# Learning through screens: How gestures, facial expressions, and motivational statements influence foreign language learning experience online.

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Untuk bunda, ayah, dan adikku tersayang. For my dearest mom, dad, and brother. 사랑하는 우리 엄마, 아빠와 동생이위한.

Benim annem, babam ve erkek kardeşim için. Voor mijn moeder, vader, en broer.

#### Abstract

**Purpose** – The present study aims to discover the influence of instructor's gestures, facial expression, and motivational statements in video lectures on learning outcome, satisfaction, purchase intention, and self-efficacy. It was hypothesized that delivering learning materials with the help of gestures, happy facial expression, as well as expressing motivational statements would lead to a better learning experience for learners. This study is intended to specifically investigate the use of metaphorical gestures, happy facial expressions, and motivational statements for the benefit of foreign language learning experience.

**Design/Methodology/Approach** – This research was a two (gestures versus no gestures) by two (happy facial expressions versus neutral facial expressions) by two (motivational statements versus no motivational statements) experimental study resulting in eight different video stimuli. These videos were designed in a picture-in-picture format. The stimuli were exposed to 267 respondents through an online platform. Learning outcomes were measured with knowledge questions, while satisfaction, purchase intention, and self-efficacy items were measured using 5-point Likert scales.

**Findings** – The study unveiled that showing gestures in an online video lecture for foreign learning purposes results in less satisfaction. Presenting with a happy facial expression also shows smaller knowledge scores as an indication of a negative impact on learning outcome. On the other hand, the present study shows an interaction effect resulted from gestures and facial expressions. Learning outcome, satisfaction, purchase intention, and self-efficacy become prominent when instructor used no gestures with neutral facial expressions, and when instructor used gestures paired with happy facial expressions. The conclusion of this study further clarifies the benefits when using both gestures and happy facial expressions.

**Discussions** – The present study managed to test many supporting arguments about gestures, facial expressions, and motivational statements for language learning purposes in an online setting. Insights from the present study suggest instructors to use gestures considerately. If instructors decided to use metaphorical gestures in a foreign language video lecture, they should also pair them with happy facial expressions. If gestures are not present, using neutral facial expressions would be more beneficial for learning experience.

#### **Keywords**

Foreign language learning, online video lecture, gestures, facial expressions, motivational statements

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#### Introduction

Ever since the pandemic of COVID-19 virus infected the world, the academic industry has pondered upon which ways are best to provide the best possible educational experiences for students and learners. One of the most used and famous medias to deliver these experiences is by video lectures. As it turns out, even before the pandemic happened, researchers have been investing to develop studies surrounding the effectiveness of using videos for educational purposes for the past five years. The results of these studies showed positive encouragement to use videos as materials for different purposes such as study for health sciences (Dieck-Assad, Hinojosa-Olivares, & Colomer-Farrarnos, 2020) and multimedia (Pi, Zhang, Yang, Hu, & Yang, 2019). This is because video is able to accommodate information in a more appealing way, leading to a more impactful effect for students and learners (Zhang, Zhou, Briggs, & Nunamaker, 2006). This makes video lecture becomes an interesting topic to study especially since the pandemic accentuate the importance of online study environment in the future.

The efficiency of video lectures created a big hype in education industry. This is shown by the growth of online courses popularity on the internet. An example of the fast growth of online course businesses is demonstrated by the number of sign-ups in Coursera, as one of the internet's existing online course companies, that surged up to 398% in March and April of 2020 (Sorokanich, 2020). According to its Chief Executive Officer, Jeff Maggioncalda, the platform is expected to have more than 30 million new users by the end of 2020 (Kowitt, 2020). With video lectures getting more popular not only for general public but also for business and government partners as well (Sorokanich, 2020), designing efficient and effective online video lectures becomes a relevant goal.

The pandemic that nudged more people to seek educations from this kind of platforms (Kowitt, 2020), certainly lead to varying approaches and designs of the video lectures published online. Not only that, universities and schools around the world have also started to use more video lectures as one of the ways to provide education to students during COVID-19 pandemic (Koksal, 2020). From a personal experience, not all of online lectures are performed live, there are many instructors who teach with online video lectures that the students can access whenever and wherever they want to provide learning flexibility. This draws the attention to understand how to create the most effective video lectures as their means for educations.

There are different types of video lectures circulating on the internet. One of them is the kind of video lecture that is designed with human presence by showing the instructor's face in the video. Videos with human presence will be the focus of this study as it is believed to promotes learner's affection towards the lessons (Kizilcec, Papadopoulos, & Sritanyaratana, 2014) and offers a sense of social presence which can be lacking in an online learning environment (Wang, Liu, Chen, Wang, & Stein, 2018).

Recently, the challenge for video instructors and content creators is to design the most effective experience possible for learners. How instructor moves and interacts on video lectures become research interests in the past few years as well (e.g. Koumoutsakis, Church, Alibali, Singer, & Ayman-Nolley, 2016; Pi, Hong, & Yang, 2017; Pi, Zhang, Zhu, Xu, Yang, &

Hu, 2019; Pi, Chen, Zhu, Yang, & Hu, 2020). These researches mainly focused on different types of instructor's body language when they are explaining for varying educational contents, some in particular are facial expressions and gestures.

It is no different for video lectures for foreign language learning. Videos, especially with a presence of humans in it, are encouraged to be a learning medium for foreign language learning because it allows learners to follow how native speakers actually use the language within the right context, along with the appropriate actions and gestures (Secules, Herron, & Tomasello, 1992). Canning-Wilson (2000) also supported the same idea that learning language through videos could give knowledge to learners on the authentic use of the language in certain situation because of the examples given by the audiovisual experience.

Despite many published articles and studies about the effectiveness of video lectures, more research is needed (Chen & Wu, 2015; Stull, Fiorella, & Mayer, 2018), especially in the field of language learning. This study has one main research question, which is:

"To what extent do instructor's gestures and facial expressions, also additions of motivational statements in video lectures influence learner's experiences when learning a foreign language?"

Would modifying instructor's body language result in more outstanding learning outcomes? Would it also conceive a higher level of learner's satisfaction? Would it also effect the intention to learn more or purchase the whole course in an online educational setting? The present study aims to investigate the effects of manipulating instructor's body language, in particularly gestures, facial expressions, and additions of motivational statements as a supporting content design inside a video lecture for foreign language learning purposes.

In the following sections of the study, the theoretical reasonings behind this research project is elucidated. There are explanations of the hypothesis, and what they are derived from. Next, the research design and methods are described before presenting the result of this study. After the result is unveiled, a discussion of it is then analyzed in the last section of this study. Additionally, the implications and limitations of the present research are enclosed in the last section as well.

#### **Theoretical Framework**

This study attempts to investigate how human presence can influence learning experience as told by learning outcome as the final goal of learning. The present study is also intended to further configure the effect of human presence on satisfaction, purchase intention, and self-efficacy in an online video lecture. In this section, the reasons for these assumptions would be explained. The positive effect from the presence of humans in educational videos will also be discussed as an introduction to what the present research is inspired by and what aim this research expect to achieve.

# Learning experience as told by learning outcomes, satisfaction, purchase intention, and self-efficacy

There are many ways to measure whether a learning experience is fruitful or not. Aside from analyzing the influence of human presence on learning outcomes as the main goal in a learning experience, other analysis towards human presence would also be conducted. This research assesses satisfaction, purchase intention, and self-efficacy as the affective influence of gestures, facial expressions, and motivational statements in a video lecture.

Learning outcome is often considered as the end goal of a learning experience in many researches (e.g. Macedonia, Müller, & Friederici, 2011; Chen & Wu, 2015; Wang & Antonenko, 2017). Macedonia et al. (2011) chose learning outcome as one of the ways to discover insights for vocabulary acquisitions as a part of foreign language learning experience. Learning outcome becomes an important factor to discuss in a language learning experience to see to what extent the transfer of knowledge occurs. Chen and Wu (2015) reckoned how learning outcome would explain the usability and effectiveness of the learning media, which in this case is a video lecture. Wang and Antonenko (2017) also used learning outcome to represent the result of learner's learning experience for mathematics video lectures.

There are multiple ways to analyze learning outcome. Testing recall and comprehension assessments are the most common to be used in video-based instruction researches (Wang & Antonenko, 2017). The differences between testing recall and comprehension is that when assessing recall, the participants are tested their ability to memorize the information conveyed in the video lecture, while assessing comprehension is useful to see whether the participants understand factual information given in the video (Chen & Wu, 2015). In this research, recall assessment will especially be used to expose an insight on learner's learning experience.

Other goal that educational instructors might actively seek is towards learning satisfaction (Wang et al., 2018). What makes satisfaction interesting to learn for an online learning study is the fact that it determines learner's future intention with a similar type of platform (Arbaugh, 2000). Arbaugh (2000) noted that if a learner is dissatisfied, then they would be most likely stop learning from a similar course, or even worse: from the type of platform all together. It is also discussed how an online learning platform, in particular, needs to consider learner's satisfaction because of its technological characteristics that form an impression towards the learners.

As mentioned before, Arbaugh (2000) posited a condition where satisfaction would lead to learner's future decisions. One of learner's decisions in an online learning platform is whether they would continue with the course—by purchasing them—or not. Purchase intention then becomes the next focal point for an online learning platform, especially for massive open online courses. Prior to own experience, this type of courses would offer a free trial session, or a preview to one of their "episodes" for the learning experience to tease learners what they would experience within the course. Learner's purchase intention then becomes one factor that is interesting to study in an online learning environment.

