Infographics and independent learning for English learning in the secondary level context

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Abstract

Visual media are still ineffective in covering all learning focus and learning activities to support independent learning. Independent learning guides students to learn the material by themselves, but it is still not supported by the existing visual media. Infographics are a medium that underlies transformative skills in teaching because they can provide a complete learning focus in each material. This study was aimed at developing English teaching media for the 9th grade. A Design and Development research (DnD) proposed by Richey and Klein (2005) was used in this study, including design, development, and evaluation. Initial observations have been carried out at one of the junior high schools in Buleleng, Bali, Indonesia. Data collection was carried out by library research relating to the development of infographics and the nature of independent learning, document analysis by doing syllabus analysis, and expert judgment. The results obtained from the research are infographics are considered to be very good as a medium for teaching English for independent learning. This research implies that teachers' technology-based teaching skills can be assisted by developing this infographic teaching media.

Keywords: English teaching media; independent learning; infographic development; infographic media; visual media

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Introduction

Technological advances in the current era are growing rapidly. Technology is one of the factors that make all human jobs easier nowadays. Including education field, technology is fundamental in advancing education. Almost all parts in education can be provided by technology such as facilities, learning media, sources, and so on (Yildirim et al., 2016). Indonesia is one of the countries that must catch up with the swift technological developments in education, different from other developed countries, such as Finland, which is considered a country with the best education. The arrangement of the educational process in Finland emphasizes teaching media (Burg, 2018). The process and planning for the use of teaching media have been arranged in the curriculum from the beginning. Many rules and regulations must be implemented in the educational field so that Indonesia, especially in Bali, still cannot keep up with developed countries in education (Suparsa et al., 2017). Therefore, teachers as teaching staff must adapt to developing effective and efficient teaching and learning processes with this technological development.

Moreover, in the current era, teachers are required to have the ability to integrate knowledge, materials, and teaching strategies with technology as what is called Technological Pedagogical Content Knowledge (TPACK). TPACK proposed by Koehler and Mishra (2008) is relating to knowledge, material, teaching strategies, and technology in education. Looking at the components highlighted in TPACK, these abilities can direct students to become independent learners. Independent learning emphasizes the students' learning process with the teacher's assistance as the facilitator (Harvey & Wolfe, 2007). Through independent learning, students will acquire their knowledge and develop it themselves (Žydzūnaitė et al., 2015). This will have an impact on students' achievement. Through independent learning, Harvey and Wolfe (2007) stated that students will be more motivated in learning because they play their role in understanding the knowledge gained. Therefore, students will get used to lifelong learning from how they proceed to understand something by themselves (Mota & Scott, 2014). Therefore, students will also be able to evaluate themselves regarding the shortcomings they have to improve.

Independent students have good skills in reading something and then visualizing it. So, they will tend to be closely related to visual media.

Visual media are mediums that are very common and often used by teachers in teaching. Visual media make the teaching process easy for teachers to provide information and convey it to students (Dunlap & Lowenthal, 2016). Through visual media, students can remember what is presented easier (Yildirim et al., 2016). Visually, students will also be more interested in the appearance of media. This will be able to attract students' attention in learning and relieve their boredom. As students of English as a foreign language, students must have a strong motivation to learn English. Visual media is one of the media that can help students understand learning English quickly. Through visual media, students will think more critically about something they read and see in an actual situation (Reyna, 2016). They will also find it easier to remember the vocabulary they see by themselves so that learning English will be easier for students.

The initial observation was carried out at one of the junior high schools in Buleleng, Bali, Indonesia. The teachers there primarily teach using visual media. For them, visual media is easy to use and more effective. However, the variations in the use of visual media in the school still seem monotonous. PowerPoint and video are teaching media that teachers often use in teaching English. PowerPoint is still not effective as a teaching medium compared to infographic. It is because PowerPoint includes a lot of slides. In studying the material, students may not be able to focus on repeating the material that has been taught because they have to look for it between several slides. This does not mean that PowerPoint is an ineffective medium to be used in the teaching and learning process. However, when compared to visual media which is more developed in its purpose, it will be able to shift the position of PowerPoint as a visual medium that can be used in the teaching process (Penciner, 2013). The use of PowerPoint as a visual medium is very ineffective in conveying information because the audience tends to focus on the slides displayed compared to the presenter's explanation (Uzun & Kilis, 2019). The audience also tends to read the entirety of what is displayed on the slide first rather than listening to the presenter's explanation. This causes PowerPoint to only be used as a medium that can only be guided by the teacher. In simple words, PowerPoint is a good medium to use under the guidance of the teacher, so the information points displayed on each slide will be conveyed well. Compared to infographics, the media can be used without a guide from the teacher because infographics have been designed to follow independent learning methods. So that students can use it easily with a well-provided learning focus.

