level.

The researcher also designs the content contained in the learning video through a storyboard. The application used is Adobe Premier Pro and editing and voice recording are done through a Microphone. This role-playing learning video lasts 6-10 minutes from each video. At this stage, the researcher designs a learning video consisting of an opening, core, and closing from each material that has been selected for its role-playing method. The designed learning video has a resolution of 720p with a ratio of 16:9. The designed video contains two lecturers as talents who fill in English material with one Sign Language Interpreter (SLI) in translating the language to facilitate deaf students in receiving the English material. Furthermore, when the learning video design has been made, it is then consulted with reviewers to obtain maximum results of the developed English language learning video. After the reviewer lecturer approves the video design, the research can proceed to the development stage.

### Development stage

At this stage, product development was carried out, namely the innovation of English language learning videos through role-playing based on personalization through a data-driven. The development of this video was carried out according to the product design that researchers have approved, reviewer lecturers from media experts, practitioner experts, and English material experts. After this innovation of English language learning videos through role-playing based on personalization through a data-driven was developed. Its validity is tested because the requirement of a product's feasibility can be seen from its validity and reliability tests. Product validity testing was carried out through review activities by several experts, namely 2 lecturers as material experts, 2 lecturers as media experts, and 2 lecturers as practitioners. This review activity was carried out to find out the shortcomings of the developed product through input, suggestions, and comments. The validity test was carried out by categorizing groups where the results were all in the range  $4.0 < X < 5.0$ , which means very good.

**Table 2. Validity Test**

No.	Validity	Score	Qualification
1	Material Expert	4.60	Very Good
2	Media Expert	4.80	Very Good
3	Practitioner Expert	4.66	Very Good
4	Students	4.42	Very Good

For the reliability test, it is categorized in the range of 81-100% with very high qualifications, except for expert practitioners with only high categories, which is obtained by the following table:

**Table 3. Reliability Test**

No.	Reliability	Score	Qualification
1	Material Expert	92,6 %	Very High
2	Media Expert	94,3%	Very High
3	Practitioner Expert	78,4%	High
4	Students	92,5%	Very High

*The implementation stage* in this case is to apply the English language learning video through role playing based on personalization through a data-driven. The stages in the implementation of learning were the lecturer gives a pre-test before this learning video innovation was given, then the second test during the implementation of the method, and finally the post-test after getting the treatment of English language learning video through role playing based on personalization through a data-driven. The test results for deaf students are as follows (with the student's name we give initials to respect the existence of deaf students):

**Table 4. Test Results of Deaf Students**

Name	Pre test	Treatment	Post test
A	48	71	85
B	37	68	82
C	62	76	82

*Evaluation Stage* It is the final stage of the ADDIE method. In this case, the evaluation in video-assisted learning based on gamification is carried out with the hope that deaf students who are targeted can receive and understand basic statistical learning well in accordance with learning objectives.

### Discussions

This development research produces English language learning video products through role playing based on personalization through a data driven for deaf students. The



video developed in this research was a YouTube-assisted learning video, meaning the video is developed and then uploaded to the Google service application, namely YouTube. The characteristic of this YouTube-assisted learning video was that it used a role playing method based on personalization through a data drive to attract students in the process of understanding the material, especially deaf students. With this role-playing, students will be invited to play roles to facilitate the material, so it will be interesting when the material is explained through role-playing. The product developed has been declared valid and reliable based on the results of validity and reliability tests from material expert tests, media expert tests, practitioner responses, and student responses.

*In the analysis stage*, the results of the curriculum analysis showed that the availability of learning media in English courses needed to be improved. The results of the student characteristic analysis showed that deaf students were at the concrete operational stage (Hardani & Akmal, 2017; Maryani & Sumiar, 2018). Students who are at the concrete operational stage really need learning media to help students understand learning materials (Saputri et al., 2018; Sukmanasa et al., 2017). Using interesting media and methods can provide explanations to students with precision, which will facilitate their understanding of the material (Asmara et al., 2018; Hilmy & Niam, 2020).

*In the design stage*, from these four instruments, content validity and instrument reliability tests have been carried out. The design stage was carried out by planning a learning video media using the Adobe Premier Pro application and editing and voice recording is done through a Microphone. This learning video lasts 6-10 minutes for each material, with a role-playing method in which there is role-playing with a specific theme adjusted to the material so that students will feel they are in that role; this will be an attraction for students, especially deaf students. At this stage, the researcher designed a learning video consisting of an opening, core, and closing. By developing English language learning video media through role-playing based on personalization through a data-driven design with attractive animated images with role elements that can be adjusted to daily activities and the presence of a narrator and SLI can increase student interest in following learning so that the problems mentioned above can be solved (Istuningsih et al., 2018; Saputri et al., 2018). This is also in line with the fact that learning with clear objectives can be used as a reference in the learning process, such as having clear audiences, behaviors, conditions, and mastery levels (Ansyari, 2018; Arif & Yeniawati, 2018).