Self-efficacy becomes important when it comes to online learning platform as it is considered to be one of the factors influencing an engaging experience when learning online (Formanek, Buxner, Impey, & Wenger, 2019). This is because self-efficacy has been closely associated with educational confidence (Bandura, 1986). If a learner's self-efficacy to learn is high, they would be more confident about their competence to proceed with the learning process. As self-efficacy is known for being related to academic confidence, it is logical to analyze it in an online video lecture context for the purpose of learning a foreign language.

A lot of self-efficacy focused studies that cover online learning concepts usually analyze learner's perceived self-efficacy towards the usage of the new technology (e.g. Sun & Rogers, 2020). The present study aims to conceptualize self-efficacy as a slightly different variable. In this study, the variable "self-efficacy" would be proposed to know whether an exposure to the presence of different factors would influence learner's belief to learn a foreign language successfully (Bandura, 1986) compared to the lack of them.

#### The presence of humans in educational videos

Human presence is notorious in many researches about educational video lectures. The presence of human in these studies is represented in a varying form. Van Wermeskerken, Ravensbergen, & van Gog (2018)'s study portrayed the human presence with a demonstration acted by the instructor in class, while a study by Pi et al. (2017) focused more on mere presentations by the instructor. Despite the differences between these interpretations, the goal of both studies is the same which is to see whether appearance of the instructor in the video distinctly influence learning experience or not.

Clark and Mayer (2011) supported the idea of having a "visible guide", which can be in a form of human presence, to be incorporated in video lectures. They posited that the presence of a guide would provide the activation of social presence that leads to a more effective learning experience. Kizilcec et al. (2014) explained how video lectures with the presence of human are favored over the ones without as learners recognized them as more educational. Furthermore, van Gog, Verveer, & Verveer (2014) also concluded on the recommendation of having human with their faces in a video lecture for example-based learning.

One of the concerns when incorporating human presence in a video lecture is how it can be an additional cognitive load for learners (Homer, Plass, & Blake, 2008). Sweller, Ayres, and Kalyuga (2011) explained the two main categories of cognitive load that are transferred into learner's working memory in a learning experience, which are intrinsic and extraneous cognitive load. These two types of cognitive loads have their own roles in the working memory. In the context of foreign language learning, learners in a beginner level would receive simpler understandings and context of the language, whereas advanced learners would demand a more complex information and discussions surrounding the language. Based on the cognitive load theory, this kind of information is categorized into intrinsic cognitive loads. Learners in the beginner levels would receive fewer intrinsic cognitive loads than the ones in the more advanced levels. On the other hand, the presentation of audiovisual aids in educational settings is categorized into extraneous cognitive load, which are the kind of cognitive loads that are applicable to be controlled by instruction designers. Extraneous cognitive loads are the weight for learners to receive how certain information is presented. In this case, it might be how the presentation slides are designed or how the instructor is dressed. By this definition, human presence can be an additional extraneous cognitive load for learners.

Instead of intrinsic cognitive loads, focusing more on extraneous cognitive loads is superior when designing video lectures (Sweller, 1994). Extraneous cognitive loads are more controllable by designers. No matter how heavy intrinsic cognitive loads are in the video lecture, designers could manage the amount of extraneous cognitive load to deliver the best possible experience for learners. Sweller et al. (2011) emphasized how important it is to guarantee that the amount of extraneous cognitive load does not overwhelm learner's working memory.

According to Homer et al. (2008), based on the cognitive load theory by Sweller (1994), designing a method to present essential information (e.g. inserting sounds and images to decorate the video lectures) in a video lecture would prompt extraneous cognitive load. However, they also argued that these types of content add more positive impacts on learner's learning outcome despite them adding extraneous cognitive load. As it turns out, these complementary contents provide a sense of social presence that makes the lecture becomes more engaging, and thus eventually lead to the increase of learner's ability to remember the information conveyed during the lecture better (Wang et al., 2018).

As these video lectures are presented online, there is an apprehension to achieve the right level of interactions between the instructor and learners (Borup, West, & Graham, 2012). Different from face-to-face classes, learning foreign language in an online setting reduces learner's ability to communicate freely with the instructor. Thompson (1997) explained that learners who failed to be satisfied with the interaction aspect of the class would not have the desire to continue learning the course, thus it becomes important to enhance the connection between instructor and learners when learning foreign languages in online settings. Providing learners with a greater capacity to communicate with their instructor in a video lecture would also reduce the feeling of distances, more akin to a face-to-face session (Borup et al., 2012; Collins & Halverson, 2018).

The next challenge for designers and foreign language instructors is to study the effectivity of the different kinds of human presence in a video lecture. Previous researchers highlighted the positive effect of using gestures (e.g. Church, Ayman-Nolley, & Mahootian, 2004; Macedonia et al., 2011; Koumoutsakis et al., 2016; Pi et al., 2017; Kushch, Igualada, & Prieto, 2018; Pi, Zhang, Zhu et al., 2019) and facial expressions (e. g. Wang et al., 2018; Pi et al., 2020) in video lectures for educational purposes. Thus, in this study, it would be tested further how impactful instructor's gestures and facial expressions are in a video lecture. Moreover, this study would also like to investigate whether additional sense of social presence

(Gunawardena, 1995) from motivational statements would impact experience for foreign language learning.

#### Impact of gestures

The circumstances of foreign language learning, which result in many methods to consider, encourage instructors on online video lectures to behave a certain way to ease learner's experience. This means, extraneous cognitive load in video lectures content for foreign language learning purposes should be minimized as much as possible (Pi, Zhang, Yang et al., 2019). One of the ways to help learners process information easier is by gesturing while instructor explains the content of what is being taught (Ouwehand, van Gog, & Paas, 2015). Instructors can make use of their body to create gestures that support the meaning of the foreign language in the video lectures.

When teaching language, instructors would want to best explain the meaning of new words to learners. One of the ways to best express a new word meaning to learners who are not yet familiar with it is by using gestures. There are mainly four different types of gestures that are consciously and unconsciously used by instructors, which are deictic, iconic, beat, and metaphoric (McNeill, 1992). Deictic gestures are used by instructors to usually point out where a certain word might be located at. Deictic gestures are often used to direct learner's attention to where the important information might be loaded at. Beat gestures are usually done to mark certain words or phrases, these gestures do not transfer much meaning to the word that comes with them. On the other hand, iconic gestures are used to display the resemblance of the object or information that are being depicted. Similar to iconic gestures, metaphoric gestures are used to convey the meaning of certain words by signaling abstract movements that best represent them. This assumes that metaphoric gestures would help learners understand novel words from a foreign language more effectively.

Koumoutsakis et al. (2016) conducted an experimental research on young children who studied mathematics. They tested whether having gestures on their explanations would make any difference in learner's experience when studying face-to-face or through video lecture. The result shows that learning outcome is impacted significantly when the learners are exposed to gestures whether they learn face-to-face or through video lecture. Church et al. (2004) also concluded that learning accompanied by gestures might improve learning outcome for bilingual education classes. This study was also an experimental research following a video instruction in English with or without gestures to both English-speaking and Spanish-speaking students. The end result showed that gestures indeed helped children understand more about a concept even when the instruction comes with a foreign language. Both of these studies did not specify the type of gestures the instructors used. As both studies show that creating gestures in an online video lecture indeed help children, it can be assumed that a similar result might be concluded for adults as well.

One of research studies that specified the type of gestures the instructor used in the stimulus is by Kushch et al. (2018). In this study, Kushch et al. (2018) tested university students with a two-by-two experimental model. One of the conditions they tested was the usage of beat gestures while teaching new Russian words in each of their context sentences. They then summarized that beat gestures would only effect learning outcome when they are also

accompanied by stressed features such as intonations in instructor's speech. Another study about the impact of gestures on learning is conducted by Pi et al. (2020), where they tested some experimental conditions to leaners. The stimuli of the study were recorded video lectures that showed instructors with or without deictic gestures. The research concluded that learning outcome indeed became more prominent when instructors used deictic gestures in their video lecture. From these researches above, it shows that different types of gestures would generate different results as well.

For language learning purposes, deictic and, more importantly, beat gestures are often used by learners instead of instructors to help them convey what they wish to say (Morett, 2014). Although the other two types of gestures also help learners and instructors to communicate, encode, and recall novel foreign language words, beat gestures are more prominent to be used in the social process of language learning. The current research purposes to focus on the representational gestures, which are metaphoric and iconic gestures, as an aid for the instructor to give more coherent experience during their online study session.

All of the mentioned gestures are often studied from the perspective of learners and how their gestures contribute to their learning experiences (Gullberg, 2006). However, in the present study, the environmental setting is online, which is why gestures produced by learners would be irrelevant. Several studies have shown that Instructors who use gestures while explaining is believed to improve learning outcome because it stimulates learners to think about the information presented by the instructor (Goldin-Meadow & Beilock, 2010).