In addition, the videos used are videos from YouTube, where most of the videos taken do not cover the entire focus of learning a topic. It could only be a definition or an example shown in a video. This does not make video an efficient medium for teaching because it does not cover the overall learning focus. Besides, using internet quota and large storage capacity should be paid attention to use video as a teaching medium. Besides that, its use must be done by the teacher. The teacher must explain again and be creative with learning strategies through teaching media that are commonly used. It still can be seen if students have not fully learned independently from the teaching media used. As is well known, English is a foreign language in this country so, it is a challenge for teachers to teach English. Innovative strategies and teaching techniques are needed for teaching English, including in teaching media innovation. Therefore, the infographic was developed to assist teachers in teaching English, especially for grade 9 junior high school.

Infographics are visual media that can be used as teaching media to support independent learning. The infographic has a simple appearance that includes only one slide. Therefore, the presentation of the material will be summarized briefly and clearly in one slide (Alqudah et al., 2019). Thus, teachers and students will facilitate their teaching and learning process through the use of infographics. In addition, infographics can be created with various attractive designs so that they are able to attract attention in terms of appearance. Regarding the content presented, the information provided will be more focused on important points in each discussion topic. Thus, it makes the teaching process more effective (Alyahya, 2019).

Different from other visual media, infographics are very easy to implement and use. Infographics users do not need to use many facilities. Infographics can be accessed via laptops as well as smartphones in jpg. format. Students and teachers can also save it without having to use internet quotas. So that, the use of infographics is effortless. This will support the teaching and learning process to be more flexible because it can be accessed anywhere and anytime. Its use is very supportive if it is used in a blended learning situation. Simbolon (2021) said that blended learning is a learning situation where students and teachers go through a more flexible teaching-learning process. Teachers and students can determine their schedules, places, techniques, and learning atmosphere, which they create in blended learning. Infographics become media that can support the teaching and learning process in any situation. The overall learning focus included in the infographic will support an independent learning process. Students can learn independently using infographic media without a learning process that dominantly involves the teacher.

Previous studies have been conducted about infographic. There are three studies related to this research that are used to support this research. Ozdamli and Ozdal (2018) conducted research on the development of teaching media based on the Analysis, Design, Development, Implementation, Evaluation (ADDIE) through infographics by gathering the opinions of teachers and students. After conducting research, it was found that most of the teachers agreed that the use of infographics was able to assist them in teaching and delivering the material to students properly. In addition, the same thing was said by the students involved. They were more interested in learning to use infographics so that they were motivated to learn.

The second is the study of developing infographics as teaching media from Alyahya (2019). The discussion from that study is about the process of designing infographics as a learning tool. Alyahya (2019) conducted research in developing infographics as a teaching medium. Based on her research, the infographic was developed at the university level. The result found was that the use of infographics was able to increase students' interest in learning. The simple infographic packaging makes students feel more effective in learning using infographic media. Apart from that, infographics are also an innovative teaching medium different from the typical media that they used. This makes students more interested in learning to use infographics.

The last study is from Alqudah et al. (2019) about the infographic impact as teaching media and users' perceptions of infographic media. The use of infographics as a teaching medium makes it easier for students to learn. Infographics are media that summarize information briefly and clearly. So that students will understand better in learning through infographic media. This research found that the use of infographics could increase student interaction. It is because infographics are an effective medium to use in teaching. Infographic media facilitates students to discuss and interact with each other based on the material presented.

Different from research studies that have been carried out related to infographics, this media was developed by covering all the focus of learning English for 9th grade into one slide. In addition, the development of this media refers to the ability of teachers to be fulfilled by TPACK in the technology-based teaching and learning process that supports independent learning. All important points in the teaching and learning process in knowledge, teaching strategies, and materials must have collaborated with technology (Koehler & Mishra, 2008). This is a challenge for teachers in integrating all these aspects into teaching media. In supporting the independent learning process, the media used must cover the overall focus of learning so that students can learn

independently. The media created must be innovative to support independent teaching and learning activities (Mota & Scott, 2014). However, the existing media have not been designed innovatively so that they cannot support students to learn independently. In visual media, media use is still monotonous and less effective in covering the entire learning focus of a topic. Most visual media are only a display to one learning focus and do not cover the whole focus of learning. So that, teachers need media or other techniques in teaching to complete it again. There must be innovation and a new teaching atmosphere created to make students more motivated to learn English. Therefore, the infographic was developed into a medium for teaching English created between content and media to make it more interesting. This study aimed to develop infographics as English teaching media that can help teachers adapt to technological developments and create independent learning.