*The development stage*, based on the results of validity and reliability from material expert tests, media expert tests, practitioner responses, and student responses to the development of English language learning videos through role playing based on personalization through a data-driven are, declared feasible. The feasibility of the developed learning video media can be seen from the aspect of conformity with student characteristics, media design aspects, and usage aspects. Judging from the aspect of conformity with student characteristics, learning video media is developed based on the characteristics of deaf students who are still based on the concrete operational stage. The use of learning media that is in accordance with student characteristics in learning can help students understand abstract material and can improve student outcomes and achievements (Ekayani, 2017; Novita et al., 2019).

The feasibility of learning video media can also be reviewed from the aspect of media design that displays abstract material in the form of animation so that it can attract student interest in learning. Displaying animation images in role-playing that exist in the material in the learning process will give an interesting impression to students so that it can make active, creative, fun, and effective learning (Novita et al., 2019; Panjaitan et al., 2020). With the





presence of learning video media, it can give an ideal, meaningful, and fun learning impression (Andrian, 2017). With this, learning video media is feasible to use in a learning process because it can attract student interest in learning so that it gives an ideal, meaningful, and fun learning impression. The feasibility of learning video media can also be reviewed from the aspect of use, where learning video media is designed to be accessed through YouTube media so that it can be watched repeatedly by students all over the world. Videos that can be watched repeatedly by students can make it easier for students to understand the material better because students can replay the delivery of material on the video (Fedistia & Musdi, 2020; Hamid & Effendi, 2019).

*In the implementation stage*, the results obtained are relevant to previous research on learning video media. Research that gets results that developed learning video media is declared very feasible to use in the learning process (Suratun et al., 2018). In addition, research that gets results that learning video media with animation is declared valid and feasible to use in the learning process (Kafah et al., 2020). Another study that gets results is that learning video media developed based on YouTube is declared valid and very feasible to use in further learning and research (Yudela et al., 2020).

The achievement of a very good qualification can also be achieved because of the clarity of the material presented. The material presented in the learning video is very clear. Videos can help educators teach material concepts and explain abstract things in concrete (Christ et al., 2017; Nurdin et al., 2019). The material presented in the learning video has been presented systematically. Systematically and variably arranged materials will make it easier for students to understand the contents of the material (Coles, 2019; Fatmala et al., 2017). After using video media in learning materials, students begin to be interested and better understand the material (Nurdin et al., 2019; Purbayanti et al., 2020).

This research implies that English language learning videos through role playing based on personalization through a data-driven learning video can help achieve the learning process and can be accessed anywhere and anytime. In addition, the development of this learning video innovation adds to the attractiveness and enthusiasm of students, especially deaf students, in studying both when receiving and understanding learning materials because the learning video contains material in the form of text, images, sound, animation, music, talent who play roles, and translations from Sign Language Interpreters (SLI) packaged in these learning videos. English language learning videos through role playing based on personalization through a data-driven can motivate students to learn English so that learning objectives can be carried out and have a good effect on learning outcomes.

The evaluation stage is where the examination is carried out to determine whether the output produced has met the expected development quality standards, the output here being the innovation of English language learning videos produced. The advantages of English language learning videos through role playing based on personalization through a data-driven can be accessed anywhere and anytime, even repeatedly. Using YouTube-assisted learning media can also increase student interest in following learning because learning video media can make an exciting impression on students (Akmal et al., 2020; Pham et al., 2020). According to Husnul, NRI (2021), it is true that e-learning or Zoom, classroom, and media WhatsApp can also be accessed via cellphone so that the effectiveness will become easier. If we are a student or the lecturer has other work and a laptop cannot be used, then all platforms are on above; we can use a cellphone.

The disadvantages of English language learning videos through role playing based on personalization through a data-driven are that it requires a gadget to access learning videos and requires a quota/data package to access them. In addition, the weakness of the learning



video media developed in this study is that the scope of the material developed is still narrow, which is only stuck on three materials in English courses. Based on these weaknesses, similar research is needed to develop learning video media with a broader scope of material and developed with better assistance or other bases.

## Conclusion

Based on the results and discussion above, the conclusions of this study are as follows:

- 1) The analysis stage resulted in material that is tailored to the curriculum and student needs, and the learning innovation that meets these needs includes the subjects of subject and verb, preposition, and comparison.
- 2) The design stage resulted in an innovative learning video through role playing based on personalization through a data-driven approach, which includes opening material, content, closing material, and practice questions.
- 3) The development stage showed that from the validity and reliability tests through material experts, media experts, practitioner experts, and student responses, it is shown that the innovative learning video through role playing based on personalization through a data-driven approach is declared feasible.
- 4) The implementation stage showed that the scores of 3 deaf students after receiving treatment from the learning video through role playing based on personalization through a data-driven approach resulted in scores above 80.
- 5) The evaluation stage showed that the innovative learning video through role playing based on personalization through a data-driven approach is very easy to access, practical, and efficient.

## Recommendation

Based on the results of the research that has produced a learning video through role playing based on a personalization through a data-driven approach, the following recommendations can be given: (1) For lecturers to be able to apply this learning video in other courses to make it easier for deaf students to understand. (2) For universities to not only focus on deaf students but also on blind or speech impaired students, so that all students with disabilities receive learning innovations too.

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