Because the target in a language learning lecture is to have learners comprehend the concept of the language, the present study will only test representational gestures to help learners understand the meaning of newly introduced foreign words. Macedonia et al. (2011) conducted an experimental study specifically for iconic gestures as the representational gestures. The participants, who were university students, were exposed to four different experimental conditions. The result showed that iconic gestures are superior to meaningless gestures to help learners memorize new foreign words. Although iconic gestures have been confirmed to be positively effecting language learning process (Macedonia et al., 2011), it is less likely for instructor to produce only iconic gestures in a foreign language learning setting. By experience, foreign language instructors in massive open online courses would use more metaphoric gestures as the representational gestures are hard to be produced when describing verbs. To elicit a real online study experience, this research expects to see the effect of metaphoric gestures in a video lecture for foreign language learning.

In the context of learning foreign language, it is especially encouraged to facilitate learners with gestures as they can learn the meaning of new words and vocabularies through the specific gestures demonstrated by the instructor (Goldin-Meadow, 2014), especially for beginners (Morett, 2014). Research by Church et al. (2004) also supported the fact that learners would more likely show greater learning outcome with instruction that has gestures compared to none at all. As the current study wants to support learners to understand meaning, representational gestures—in this case metaphoric gestures—would be used as they describe semantic meanings (McNeill, 1992).

Furthermore, Hostetter and Busch (2006) indicated that designing the presence of humans in the media of learning as similar to how it usually is on face-to-face session would enhance learner's satisfaction. In a face-to-face class, instructors would spontaneously make gestures to express themselves. To make the online video lectures resemble the face-to-face sessions, it is only natural to add gestures as a part of instructor's body language as well. Not only that, using gestures also creates a sense of "realness" in a video lecture. Patterson (2019) added that it also improves the feeling of connectedness between the instructor and learners. In an e-commerce context, the sense of "realness" has shown positive influence on purchase intentions (Tong, 2017).

In addition, as self-efficacy has been closely associated with academic confidence (Bandura, 1986), it would be interesting to see how learners respond to gestures in video lectures. According to Fiorella, Stull, Kuhlmann, and Mayer (2019), observing other human performing movements—in this case gesturing—would benefit their motivation and confidence, and in turn resulting in a higher self-efficacy. They further explained that this can happen because of the contiguity principle. The contiguity principle describes that a learning experience can be more effective by helping learners to process information with a supplementary graphics given at the same time (Clark & Mayer, 2011). This suggests that gestures, as the supplementary graphics, would promote academic confidence for learners.

Based on these arguments, it can be hypothesized that:

H1a: Showing gestures in video lecture presentation for foreign language learning would generate more positive impact on learning outcome than showing no gestures at all.
H1b: Showing gestures in video lecture presentation for foreign language learning would generate more positive impact on learner's satisfaction than showing no gestures at all.
H1c: Showing gestures in video lecture presentation for foreign language learning would generate more positive impact on learner's satisfaction than showing no gestures at all.
H1c: Showing gestures in video lecture presentation for foreign language learning would generate more positive impact on purchase intentions than showing no gestures at all.
H1d: Showing gestures in video lecture presentation for foreign language learning would generate more positive impact on purchase intentions than showing no gestures at all.

#### Instructor's facial expressions

Instructor's facial expression is one of the essential nonverbal way of communicating with learners through indirect screen that enhances learner's perceived presence (Borup et al., 2012). Becker, Goetz, Morger, and Ranellucci (2014) expressed the notion that it is expected for instructors to manage their facial expressions in video lectures as they are relevant to how learner might receive the information.

Given the circumstances where online video lectures form distances between the instructor and learners, being taught by instructors that expresses emotions influences learner's emotional response (Mottet, Richmond, McCroskey, 2006). How learners feel towards the course would then benefit for their learning outcome (Wang et al., 2018). Thus, it is expected that online foreign language learners would feel more at ease about the course when the instructor shows positive facial expressions because what is displayed on screen would emanate a positive vibe during the course. Borup et al. (2012) conducted an interview research study to gain insights as to what factors impact learning experience in a video lecture. The interview was done with 18 students from elementary and secondary schools. The result indicated that there were indeed emotional factors that contributed in the participants' learning experience. One of those factors was the natural capacity for learners to perceive instructor's feelings and energy level, which can be transferred through facial expressions. This assumes that the same effect of facial expressions might be present for adults and the general public who are learning foreign language as well.

Although there are still a limited amount of research surrounding the effect of facial expressions in a video lecture for learning experience, a couple of researches have emerged in recent years. Wang et al. (2018) conducted a study using experimental design to see whether a heightened level of expressiveness instead of neutral expression would generate different impacts for learning outcome and satisfaction. The participants of this research were university students. Although there were not many participants took part in this study, the conclusion still showed a significant result over the heightened facial expressions. Pi et al. (2020) also noted that there was a difference in learning outcome of learners who are taught by instructor with happy facial expressions and those with neutral facial expressions. They conducted another experimental research for university student to see whether facial expressions, in particular happy and neutral facial expressions, would have any impacts on learning outcome. The result indicated that instructor who displayed happy expressions influences learning outcome more positively. In the present study, it would be wise to specify the kind of facial expressions in order to avoid confusions and ambiguity. The current research study would purpose the same conceptualization of facial expressions as written by Pi et al. (2020).

Instructors with happy facial expressions might be perceived as friendlier to learners, this causes improvement on the interactivity between instructors and learners (Wang et al., 2018). Happy facial expressions improve the interactive side of video lectures, thus resulting in learner's satisfaction (Arbaugh, 2000). Not only enhancing learning outcome and satisfaction, Wang et al. (2018) also mentioned how happy facial expressions would result in motivations for leaners that helps improve learner's intention to learn. Furthermore, Bransford, Brown, and Cocking (1999) discussed how boosting motivation would affect learner's intention to spend more time on the course. It is then hypothesized that a happy facial expression would positively influence the intent to purchase a course.

Moreover, one of the ways to ignite self-confidence in someone is by influencing a positive emotional state (Bandura, 1997). Inducing positive emotions by managing instructor's facial expressions would benefit on learner's self-confidence and motivations (Um, Plass, Hayward, & Homer, 2011). This assumes that presenting information to learners with certain facial expressions would lead to more learning self-efficacy for learners.

Thus, the following hypothesis is derived:

H2a: Happy facial expressions in video lecture presentation for foreign language learning would generate more positive impact on learning outcome than neutral facial expressions.
H2b: Happy facial expressions in video lecture presentation for foreign language learning would generate more positive impact on learners' satisfaction than neutral facial expressions.

H2c: Happy facial expressions in video lecture presentation for foreign language learning would generate more positive impact on **purchase intentions** than neutral facial expressions. H2d: Happy facial expressions in video lecture presentation for foreign language learning would generate more positive impact on learner's **self-efficacy** than neutral facial expressions.

#### **Motivational statements**

Aside from using gestures to express meaning and facial expressions to convey emotions as nonverbal ways (Borup et al., 2012) to motivate learners in a foreign language learning course (Wang et al., 2018; Patterson, 2019), motivational statements can also be used to motivate learners verbally. One of the challenges when transferring information online is the ability to transmit motivational energy in an online learning environment. Zhu, Herring, and Bonk (2019) posited that they used positive encouragements to influence instructor's perceived social presence by the learners in this type of environment. Furthermore, it is also proven that learners who are exposed to cues that are motivational to them would have greater learning experience (Pi et al., 2020).

Offering motivational statements to learners might affect the how the learners perceive the information during the learning process. Jo, Yang, Kim, and Lim (2019) concluded that video lecture that consists of emotional words actually promote better memorization of said words. Motivational statements possess emotional words (e.g. "You would <u>ace</u> this!" or "The next session would be <u>easy</u> for you", and so on), and this might trigger the same effect of Jo et al. (2019)'s research. Motivational statements are then hypothesized to be beneficial if applied to video lectures for foreign language learning.

The interview conducted by Borup et al. (2012) also implied that there is a significant effect of the feeling of being supported towards learning experience. They included an excerpt where one of the participants commented to positively affected by the instructor's "You can do it!" message. Furthermore, the feeling of being supported by the instructor made the participants feel like they can rely on the instructor, which created persistence out of them. This supports the hypotheses where motivational statements, such as "You can do it!" would have an impact on learner's learning outcome and improve their intention to continue learning the course or purchase the whole course if they are within a trial session.

Receiving motivational statements might also increases leaner's sense of social presence during the course as what the instructor says can be perceived as a friendly gesture. Beege, Schneider, Nebel, & Rey (2017) concluded a research that said there was evidence for learners to generate more retention when they feel addressed by the instructor. Although having eye contact in a video lecture is proven to leave an impression of being addressed (Beege et al., 2017), another way to verbally address someone in a video media is by talking to the viewers using the word "you". Conveying motivational statements, especially with the word "you" in it, might then be an important factor to foster learning a foreign language.

Apart from that, the feeling of being addressed also boosts a better sense of social presence (Beege et al., 2017), which means it leaves greater impact on learner's satisfaction (Hostetter & Busch, 2006). When satisfaction of the learning environment is achieved, there is a better

chance for learners to feel the intention to learn more about the subject (Wang et al., 2018), which after a trial session of an online course would have to be purchasing the entire course.

Furthermore, conveying motivational statements can facilitate and enhance positive emotions (Um et al., 2011). Positive emotions that are aroused by these statements are assumed to be influential towards learner's learning self-efficacy (Huang, Liu, Lai, & Liu, 2016). According to Bandura (1997), social persuasion is one of the sources that encourages self-efficacy. One of the roles when conveying these motivational statements is to enact social persuasion to the learners in an online learning environment. Thus, it can be assumed that motivational statements would have an effect on learning self-efficacy.