Method

Research design

This study uses Design and Development research (DnD) proposed by Richey and Klein (2005), which consists of 3 steps: design, development, and evaluation. The research steps can be seen in Figure 1.

Figure 1. Research steps

This step is a stage adjusted to the Design and Development research from Richey and Klein (2005). Design, development, and evaluation are implemented in this study in developing infographics as teaching media. Design is the initial stage in media development where syllabus analysis is carried out to design a blueprint for media development. The development stage is carried out based on the learning focus that has been designed according to the development blueprint. The evaluation stage is conducted with the assessment of the media that has been developed through expert judgment. These three stages were chosen in the development of infographics because these stages support the

goal of developing infographics to support independent learning with a learning focus based on the syllabus.

This paper focuses on infographic media development to support the independent learning process. Infographics have many advantages as a visual medium. In terms of appearance, infographics are very effective visual media because they only contain one slide presenting the information. In addition, various designs can be created to include information in an infographic. In terms of content, infographics have very summarized information, making it effectively used as a teaching medium that only displays essential points in a material. The display of one infographic slide will encourage the learning process to use infographics to be more effective and efficient. This is because the entire focus of learning must be contained in one infographic slide for each material. So that, infographics become one of the visual media that can be used to support the independent learning process. There are three stages of media development followed, namely design, development, and evaluation. The design stage focuses more on the preparation of media development, where library research is carried out on infographic media development and independent learning theories. In addition, document analysis is carried out through designing a media development blueprint based on the syllabus to adjust the learning focus contained in the infographic. Furthermore, the development stage is the process of developing infographics in terms of media and content. The evaluation stage is the process of assessing the products that have been designed.

Picture 1 is an example of an infographic developed in this study. In Picture 1, there is an infographic that only shows one slide which covers the entire focus of learning on the topic of Label Text, namely, definition, generic structure, examples, and exercises. All discussions in each learning focus are presented in a summary because this media is complementary to support students in exploring more information related to the Label Text topic and other topics. In the upper right corner, there is a QR code that packs the exercise in it. It is designed to make the presentation of material more practical. Users can scan the QR code to access the practice according to the intended topic. There are 10 multiple choice questions in the exercise with the answer key after the user answers them and gets a score. The questions listed are classified as lower-order thinking because the role of this media is as a complement media. Then, to profoundly explore a topic, the teacher can be creative in making questions, or students can look for it in other sources.

Picture 1. Infographic (Source: the infographic design: label text topic)

Research setting

This research takes the setting of one of the junior high schools in Buleleng, Bali Indonesia. The junior high school is a school that is used as a basis for consideration in developing infographics. The consideration of the blueprint media development is based on the initial observation carried out to see the syllabus and the teaching media used by the teacher in teaching English for 9th grade.

Data collection

The data collection process used three steps, namely design, development, and evaluation. The design stage began with analyzing the syllabus used as a product development blueprint. The 9th grade syllabus was studied and the development blueprint was made by paying attention to several learning focuses. The learning focus used includes definition, language features, generic structure, examples, and question exercises based on the topic. This learning focus is the main component in developing infographics. The infographic was developed using Canva. Canva is an editing program for visual media (Yana, 2018). Many visual media can be created and edited via Canva, including

infographics. Canva has provided templates and various other elements for free.

The second stage is development, where infographics began to be developed based on the development blueprint that has been designed. For each design, the infographic was made in only one slide that contains all the learning focuses based on the media development blueprint that has been designed. The content included in each design is presented as summarized as possible and adjusted to the infographic template. The elements and fonts are selected to add aesthetic value to the design. In addition, the use of Quick Response (QR) code is used to complete the infographic design. QR code will direct the user to a link or place by scanning it (Petrova et al., 2016). It was used to convert practice questions on each topic. Then, questions on each topic were placed in Google Classroom. Google Classroom provides various activities to support an active learning process, such as material, quizzes, questions, and feedback.