H3a: Mentioning **motivational statements** in video lecture presentation for foreign language learning would generate more positive impact on learners' **learning outcome**.

H3b: Mentioning motivational statements in video lecture presentation for foreign language learning would generate more positive impact on satisfaction.

H3c: Mentioning **motivational statements** in video lecture presentation for foreign language learning would generate more positive impact on **purchase intentions**.

**H3d**: Mentioning **motivational statements** in video lecture presentation for foreign language learning would generate more positive impact on learner's **self-efficacy**.

#### Study on interaction effects

In addition to studies about how the individuality of each of the factors (gestures, facial expressions, and motivational statements) impacts learning experience, there are a couple of researches who analyzed the interaction effect between using gestures and managing facial expressions in a learning session. Mayer and DaPra (2012) conducted an experimental study to test out onscreen agents (or a persona) to have human-like gestures and facial expressions in a video lecture. They later concluded that using gestures and facial expressions by a persona effected positively to learning performance. However, the gestures and facial expressions analyzed in the study were not done by a real-life instructor. In the present study, an interaction effect of the same factors would be tested using a real-life instructor.

A study conducted by Sueyoshi and Hardison (2005) concluded that to fully express emotions, instructors should have a harmonized gestures and facial cues while explaining the course to foreign language learners. The participants of their research were 42 low-intermediate and advanced foreign language learners who were exposed randomly to three different conditions, including the one with both gesture and facial cues. The result showed that in foreign language learning, those who were still in beginner level would prefer for lectures with gestures and facial cues in it. However, facial cues in this research were not conceptualized as happy nor neutral facial expressions as intended in the present research. Later on, Safarali and Hamidi (2012) also conducted a similar study to 60 advanced foreign language learners. Unlike Sueyoshi and Hardison (2005), Safarali and Hamidi (2012) conceptualized facial cues almost similar to the facial expressions that the current study expects to proceed with (e.g. smiling to show happiness, wrinkling nose to show disgust, etc.). The end result showed a significant result when using both gestures and facial expressions to teach adult foreign language learners.

H4: Video lecture presentations with gestures and facial expressions in them would influence more positively on (a) learning outcome, (b) satisfaction, (c) purchase intention, and (d) self-efficacy.

Apart from these researches above, there were no studies testing on the interaction effect of using gestures and having motivational statements in a video lecture. However, research by Burop et al. (2012) indicated that using supporting messages and enhancing the sense of belonging in the course using nonverbal communication, such as gestures and facial expressions, as factors that influence learning experience, specifically for asynchronous medias such as the video lectures in the present study. Three of them in particular are instructor's movements, facial expressions, and expressions of motivational statements. These three factors are explained to act as "social cues" that engage social presence in an online video lecture.

Thus, the present research expects to see the interaction effect of using gestures, managing facial expressions, and conveying motivational statements in foreign language learning environment.

H5: Video lecture presentation with gestures, facial expressions, and motivational statements in it would influence more positively on (a) learning outcome, (b) satisfaction, (c) purchase intention, and (d) self-efficacy.

An illustration of the research design is shown in Figure 1 below.

#### Figure 1



#### Research Design

#### Method

#### **Research design**

For the present research, an experimental study was implemented, specifically with two by two by two (2x2x2) experimental research design. The present research experiment attempts to investigate the effect of two gestures conditions (the use of gestures versus the lack of gestures), two types of facial expressions (happy facial expression versus neutral facial expression), and two conditions of motivational statements (the presence versus no presence of motivational statements).

Eight conditions of the experiments are explained in **Table 1**. These eight conditions were fairly and randomly distributed across all participants to seek out the best outcome for this study.

#### Table 1

Condition	Gestures (Yes/No)	Facial expressions (Happy/Neutral)	Motivational statements (Yes/No)
А	No	Neutral	No
В	No	Нарру	No
С	Yes	Neutral	No
D	Yes	Нарру	No
E	No	Neutral	Yes
F	No	Нарру	Yes
G	Yes	Neutral	Yes
Н	Yes	Нарру	Yes

#### Eight Conditions of the Present Study

#### **Research procedure**

As the study aims to get insights for the purpose of foreign language learning, the stimulus is created as a video lecture to learn a foreign language. The foreign language that was tested in this research was Dutch with a basic instruction in Bahasa Indonesia as the participant's native language. Dutch is not a common language in Indonesia, with this in mind, it would be easier to get participants who are not yet familiar with the language. This is in line with the purpose of getting participants in the beginner level of acquiring the foreign language. The instructor is a bilingual Bahasa Indonesia native speaker who also speaks Dutch.

The experimental design of the present study is straightforward. To broaden the possibility of getting variety in ages, it would be more effective and efficient to conduct the following experiment in an online setting. As the study was also done during a pandemic season, it was wiser to have online questionnaire as a platform to collect data from participants.

The participants were expected to watch one of the eight different stimuli, which was a video lecture. Before watching the stimulus, they were given an explanation that they would experience a hypothetical Dutch language course in an online environment. They were told that they were having a "free-trial" viewing of a course that would have other sessions beside the video that they would be watching. In order to gain access to the other sessions, they would need to purchase the course. This was done to make sure that the measurement items for purchase intention would be relevant to them. After being exposed to the stimulus, the participants filled in an online questionnaire to measure their level of satisfaction, purchase intentions, and self-efficacy. Before that, they were also tested by a set of questions to measure their learning outcome. In average, the participants spent around 20 minutes to finish the session.

#### **Research stimuli**

The research stimulus consisted of a set of presentation slides and a video of the instructor with manipulations to her gestures, facial expressions, or motivational statements. All of the video lectures for each condition lasted for approximately 6 to 8 minutes, introducing basic Dutch words. There are differences in the timestamps, because the instructor in the video spent more time for certain conditions (e.g., additions of motivational statements caused longer timestamp and presenting with happy facial expressions generated faster speech).

To avoid errors in the stimulus, there was only one instructor appointed for all of the eight different video lectures. Aside from that, the instructor also wore identical type of clothing, the same hairstyle, and background. Research by Beege et al. (2017) showed that there was no influence of the proximity of the instructors on the video on learning experience. Furthermore, Chen and Wu (2015) discussed how picture-in-picture presentation videos generate less cognitive load than voice-over video presentations. Thus, in the present research all of the video lectures were edited in a picture-in-picture presentation style with a synchronized video of the instructor explaining about the material of the presentation in the upper right corner of the video lectures. The position of the instructor videos was edited on the same place for every stimulus.

In the video lecture, 20 Dutch words were presented as the main information. Gestures that were used for the stimulus were designed according to the definition of "metaphoric" gestures as written by McNeill (1992). In the conditions where the instructor used no gestures, the words were only read out loud by the instructor. The list of words and accompanying gestures are attached in **Appendix I**. The differences between stimuli with gestures and without gestures are illustrated in **Figure 2** and **Figure 3**. For the condition where the instructor used happy facial expressions, the instructor's intonation also became cheerful and lively. On the other hand, when the instructor used neutral face, the presentation was more stagnant.

#### Figure 2

Stimuli Showing No Gestures with Neutral Face (Left) and Happy Face (Right)



#### Figure 3

Stimuli Showing Gestures with Neutral Face (Left) and Happy Face (Right)



For motivational statements, the purpose of the variable is to make the participants feel addressed, that is why the statements would revolve to the word "you" in them. There was a total of nine motivational statements for the stimulus. All of the nine sentences can be seen in **Appendix II**. In addition, the motivational statements used in the present study were created with a reference to the ARCS Model of motivation by Keller (1987). This is because Keller (1987) argued that before motivating learners, their beliefs that the materials are relevant and related to them are important to be established. The ARCS Model is also proven to stimulate curiosities and interests which will then motivate people to learn (Keller, 2010). Using the ARCS Model to the creation of the motivational statements also offers a systemic approach (Keller 1987) of how the statements are conveyed in an online video lecture setting.

All of the stimulus materials including the video lecture's scripts, motivational statements, and measurement items were created and commenced in English, which were then translated to Bahasa Indonesia using back-translation method by two different native Indonesians who have the same level of English skills. This method was done to provide verification of the language used and ensure the same meaning from the translated statements.

#### Measures for dependent variables

There are four dependent variables to be measured in the present study, which are learning outcome, satisfaction, purchase intention, and self-efficacy. Two types of measurements were used in this study. A knowledge test was used for learning outcome, while statements with 5-point Likert scales were applied to measure the rest of the dependent variables.

The test for learning outcomes consisted of five open recall questions and five multiple-choice questions. Open recall here means participants would need to write down the answers to the questions in the test. For the multiple-choice questions, the participants were given four choices. For a fair test between their comprehension from Bahasa Indonesia to Dutch and vice versa, both kind of questions were divided evenly. Four questions were created to ask translations from Dutch to Bahasa Indonesia. Another four questions were recall tests with images (e.g. "What is the picture above shows you?"). The rest of the questions were another translation problem, only this time, the questions ask translations from Bahasa Indonesia to Dutch. The complete questions for the test are available in **Appendix III.** 

As there were open recall questions, there might be possibility of participants to answer the questions partially right (i.e. answers with typographical errors). The scoring of the test was designed to handle this matter. A correct answer was given one point, a wrong answer was given zero point, and a partially right answer was given 0.5 point.

For other dependent variables which are satisfaction, purchase intention, and self-efficacy, measurements were done by a questionnaire. To make the questionnaire items simpler and shorter, an explanation what the items were referring to was included in the beginning of each measuring block in the questionnaire. The statement acted as a guide and a reminder for the participants that all of the items presented to them were based on their experience of watching the stimulus. This way, reference for the stimulus can be written as "videos in **this** format" through the rest of the questionnaire.

There are several ways to measure satisfaction. There are four statements that can be used to measure satisfaction for a hypothetical experience that are formulated by Homburg, Koschate, and Hoyer (2005). These statements are supportive to this research because the stimulus in this research are for a hypothetical experience.

In educational setting, Arbaugh (2000) conducted a research to measure student satisfaction after an experience of an online course. The current study will also use some of the former study's questionnaire items to measure satisfaction, but with adjustments. This measurement was also used several times in other research as well (e.g. Wang et al., 2018). All of the statements will be measure with a five-point Likert scale, with 1 meaning strongly disagree and 5 meaning strongly agree. One of the measuring items will have different scale (very dissatisfied and very satisfied) as an adjustment to the statement. These items will be randomly generated, with three of them being reversed statements to reduce the probability of answering the same point on the scale. The final questionnaire items for "satisfaction" are presented in **Table 2**.

#### Table 2

#### Questionnaire Items for "Satisfaction"

Facet	No	Statements	Source	Cronbach's Alpha
Satisfaction	1	All in all, I would be satisfied with a Dutch course using videos in this format.	Homburg et al. (2005)	0.85
	2	A Dutch course using videos in this format would meet my expectations.		
	3	The scenario where I learn Dutch using videos in this format, is <b>not</b> an ideal language learning course. (Reversed)		
	4	If I had an opportunity to take an entire course to learn Dutch using videos in this format, I would gladly do so.	Arbaugh (2000)	
	5	Conducting the course using videos in this format would improve the quality of the course compared to other language learning platforms.		
	6	Conducting the course using videos in this format would make it <b>difficult</b> to learn Dutch than other language learning platforms. (Reversed)	-	
	7	I feel that conducting this course using videos in this format would <b>not</b> serve my needs well. (Reversed)		

Aside from measuring "satisfaction" with the questionnaire, "purchase intentions" was also measured the same way. For uniformity, the measurement for this variable was also done with a 5-point Likert scale, with 1 meaning strongly disagree and 5 meaning strongly agree. There was one measuring item that was in a form of an open question to specify how much the participants would be willing to spend when purchasing intention occurs. Full questionnaire items for "purchase intention" can be seen in **Table 3**.

## Table 3

Facet	No	Statements	Source	Cronbach's Alpha	
Purchase intentions	1	I would consider making a purchase of a series of online courses that uses videos with his format to learn Dutch.	Rodgers (2004)	0.84	
	2	I would like to have more information on the online course that uses videos with this format to learn Dutch.			
	3	I am <b>not</b> interested by an online course that use videos with this format to learn Dutch. (Reversed)			
	4	My willingness to buy the online courses that use videos with this format to learn Dutch is high.	Dodds, Monroe, & Grewal (1991)		
	5	The probability that I would consider buying an online course that uses a video with this format to learn Dutch is <b>Iow</b> . (Reversed)	Dodds et al. (1991); Grewal, Monroe, & Krishnan (1998); Hardesty, Carlson, & Bearden (2002)		
	6	If I were going to buy an online course to learn Dutch, there is a high probability I would buy the one that has the same format as the video I just watched.	Grewal et al. (1998)		
	7	Imagine if a Dutch online course, that uses videos with this format, is offering an introduction to basic Dutch course. The total videos in that program is 10 videos, each spanning the duration of one hour.	Dodds et al. (1991); Hardesty et al. (2002)	Not applicable	
		If I were going to buy this online course, how much would I consider paying for one set (10 videos) of this online course?			
		Please give a numerical answer without any punctuation marks, and in rupiah.			

Questionnaire Items for "Purchase intentions"

For the variable "self-efficacy", five validated items were used. These items were also measured using five-point Likert scale, with 1 meaning strongly disagree and 5 meaning strongly agree, to ensure consistency. The present research used five-point Likert scale to follow the originality of the items developed by Jones (1986) and Meuter, Bitner, Ostrom, & Brown (2005). All items to measure "self-efficacy" can be seen below in **Table 4**.

#### Table 4

Facet	No	Statements	Source			Cronbach's
						Alpha
Self-	1	After watching the video, I feel that	Jones	(1986);		0.79
efficacy		I am fully capable of learning	Meuter	et	al.	
		Dutch.	(2005)			
	2	After watching the video, I am not				
		confident in my ability to learn				
		Dutch. (Reversed)				
	3	After watching the video, I believe				
		learning Dutch is well within the				
		scope of my abilities.				
	4	After watching the video, I do not				
		feel I am qualified for the task of				
		learning Dutch. (Reversed)				
	5	Watching the video with this				
		format increases my confidence				
		that I will be able to successfully				
		learn Dutch.				

Questionnaire Items for "Self-efficacy"

A reliability test was conducted before analyzing the collected data statistically. This is to make sure that the scales used as the measuring items for the dependent variables are consistent. A reliability test examines the Cronbach's alpha values of each of the dependent variables tested in this experiment, which are "learning outcome", "satisfaction", "purchase intention", and "self-efficacy. All Cronbach's Alpha values exceeded more than 0.7 which tested for their reliability. For the variable "learning outcome", the Cronbach's Alpha value is 0.81.

#### **Participants**

This research focused on participants from a homogeneous location, which was Indonesia. All participants were limited to Indonesians who spoke natively in Bahasa Indonesia. They knew as little as possible about Dutch language, as this study would like to only test those who are in the beginner level of acquiring the foreign language. Apart from that, there was no restriction on age or gender of the participants.

There was a total of 268 respondents who completed the questionnaires. Out of 268 participants, one participant is found to be an outlier and was omitted. The distribution for the participant's gender, Dutch skills, and education level is presented in **Table 5** below.

# Table 5

# Distribution of the Participants

Conditions	Gestures		No	No	Yes	Yes	Νο	No	Yes	Yes	Total	n
Conditionio	Facial expressio	ns	Neutral	Happy	Neutral	Нарру	Neutral	Happy	Neutral	Happy	_	٣
	Motivational stat	tements	No	No	No	No	Yes	Yes	Yes	Yes	-	
N			32	36	35	31	32	34	33	34	267	-
Genders	Male	Frequency	10	17	8	8	13	12	13	14	95	
		Percentage	32.3%	48.6%	22.9%	25.8%	40.6%	35.3%	39.4%	41.2%	35.8%	-
	Female	Frequency	21	18	27	23	19	22	20	20	170	- 0.38
		Percentage	67.7%	51.4%	77.1%	74.2%	59.4%	64.7%	60.6%	58.8%	64.2%	-
Dutch	Know nothing	Frequency	28	24	25	16	25	24	23	25	190	
skills		Percentage	87.5%	66.7%	71.4%	51.6%	78.1%	70.6%	69.7%	73.5%	71.2%	- 0.12
	Know a few	Frequency	4	12	10	15	7	10	10	9	77	- 0.13
	words	Percentage	12.5%	33.3%	28.6%	48.4%	21.9%	29.4%	30.3%	26.5%	28.8%	-
Education	Higher	Frequency	5	6	9	7	8	6	7	10	58	
level	secondary	Percentage	15.6%	16.7%	25.7%	22.6%	25.0%	17.6%	21.2%	29.4%	21.7%	-
	schools											
	Diploma	Frequency	1	3	4	2	0	3	2	4	19	_
	holders	Percentage	3.1%	8.3%	11.4%	6.5%	0.0%	8.8%	6.1%	11.8%	7.1%	_
	Bachelor's	Frequency	19	18	18	18	20	22	18	15	149	-
	degree	Percentage	59.4%	50.0%	51.4%	58.1%	62.5%	64.7%	54.5%	44.1%	55.4%	0.76
	holders											_
	Master's	Frequency	5	9	4	4	3	2	6	4	37	
	degree	Percentage	15.6%	25.0%	11.4%	12.9%	9.4%	5.9%	18.2%	11.4%	13.9%	
	holders											_
	Doctors or	Frequency	2	0	0	0	1	1	0	1	5	_
	PhD holders	Percentage	6.3%	0.0%	0.0%	0.0%	3.1%	2.9%	0.0%	2.9%	1.9%	
Age	Mean		35.34	33.25	31.06	30.52	34	32.15	32.55	33.91	35.34	_ 0 71
	Standard devia	tion	12.17	11.51	9.91	10.76	12.09	10.87	11.22	11.78	12.17	0.71

When it comes to gender, there are a total of two respondents who did not give any information on their genders out of 267 respondents. Other than gender, other variables were all answered by the participants. Not only as a way to gather the information of their language skill, a question of the participant's "Dutch skill" also acted as a filter question to make sure people who are in a more advanced level would not participate in this research. The participant's education level was also gathered in the beginning of the experiment to provide more background information of the participants.