In the evaluation stage, it was carried out to determine the quality of the infographic media. This quality assessment was carried out by conducting expert judgment by two experts. Expert judgment consists of two components, namely content expert judgment and media expert judgment. The research instruments used in the development of this media were the researcher's notes, blueprints for developing media, and expert judgment. Researcher's note was carried out to analyze and study the 9th grade syllabus. The syllabus was used as a consideration for creating a media development blueprint. The media development blueprint consists of all the English 9th grade topics. 13 English 9th grade topics were used as the media development blueprint. All of those topics were adjusted to the focus of learning which will be outlined in each infographic design. Expert judgment is an evaluation product to test the quality of the infographic media that has been developed. The expert judgment was adapted from Findawati and Suprianto (2014), which contains expert judgment and media expert judgment.

The quality of the media was analyzed quantitatively through this expert judgment. Teguh and Kirna (2013) formula were used to calculate the results of this expert judgment. After the results were obtained, they will be matched with the level of accomplishment of Agung (2012). If the result is more than 75%, the media is classified as good, and revision is not required. However, if the results obtained are still below 75%, the media needs revision.

Data analysis

Mixed methods were used in processing data where data processing is quantitative and described qualitatively. The development of infographics as a medium for teaching English was described qualitatively. Meanwhile, the quality of the infographics has been found quantitatively and described qualitatively. In processing infographic development data, a syllabus analysis was carried out at the beginning as a guide in designing a media development blueprint. 13 topics of 9th grade in the blueprint development were developed into infographics with the learning focus based on the syllabus. After that, the development was started with designing an infographic on the Canva program. In addition, the Google Classroom and Google Form programs were also involved in supporting the effectiveness of this media. In Google Classroom, some activities underlined the use of graphic media, which seem more interactive with practice questions on Google Form. Then the quality of the infographic media was explained through the results of the expert judgment. Before conducting expert judgement, the instrument validity was carried out to test the relevancy of the instrument. The results of the instrument validity were calculated by Gregory's (2000) formula and compared to the level of content validity.

The level of content validity is the limit of an instrument that must be passed to serve as an expert judgment. Therefore, the results obtained after calculating the content validity will be adjusted according to the level of content validity. The results show that all instruments in the content expert judgment were considered relevant by the two experts. After that, the result is calculated with content validity and the result obtained is 1. It means that the final result is classified as very high based on the level of content validity of. So, it can be said that the instrument from the content expert judgment can be continued to the expert judgment stage. The results of assessment media instruments are relevant. The results of the content validity calculation got result 1, which is classified as very high. Therefore, the stage can be continued to the expert judgment.

Findings

This section explains the results of the findings in this study, such as (1) How to develop infographics as a medium for teaching English, and (2) How is the quality of the infographic media that have been developed.

The development of infographic

The development of infographics as teaching media is divided into three stages consisting of design, development, and evaluation. These three stages are summarized in Table 1.

Table 1. The development of infographic

Stages	Processes	Results
Design	Analysing 9 th grade syllabus	Blueprint media development
Development	Developing infographic media in Canva, Google Classroom, Google Form, and QR Code Generator	The infographic media for 9 th grade with 13 topics
Evaluation	Conducting expert judgement	The evaluation was used as a consideration in making refinements in Appendix 2

Design

At the design stage, the syllabus analysis was carried out initially as a basis for developing the media. The 9th grade syllabus was studied and used as the basis for creating a media development blueprint. There were 13 topics for 9th grade English lessons that were included in the blueprint. In addition, the focus of learning is based on the syllabus including, definition, generic structure, language features, examples, and practice questions. However, not all topics were included in the learning focus because they were adjusted according to the discussion topics. The entire learning focus matched with a design template that developed with the Canva program.

Development

The development stage was the process of making infographics as a teaching medium. There were 4 programs involved in the development of this media, including Canva, Google Classroom, Google Form, and QR Code Generator. Canva was used as a program to design infographic designs. There are various features and templates provided by Canva. The templates and features there can be adjusted according to the desired design. In addition, Google Classroom was also used to complement the developed design and content. In Google Classroom, ten multiple-choice questions were created in the Google Form

feature. Then the link was converted into a Quick Response (QR) code included in the infographic design. In the Google Classroom, various activities such as questions and answers and feedback were included to make the teaching process using infographics becomes more interactive. All learning focuses were adjusted to the template used. So that, it makes the content presented adequately, and the appearance of the design is also attractive.