To make sure the gender distribution, Dutch skill distribution, and educational level distribution within sample were balanced and not influencing the results of the experiment, chi-square tests were done using crosstabs. The crosstabs showed that "Gender" (p=0.38), "Dutch skills" (p=0.13), and "education level" (p=0.76) were not significant with the eight conditions as the factor as all of the *p*-value of these variables are above 0.05. With this data, it can be summarized that gender distribution, Dutch skills distribution, and educational level distribution are equally proportioned for each of the eight experimental conditions.

Other than the three variables above, age was also asked as an open question. Unlike gender, which was optional to be answered, giving information regarding age is mandatory because no participants under the age of 18 should participate. The spread of age varied from 19 to 59 years old. Even though the age range was high, the mean age for each experimental condition did not show a large variative pattern as shown in **Table 5**. The means of participants' age did not differ much from each other.

To make sure that the age was fairly distributed to all of the 8 experimental conditions, an analysis for variance (ANOVA) with a post hoc test for "age" was executed. The post hoc test was intended to see condition groups were significantly different, if there were any mean differences. The ANOVA result for "Age" (p=0.71) indicates that age is not a significant factor in this experiment and thus can be concluded that when the participants are categorized by age, they are considered to be evenly distributed for all of the conditions. With this result, the post hoc test can be then disregarded.

#### Analysis

The experiment was tested using multivariate analysis of variance (MANOVA) for "satisfaction", "purchase intention", and "self-efficacy". For the variable "learning outcome", a separate ANOVA was performed. This is because the variable "learning outcome" was scored differently than the rest of the variables. The variables "satisfaction", "purchase intention", and "self-efficacy" were measured using a five-point Likert scale while the variable "learning outcome" outcome" was measured using total scores, which vary from 0 to 20.

One item for the variable "purchase intention" was also tested separately from the other items because of its type, which is an open question. For this particular question, an ANOVA was also conducted. The question for this item was, "If I were going to buy this online course, how much would I consider paying for one set (10 videos) of this online course?" and the answer varied from 10 thousands Rupiahs (approximately 60 cents) to three million Rupiahs (approximately 175 Euros).

#### Results

The main test analysis started with testing the variables "satisfaction", "purchase intention", and "self-efficacy". In this table below, a summarized descriptive analysis from these variables and the experimental conditions are displayed.

#### Table 6

Measures	Gestures				Facia	Facial expressions				Motivational statements			
mououroo	00010100									ational		onto	
	No		Yes		Neutr	Neutral		Нарру			Yes		
	М	SD	М	SD	М	SD	М	SD	М	SD	М	SD	
Satisfaction	3.88	0.62	3.74	0.58	3.77	0.61	3.85	0.60	3.82	0.61	3.80	0.60	
Purchase intentions	3.48	0.63	3.41	0.62	3.42	0.61	3.47	0.64	3.46	0.62	3.43	0.63	
Self-efficacy	3.56	0.63	3.56	0.57	3.58	0.59	3.54	0.61	3.53	0.64	3.59	0.56	

Descriptive Values for "Satisfaction", "Purchase intention" and "Self-efficacy"

To investigate further whether the mean differences are truly meaningful, a multivariate ANOVA (MANOVA) for all of the three variables above was commenced. ANOVA was used to clearly see a significant result of mean comparisons between the dependent variables when manipulated with the factors tested in this experiment, which are gestures, facial expressions, and motivational statements. The result of the test is shown in **Table 7**.

#### Table 7

MANOVA Result for "Satisfaction", "Purchase Intention", and "Self-Efficacy"

Variable	Items	Mean Square	F	df	р
Gestures	Satisfaction	1.32	3.72	1	0.05
	Purchase Intention	0.36	0.94	1	0.33
	Self-Efficacy	2.57	0.00	1	0.99
Facial	Satisfaction	0.33	0.94	1	0.33
Expressions	Purchase Intention	0.18	0.46	1	0.50
	Self-Efficacy	0.08	0.22	1	0.64
Motivational	Satisfaction	0.02	0.05	1	0.83
Statements	Purchase Intention	0.12	0.32	1	0.57
	Self-Efficacy	0.15	0.42	1	0.52
Gestures x	Satisfaction	2.80	7.87	1	0.01
Facial	Purchase Intention	2.99	7.76	1	0.01
Expressions	Self-Efficacy	1.25	3.48	1	0.07

Variable	Items	Mean Square	F	df	p
Gestures x	Satisfaction	0.04	0.10	1	0.75
Motivational	Purchase Intention	0.00	0.00	1	0.98
Statements	Self-Efficacy	0.40	1.12	1	0.29
Facial	Satisfaction	0.47	1.33	1	0.25
Expressions	Purchase Intention	0.04	0.10	1	0.92
X	Self-Efficacy	0.24	0.66	1	0.42
Motivational					
Statements					
Gestures x	Satisfaction	0.21	0.58	1	0.45
Facial	Purchase Intention	0.08	0.20	1	0.66
Expressions	Self-Efficacy	0.15	0.42	1	0.52
х					
Motivational					
Statements					

All of the variables do not show a significant effect as described by their *p*-values. The only variable that is seen to be marginally significant is "satisfaction" when it is manipulated by gestures (p=0.05). It is also shown in **Table 6** that there is a slight difference between the condition of "gestures" and "no gestures". This means, out of 267 participants, the ones who were exposed to the stimuli with no gestures expressed a generally higher "satisfaction" scores than those who were exposed with gestures. This result is inconsistent with the expected result. Gestures were predicted to promote satisfaction, but instead the result demonstrates otherwise. Other than the mean differences between the condition of gestures for "satisfaction", there seems to be no noticeable differences between the other means.

A separate ANOVA was also conducted to see the effect of one "purchase intention" item that was asked as an open question. The result of the ANOVA test illustrates no significant result from the manipulation of gestures, facial expressions, and motivational statements (p=0.23; p=0.33; and p=0.49) respectively. There are also no interaction effects between gestures, facial expression, and/or motivational statements for this particular item.

In **Table 7**, the MANOVA result for interaction effects between gestures, facial expressions, and motivational statements is given. The interaction effects between gestures and facial expressions indicate significant results for the dependent variables "satisfaction" (p=0.01) and "purchase intention" (p=0.01), with both of their *p*-values resulting below 0.05. The last dependent variable, which is "self-efficacy" can also be considered to be marginally significant (p=0.07). Other than the interaction effect of gestures and facial expressions, there are no significant interaction effects resulted from the MANOVA.

To put into perspectives, below are the mean plots for the interaction between gestures and facial expressions for the variable "satisfaction" (**Figure 4**), "purchase intention" (**Figure 5**), and "self-efficacy" (**Figure 6**).

#### Figure 4



Means Plot Interaction Between Gestures and Facial Expressions for "Satisfaction"

In terms of "satisfaction", the conditions with neutral face and no gestures exhibit greater mean scores than the ones with gestures. On the other hands, if the video lecture contains happy face, then the conditions with gestures presents higher mean score than the ones without gestures. The mean differences of these interaction effects can be seen in a descriptive analysis table in **Appendix IV**.

#### Figure 5



Means Plot Interaction Between Gestures and Facial Expressions for "Purchase Intentions"

The same result can be acknowledged for the variable "purchase intention" as well. The mean scores for experimental conditions with neutral face and gestures show significantly smaller results compared to the ones without gestures. On the contrary, the mean scores for the condition with happy face and gestures demonstrate higher scores than the ones without

gestures. The result of descriptive analysis for the interaction effects for "purchase intention" can be seen in **Appendix V**.

#### Figure 6



Means Plot Interaction Between Gestures and Facial Expressions for "Self-efficacy"

Even though the interaction effect for the variable "self-efficacy" is only marginally accepted, the interaction effect of gestures and facial expressions can be clearly seen from **Figure 6** above. For the condition with neutral face and gestures, the mean scores are inferior than the ones without gestures. In contrast, the conditions with happy face and gestures possess mean scores that are somewhat greater than the ones without gestures. The full descriptive values for the interaction effect that influence "self-efficacy" is available **in Appendix VI**.

All of the three plots (**Figure 4, Figure 5,** and **Figure 6**) above illustrate the line graphs of estimated marginal means that are established between gestures and facial expressions. The crossing of the two lines means an interaction effect is present between the two factors. All of the figures above mainly conclude the same thing: if the instructor presents information with a neutral face, presenting it with no gestures would result a higher mean score than with gestures. On the contrary, if the instructor presents information with a happy face, presenting it with no gestures would mean a lower mean score than delivering it with gestures.

Other than the three dependent variables that have already been tested using MANOVA, the variable "learning outcome" was tested using a separate ANOVA. In the table below, the descriptive values that report the means for the variable "learning outcome" is shown.

#### Table 8

Measures	Gestur	Facial expressions				Motivational statements						
	No		Yes Neutral		al	Нарру		No		Yes		
	М	SD	М	SD	М	SD	М	SD	М	SD	М	SD
Learning outcome	15.50	3.39	16.13	2.87	16.23	2.99	15.40	3.26	15.63	2.91	16.00	3.38

Descriptive Values for "Learning Outcome"

Before concluding anything on the mean differences for this variable, the ANOVA result is analyzed as shown in **Table 9**.

#### Table 9

ANOVA Result for "Learning Outcome" with Variable Interaction

Variable	Mean Square	F	df	р
Gestures	21.81	2.27	1	0.13
Facial Expressions	45.59	4.75	1	0.03
Motivational	8.67	0.90	1	0.34
Statements				
Gestures x Facial	28.78	2.99	1	0.08
Expressions				
Gestures x	21.99	2.29	1	0.13
Motivational				
Statements				
Facial Expressions	19.21	2.00	1	0.16
x Motivational				
Statements				
Gestures x Facial	0.27	0.03	1	0.87
Expressions x				
Motivational				
Statements				

Based on the ANOVA result, the variable "facial expressions" illustrates a significant effect (p=0.03). As seen in **Table 8**, the most noticeable mean difference can be identified within the condition with neutral face and happy face. Although the mean difference is significant, the mean score for neutral face appears to be higher than happy face. The other mean scores are not significantly different. Other single variables, which are "gestures" (p=0.13) and "motivational statements" (p=0.34) do not demonstrate any significant effects. Although there are no other mean differences, an interaction effect between gestures and facial expressions for this variable can be concluded as marginally significant (p=0.08). No other interaction effects are detected from the table above.

#### Figure 7



Means Plot Interaction Between Gestures and Facial Expressions for "Self-efficacy"

The interaction effect in the plot above shows differences in result when it comes to the condition with the manipulation of gestures and facial expressions. The reason why it is only marginally significant is because of the slight difference in mean when it comes to the conditions with neutral face. The mean scores for the condition with neutral face and gestures are 16.03 (without motivational statements) and 16.36 (with motivational statements). On the other hand, the mean scores for the condition with neutral face are 16.63 (without motivational statements) and 15.94 (with motivational statements). The condition with motivational statements favors the addition of gestures when it comes to neutral face, while the condition without motivational statements shows an increase in mean score when neutral face is paired with gestures. The mean of the mean scores even out, as illustrated by the plot line in **Figure 7**.

On the contrary, the condition with happy face and gestures scores a mean of 15.26 (without motivational statements) and 16.36 (with motivational statements). The means for the condition with happy face and no gestures, however, shows significantly lower scores which are 14.67 (without motivational statements) and 14.93 (with motivational statements).

One additional ANOVA was conducted to see the effect of one "purchase intention" item that was asked as an open question. The result of the ANOVA test illustrates no significant result from the manipulation of gestures, facial expressions, and motivational statements (p=0.23; p=0.33; and p=0.49) respectively. There are also no interaction effects between gestures, facial expression, and/or motivational statements for this particular item.

From all of the tests and analysis above, it is confirmed that there are only a few hypotheses that are supported by the data. Even so, there are some additional insights that can be concluded by the results of the analysis, which are going to be discussed on the next section of the study. Below is an overview of the results of this study.

#### Table 10

Overview of Supported and Rejected Hypotheses

Нур	othesis statements		Dependent variables	Result
H1	Showing gestures in video lecture	а	learners' learning outcome	Rejected
	presentation for foreign language learning	b	satisfaction	Rejected
	would generate more positive impact on	С	purchase intentions	Rejected
	than showing no gestures at	d	learner's self-efficacy	Rejected
	all.			
H2	Happy facial expressions in video	а	learners' learning outcome	Rejected
	lecture presentation for foreign learning	b	satisfaction	Rejected
	would generate more positive impact on	С	purchase intentions	Rejected
	than neutral facial	d	learner's self-efficacy	Rejected
	expressions.			
H3	Mentioning motivational statements in	а	learners' learning outcome	Rejected
	video lecture presentation for foreign	b	satisfaction	Rejected
	language learning would generate more	С	purchase intentions	Rejected
	positive impact on	d	learner's self-efficacy	Rejected
H4	Video lecture presentations with	а	learning outcome	Marginally
	gestures and happy facial expressions			supported
	in them would influence more positively	b	satisfaction	Supported
	on	С	purchase intention	Supported
		d	self-efficacy	Marginally
				supported
H5	Video lecture presentation with gestures,	а	learning outcome	Rejected
	happy facial expressions, and	b	satisfaction	Rejected
	motivational statements in it would	С	purchase intention	Rejected
	influence more positively on	d	self-efficacy	Rejected

Although the result shows a significant mean difference for the first hypothesis about gestures and satisfaction (**H1b**), this hypothesis is still rejected. The formulated hypothesis claimed that having gestures is expected to generate positive impact on satisfaction than showing no gestures, but the supported hypothesis is the other way around. The result shows that having no gestures influence more impact on satisfaction than having gestures on the video lecture.

The same result also applies to the second hypothesis about facial expressions and learning outcome (**H2a**). Although the result demonstrates a significant mean difference, the hypothesis statement was originally formulated to favor happy facial expressions than neutral facial expressions. In this study, the data shows that neutral facial expressions generate higher mean scores than happy facial expressions.

#### Discussion

#### The effects of gestures to foreign language learning experience

The present research has one main research question, which is aimed to find what kind of body language and/or additional statement that a foreign language instructor should provide in an online video lecture. The experiment in this study explored the effectiveness of gestures, facial expressions, and additions of motivational statements as a form of instructor's body language. Some interesting outcomes can be concluded from the experiment.

Presenting an online video lecture with gestures was hypothesized to have more impact to learning outcome (Kushch, 2018; Pi et a., 2020). However, the result shows no differences of the conditions with gestures and without gestures. One reason that can be derived from this conflicting result is the fact that the present study used a different kind of gestures than the ones tested in the previous researches by Kushch (2018) and Pi et al. (2020). Kushch (2018) tested beat gestures, which are gestures that are generated when marking certain words or phrases. For example, some people might use a beat gesture of flaunting their hand outward when emphasizing one particular word or phrase. On the other hand, Pi et al. (2020) used deictic gestures which are gestures to point on a certain direction. For example, when giving whereabouts information of a building, some people might use their hands to point at the direction of that building. Unlike the two studies above, the present study attempted to test the use of metaphoric gestures to help explain meanings of the words presented in the video lectures. This means, using different types of gestures in a video lecture can also result in different influences on learning outcome.

Pi, Zhang, Yang et al. (2019) explained more about the diverse influences between the different gestures. Their study experimented on different types gestures, which are deictic and descriptive gestures (i.e., metaphoric and iconic gestures) in video lectures to explain how to do multimedia activities. The results demonstrate that both kind of gestures actually do have a positive influence on learning outcome. The reason behind it can be explained by embodied cognition theory (Alibali & Nathan, 2012). According to embodied cognition theory, Pi, Zhang, Yang et al. (2019)'s results in a positive influence of gestures is caused by the instructor's descriptive movements that helped the learners understand from existing body and human experience.

Based on the research above, descriptive gestures in an instructional video to do a multimedia activity (i.e. learning how to make a curve on Adobe Photoshop) are found to lead into more impact than for language learning video lectures. This might be because in a foreign language learning, learners have more cognitive load to process what the words mean and how to form it in real life. When it comes to learning mathematics (Alibali & Nathan, 2012) or multimedia learning (Pi, Zhang, Yang et al., 2019), metaphorical gestures are easier to help convey meaning of the information given by the instructor because the language used when giving that information is already understandable by the learners. In a case of language learning experience, the learners need to understand how to use the words in sentence instead of just learning the meaning of the words.

This result also summarizes a conflicting insight from Morett (2014)'s study where they explained that gestures do provide a supplementary information that influences significantly on foreign-language learners' learning outcome. A difference in result can be explained by the difference in the platform of where the learning experience takes place. Morett (2014)'s study was discussing about learning a foreign language in classroom settings, where there are face-to-face interactions between learners and instructors. In the present research, the learners and instructors were not facilitated to have any face-to-face interactions at all. The result of a study by Gullberg, Roberts, Dimroth, Veroude, and Indefrey (2010) also supports the idea of having gestures in an audio-visual platform as an effective way for adults to learn foreign languages, but they also clarify that gestures should also be provided with other factors (e.g. images and icons on screen) to be sufficient.

In the present study, the manipulation of gestures was also proven to have a slight impact on satisfaction. The curious thing about this influence is the fact that it shows how gestures have negative impact on satisfaction instead of positive influence. It seems that the metaphoric gestures designed in the present study did not manage to make a resemblance with a face-to-face language learning session, and thus creating a negative influence on satisfaction. It was hypothesized that gesturing in a video lecture would help creating a sense of "realness" as told by Patterson (2019) and would influence positively on satisfaction (Hostetter & Busch, 2006), but that was not the case for the present study.

This might be because of the format of the video stimuli, which were designed as picture-andpicture video. Pi, Zhang, Yang et al. (2019) explained that while instructor's pointing gestures allocate learner's attention to the textual information on the presentation slides, descriptive gestures allocate learner's attention to the instructor. This might cause confusion to learners. When they were watching the video, their attention would focus on the presentation slide, especially since the information presented is foreign words. They would automatically search for the translation to the foreign words, which is written in the presentation slide. This explains that learners might feel confused on which way to look when the gestures made by the instructor allocated their attention from the presentation slides towards the instructor. This caused a big problem in a picture-in-picture video format, because the instructor video is placed smaller in the right corner of the presentation, while the textual information is on the left side and are bigger than the instructor video. This assumption concludes the reason why learners would feel less satisfied when viewing a picture-in-picture video lecture accompanied with gestures on it.

The research result by Goldin-Meadow (2014) also explained that gestures made by learners are more impactful to learning outcome than when they are solely shown by the instructor. As the present study only focuses on what the instructor does in an online video lecture, gestures made by learners are not noticed during the data collection process. If the learners are taught to create gestures by the instructors, it might result in a different conclusion.