Evaluation

The evaluation stage is the media assessment stage. Infographics are judged by expert judgment related to the content and media. In addition, several improvements were made based on expert judgment in various content and media components which is shown in Appendix 2. Through this evaluation process, the media was revised again in accordance with the improvements.

The quality of infographic

The quality of the media developed was assessed through the expert judgment conducted by two experts. Previously, the instrument validation was carried out. The results found were relevant. Thus, the expert judgment stage can be performed. The media were assessed using the formula proposed by Tegeh and Kirna (2013) then the percentage obtained from the formula was matched with the level of accomplishment from Agung (2012).

The level of accomplishment is used as a benchmark in adjusting the results of expert judgement, which consists of very bad to very good categories. The lowest category to medium is sufficient to be a category that needs to be revised the media. Then, the result of percentage above those categories are not required for revision. Meanwhile, the measurement of the quality is carried out by calculating the percentage from the final score of the assessment in expert judgement with the number of its components. Based on the final results obtained, the percentage of media that has been developed got a satisfactory score and it is classified as a very good media. The first expert gave a score of 95% for both categories of content expert judgment and media expert judgment. Both scores are classified as very good results. The second expert gave a score of 77.5% on the content of the expert judgment and the media expert judgment. Both scores are classified as good scores. Therefore, revision is not required in the development of the infographic as a teaching medium.

Based on the results obtained from this study, the infographics have been developed into English teaching media that teachers in the teaching process can implement. Infographic development has passed three processes: design, development, and evaluation based on Design and Development research theory from Richey and Klein (2005). Every process has been appropriately checked so that the media produced becomes an effective teaching medium. Observation of the syllabus has been carried out as an inspiration in developing a media development blueprint. Furthermore, the media began to be developed based on development blueprints and adjustments to the principles of good visual media from Reyna (2016). After that, the media had been assessed through expert judgments from two experts in terms of content and media. The results obtained from the expert judgment prove that infographics are classified as very good media to be implemented as a teaching medium make students know their learning performance (Putri et al., 2021). However, improvements are made on the infographic media based on the experts' evaluation, including media components and learning activities. Refinement is carried out to make the infographic becomes a medium that is ready to be used in teaching.

Based on the results obtained, the development of infographics as a teaching medium supports the independent learning process. The display of infographics as a visual medium is able to summarize all the learning focuses contained in each topic. The details regarding the appearance of the infographic media can be seen in Appendix 1. The display of the infographic media in Appendix 1 is adapted to the media development blueprint in Appendix 2. All components of the learning focus can be included in the infographic in only one slide package. This will support the independent learning process of students, where they are directed to learn by themselves about a topic. The infographic has covered a summary of the material explanation, provided examples, and practiced questions with answer keys and scores. Therefore, the teacher's role will be more optimal as a facilitator where students can learn independently through infographic media that has assisted them in learning.

Discussion

The availability of technology-based teaching media still does not support independent learning. There are still many teaching functions that only focus on its main function as a medium in delivering material. Even though in the current era, the demands for teachers' ability in TPACK must be able to integrate knowledge, material, teaching strategies with technology (Koehler &

Mishra, 2008). In addition, the learning process has also led to independent learning where students learn and process the lesson by themselves (Harvey & Wolfe, 2007). The overall focus of learning should be the basis for creating a teaching medium to fulfill the teachers' ability in TPACK to support independent learning. There have been several studies related to infographics development, but there has been no research on how infographics are designed to support the independent learning process. So that infographics are developed in visual media for teaching English that follows the principles of a good visual media (Reyna, 2016). Infographic is a visual media that are used to convey information in a brief and brief manner (Alqudah et al., 2019). As a teaching medium, infographics will also be developed in a summary and concise manner. Ozdamli and Ozdal (2018) have also developed infographics as a teaching medium, where they found that infographics are very effective in attracting students' attention in learning. It is due to its simple display presented in the infographic.

The infographic was developed using three stages: design, development, and evaluation based on the concept of Design and Development by Richey and Klein (2005). The development blueprint was design based on the existing syllabus. After that, the development blueprint was made by paying attention to several learning focuses included in the media, such as definitions, language features, generic structure, examples, and question exercises. There are 13 topics of 9th grade English that were developed into infographic media. However, the exercises developed are still classified as Lower Order Thinking. This is because infographics are developed as complementary in delivering material. Thus, the teacher is expected to be more creative in designing infographic. The infographic on each topic consists of only one slide that covers the entire learning focus. The design also considers the various components of visual media, according to Reyna (2016). The content and the display of the media were balanced. This media also used four programs: Canva, Google Classroom, Google Forms, and QR Code Generator. These four programs were used to support the infographic media to become an effective teaching medium and facilitate the task of teachers in delivering material and increase student motivation (Bicen & Beheshti, 2017).

The quality of the infographic as a teaching medium has proven to be very good. Based on the results of expert judgments that have been carried out, infographics were classified as good media, and revision was not required. The score obtained in the expert judgment belongs to the very good media based on the level of accomplishment. Other research related to infographics was also carried out by Alyahya (2019). Her research found that infographics are good as

a teaching media to be implemented in the teaching and learning process. That was evidenced by the perceptions of teachers and students who agree that infographics were a good medium to use in the teaching-learning process. Therefore, based on the expert judgment results, infographics were classified as good media and had good quality as a medium for teaching English for 9th grade junior high school.

Media development that has been developed in accordance with the principles of good visual media from Reyna (2016) makes infographics become good teaching medium. Various features and designs have been adjusted to follow the learning focus. Design templates were also included to add an aesthetic impression. It also did not detract from the meaning of the concepts conveyed. The material in the infographic is presented in the form of a summary and concise manner by placing only the essential points. In addition, expert judgment was also carried out to determine the quality of the media that has been developed. Therefore, the media is assured of having good quality as a teaching medium that can support independent learning.

Infographics are designed as visual media that support independent learning. Independent students tend to have more abilities in visualizing the knowledge they learn. Therefore, infographics are designed with summarized material to help students to explore more. It is supported by Ozdamli and Ozdal (2018) who stated that by covering the entire learning focus on each topic, infographics become a medium that can lead students to learn flexibly and independently. Students can easily access the infographics anywhere and anytime. In addition, they can also access the entire focus of learning by themselves, starting from the material to the questions that have been provided. With the infographics, students will be able to learn independently and teachers will be more assisted as learning facilitators. Thus, students will be able to improve their abilities and skills by doing self-study. Infographics as teaching media become their facilities in learning English. Even though infographics are used as complementary media, it does not mean that infographics are the only media that can be used in presenting certain materials. Teachers can also be creative in creating learning activities and students can also use other media to support them in learning certain topics.

Moreover, infographics have been adapted to teachers' demands in TPACK by integrating knowledge, materials, and teaching strategies in technology (Koehler & Mishra, 2008). In terms of knowledge, infographics have been developed based on the K13 syllabus outlined in the media development blueprint that includes the focus of learning. In addition, from the material aspect, it has been presented in a summary and comprehensive manner on each

topic for 9th grade of junior high school. It has been assisted to be equipped interactively through the Google Classroom where students can interact with other students and teachers for teaching activities. Therefore, with the availability of an overall learning focus and support from various programs, infographics can be used as a teaching medium that promotes independent learning.

Conclusion

The infographic was developed to support independent learning through visual media. The quality of the developed infographics showed very good results. Those results were obtained from the results of the expert judgment conducted by two experts. Some improvements were made according to the expert evaluation regarding the content and media from the infographics. Refinement was done to complete the infographic as a teaching medium. Refinements were made to the content components by adding an interactive question and answer feature, giving gamification in the form of a score, adding a feedback room, and using infographics as a medium for teaching English. Based on the principle of TPACK, infographics are helpful for teachers in delivering teaching materials. In addition, since infographics promote independent learning, students will be more motivated to learn independently. Therefore, infographics are classified as good visual media to use in supporting independent learning.

This research implies that the development of infographic media is designed for online availability. Google Classroom and Google Forms can only be accessed online. Therefore, the research product has been made in the form of a book so that all infographics and questions can be viewed offline. To maximize the learning process, teachers need to elaborate on the learning activities. Teachers can be creative in creating other teaching strategies using infographics in online or offline circumstances. Several suggestions were put forward based on this research. Through this media development, it is hoped that the infographics are helpful in the teaching process. The media has been developed as best as possible based on the principle of TPACK so that teachers can use it effectively. All parties must be more innovative in developing creative teaching media for independent learning. Thus, the teaching and learning process can be more effective and efficient.

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Appendices

Appendix 1. Blueprint for developing infographic

No.	Topic	Basic competency	Learning focus
1.	Expression of congratulation and hope	3.1 Applying the structure of the text and linguistic elements to carry out the social function of the expression of hope or prayer and congratulations on a happiness and achievement, as well as the response, according to the context of its use.	Identify social functions and languages features of expressions of congratulation and hope.
2.	Expression of agreement	3.2 Applying text structure and language elements to carry out the social function of the expression of approval, as well as the response, according to the user context.	Identify social functions and languages features of expressions agreement.
3.	Expression of necessity and obligation	3.3 Applying the structure of the text and linguistic elements to carry out the social function of stating and asking about the necessity and appeal to take an action/activity, according to the context of its use.	Identify social functions and languages features of expressions of necessity and obligation.
4.	Expression of intention	3.4 Applying text structure and linguistic elements to carry out social functions stating and asking about the intent and purpose of carrying out an action / activity, according to the context of its use.	Identify social functions and languages features of expressions of intention.

5.	Expression of prohibition	3.5 Applying text structures and linguistic elements to carry out social functions ordering and prohibiting an action/activity, according to the context of its use	Identify social functions and languages features of expressions of prohibition.
6.	Label text	3.6 Applying the text structure and linguistic elements to carry out the social function of the drug/food/beverage label text, according to the context of its use.	Identify social functions and languages features of label text.
7.	Procedure text	3.7 Applying text structure and linguistic elements to carry out the social function of procedural texts by stating and asking about recipes and manuals, short and simple, according to the context of their use.	Identify social functions, generic structure, and languages features of procedure text.
8.	Present, past, future continues tense	3.8 Applying the structure of the text and linguistic elements to carry out the social function of stating and asking about actions/activities/events that are being carried out/occurring at present, past and future times, according to the context of their use.	Identify social functions and languages features of present, past, future continues tense.
	Present, past, future perfect tense	3.9 Applying text structure and linguistic elements to carry out social functions stating and asking about actions/activities/events that have been/has been done/happened in the past without mentioning the specific time of occurrence, according to the context of its use.	Identify social functions and languages features of present, past, future perfect tense.

9.	Cause and effect	3.10 Applying text structure and linguistic elements to carry out social functions stating and asking cause and effect relationships and inverse relationships, according to the context of their use.	Identify social functions and languages features of cause and effect.
10.	Narrative text	3.11 Understand the social function, text structure, and linguistic elements of narrative texts in the form of folklore, according to the context of their use.	Identify social functions, generic structure, and languages features of narrative text.
11.	Passive voice	3.12 Applying text structure and linguistic elements to carry out the social function of stating and asking about actions/activities/events without the need to mention the perpetrators, according to the context of their use.	Identify social functions and languages features of passive voice.
12.	Report text	3.13 Applying text structure and linguistic elements to carry out the social function of factual report text by stating and asking about factual scientific texts about people, animals, objects, natural and social phenomena and events, short and simple, according to the context of learning in other lessons in Class IX .	Identify social functions, generic structure, and languages features of report text.
13.	Advertisement text	3.14 Stating the text structure, linguistic elements, and social functions of the text of advertisements for products and services, according to the context of their use.	Identify social functions, generic structure, and languages features of advertisement text.

Appendix 2. Infographics' refinement

Evaluation	Before refinement	After refinement
Putting the steps in using infographic	Previously, there was no discussion about how or steps in using infographics as teaching media	The steps for using the infographic media are fixed to complete the media.
Giving points in the learning process to improve students' motivation.

	<p>Previously, the development of media did not include questions on each topic. The development only focuses on the content of each topic.</p> <p>In the previous design, in the rooms for each topic in the Google Classroom, only materials and exercises were available. There are no other features.</p>	<p>After that, the researcher added the questions that were placed in the Google Classroom by converting them into a QR code. Each student who has finished answering the questions they will be able to see the score directly and the answer key.</p> <p>In the refinement design, the researcher added a room for students to share opinions and write comments related to the topics available in the "Sharing" room. So that, Google Classroom is not impressed only as a place to present material and exercises but also a place for students to interact, therefore it makes this media more interactive.</p>
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<p>Feedback of the teaching and learning process using this infographic.</p>	<p>The initial design did not provide a room or opportunity for media users to give their feedback from the use of infographics as a medium for teaching and learning.</p>	<p>In the newest design, the researcher has added a "Feedback" room. In the room, users can provide feedback, evaluation, and suggestions to the researcher regarding media that have been developed based on their content and media as the evaluation for the researcher.</p>
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