#### The effects of facial expressions to foreign language learning experience

The result of the present study shows that facial expressions have an influence on learning outcome, but it is the kind of neutral facial expressions that has more impact on learning outcome than happy facial expressions. This does not correlate with previous researches by

Borup et al. (2012) and Becker et al. (2014) who supported the idea of having happy facial expressions to improve learning outcomes.

One of the main reasons that can explain this insight is from the type of learning platforms tested in the present research. Borup et al. (2012) and Becker et al. (2014) concluded the importance of conveying emotions with facial expressions for lectures that allow instructors and learners to have direct communications with each other. Becker et al. (2014)'s study focused on learning experience in a face-to-face classroom. And even though Borup et al. (2012)'s research was about online video lectures, the instructors and learners were still able to communicate directly with each other during or after the lectures ended. This suggests that facial expressions are keener for learners who can also directly communicate and respond to the emotions expressed by the instructor instead of those who are not able to.

In the present study, the instructor was the only one who communicated her emotions to the learners. As the learners were not able to respond with the same manner to the instructor, a one-way communication of the emotion was established. The emotions expressed by the instructor became a self-revealing remark instead of a social cue. According to Clark and Mayer (2011), an over-emphasis of self-revealing remarks can distract the learner from focusing on the main information of the lecture. This might be the cause of the negative effect of happy facial expressions in the present study. As the instructor conveyed too detailed information of her emotion with her happy facial expressions, the learners became distracted and thus influenced their learning outcomes negatively.

Pi et al. (2020)'s result also differed from the outcome of the present study. They explained how learners tend to shift their attention to instructor's face instead of the text in the presentation. In the present study, the learners might also use their attentions more to the instructor's face instead of the texts in the presentation. For lessons about the Earth that uses only one native language, happy facial expressions facilitate a sense of interaction between the instructor and learner (Pi et al., 2020). On the other hand, for language learning purposes, happy facial expressions distract learner's attention (Clark & Mayer, 2011) and negatively impact their learning outcomes instead.

Sweller (1994) explained that learning a foreign language is a prime example of a task that requires "high element interactivity", which is where learners need to simultaneously learn the other aspects of the main information for it to make sense. Even though the video lectures in the present study only offered novel vocabularies, the instructor also explained how to apply those words in their daily life (i.e. "When we want to introduce ourselves to strangers, we can use "*Ik ben*" and then followed by our own names."). No matter how easy the vocabularies are at first, learners of foreign language naturally seek to understand the words and how to use them (Machida, 2011). This causes higher intrinsic cognitive loads in language learning (Sweller 1994). While Pi et al. (2020)'s experiment demonstrates higher learning outcomes with an addition of extraneous cognitive loads from the happy facial expressions, the learners might experience cognitive overload in the present research.

Aside from the negative impact of happy facial expressions for learning outcomes, changes in facial expressions do not contribute to the establishment of satisfaction, purchase intention, and self-efficacy. This can be concluded that even though there is an influence on learning outcome, using happy facial expression when delivering a lecture might not possibly have any

effect on satisfaction, purchase intention, and self-efficacy. This result is conflicting to a previous study by Wang et al. (2018) that concludes facial expressions influence learning satisfaction. Although the result differs, Wang et al. (2018)'s study concluded that happy facial expression was indeed beneficial when it is paired with direct eye gaze which establish social cues. Happy facial expression in the present study's case might not provide enough social cues to establish social presence.

#### The effects from the combination of gestures and facial expressions

The other interesting insight that can be extracted from this study is the interaction effect between gestures and facial expressions which is present on learning outcome, satisfaction, purchase intention, and self-efficacy. This result is also supported by Sueyoshi and Hardison (2005) who concluded that gestures with harmonized facial cues can impact positively on learning outcome. Safarali and Hamidi (2012) also posited a similar result for this interaction effect as well, where they reckoned that gestures and facial expressions together better influence the effectiveness of learning foreign languages.

In the present study, the learners who viewed video lectures with gestures and happy facial expressions performed better than those who viewed video lectures with gestures and neutral facial expressions. Video lectures with no gestures and neutral facial expressions are also more effective compared to the ones with no gestures and neutral facial expressions. Furthermore, video lectures with no gestures and neutral facial expressions resulted in better learning outcomes, satisfactions, purchase intention, and self-efficacy than the ones with gestures and happy facial expressions.

The interaction between gestures and facial expressions in the present study can explain the reasons why gestures is the only one that has significant value on satisfaction and why facial expressions influences negatively on learning outcomes. The interaction effect between gestures and facial expressions justify that an influence on learning outcome, satisfaction, purchase intention, and self-efficacy occurs only when gestures are demonstrated with its harmonized facial expressions. The participants might feel that having gestures with an unharmonized facial expression—in this case, a neutral facial expression—creates a situation where it can be registered as a cognitive dissonance instead (Festinger, 1957). In this case, a cognitive dissonance occurs because the participants would expect that when somebody uses gestures to explain something positive, they would also be presented in a positive attitude or with a happy face instead of a neutral face. For example, when the instructor explained the word "Goed"—which means "good"—while demonstrating a thumbs-up accompanied by a neutral face, it can possibly create a confusion as the meaning shown by the instructor's face is different than what was being demonstrated. Creating a cognitive dissonance results in a feeling of discomfort for the participants (Festinger, 1957), thus influencing satisfaction. Compared to the exposure of video lectures with gestures and happy facial expressions, learners who are exposed to video lectures with gestures and neutral facial expressions might feel discomfort and become less satisfied.

This, too, can explain Clark and Mayer (2011)'s theory about self-revealing remarks that might distract learners in the case of the present research. If the instructor is not presenting with gestures but applying happy facial expressions, the facial expressions became a seductive

additional information that distracts them from the main information. But if happy facial expression is accompanied with gestures, these two cues enhance instructor's social presence instead. This is because gestures already allocate learner's attention to the instructor (Pi, Zhang, Yang et al., 2019) when learners notice the instructor's facial expressions. When this happens, happy facial expressions become a social cue instead of a distraction, because gestures already shift learner's attention away from the main information. This is why using gestures will be beneficial if only it is accompanied with happy facial expressions.

Furthermore, the effect of not having gestures is greater when accompanying it by neutral facial expression. When using a neutral face, the videos where the instructor used gestures resulted in a lower mean score than when not using any gestures. This explains that when using neutral face, using no gestures would perform better on learners. Aside from that, video lectures with no gestures and neutral facial expressions also resulted in better learning experience than video lectures with gestures and happy facial expressions. This indicates that with no gestures and facial expressions, learners might actually focus more on the main information presented during the lecture because nothing can distract them in crucial moments where they need to concentrate.

#### The lack of effects from additional motivational statements

There are numerous studies that have supported the idea of how motivational agents, such as additions of motivational statements, during a learning process would influence learning outcome, satisfaction, purchase intention, and self-efficacy. It is interesting how motivational statements do not show the same result as how facial expressions can negatively influence learning outcome. Both facial expressions and motivational statements in this research are performed in such way that they do not supply explanations on the information that are presented in the learning experience and are expected to perform similarly. The result of this study shows otherwise which is that motivational statements do not influence learning experience in video lectures for foreign language learning.

The presence of an instructor in a video lecture adds more cognitive loads and compete with the main information presented in the video itself (Kizilcec et al., 2014). This argues that nonverbal cues that are introduced in the video, such as motivational statements, can add more cognitive loads in the process. However, according to the theory of working memory (Baddeley, 1992), this kind of nonverbal information can actually support the main information with additional meanings when used in a correct manner (Clark & Mayer, 2011). For example, by giving examples or further explanations with facial expressions (e.g. frowning to explain "tired"). In the present study, motivational statements do not provide a supporting element to make learners understand the information better. The motivational statements that are presented in this study are only aimed to arouse motivations to learn the language, and not provide any supporting materials for the information during the experience.

In addition to that, another reason why addition of motivational statements does not show any influences on learning outcome, satisfaction, purchase intention, and self-efficacy is because the motivational statements are lacking in promoting engagement between the instructor and the learners. Out of nine, there are only two motivational statements in the present study that

encourage engagement (e.g., "After I pronounce the words, let's try and repeat saying these words."). Building connections between the learners and the instructor should be the main focus of the motivational statement, as it creates a higher sense of commitment (Patterson, 2019). This argument is also supported by Clark and Mayer (2011) who noted how social cues, such as motivational statements, should trigger learner's social responses and thus improving their commitment to the learning experience. Not only that, the videos created in this study were only exposed once to the participants. Engagement would be easier to make when there are multiple encounters or exposures between the instructor and the learners.

#### The lack of effects from the combination between all manipulations

Even though interaction effect between gestures and facial expressions is present for all of the dependent variable, there is not enough evidence to support the interaction effect between all manipulations (gestures, facial expressions and gestures). This might be because of the differences between the type of cues presented in the video lecture. Firstly, gestures and facial expressions are two visual aid that are manipulated in this study. Secondly, motivational statements are presented as an audio aid. This difference in type of cues can establish more cognitive load. Even though the main information that are conveyed in the video lecture is designed for beginners, the main presentation slides that are the essential focus of the learners are already colorful and might already add extraneous cognitive loads to learners.

Mayer and Moreno (2003) explained that learning can be deemed as effective when the instructional material is moderate, meaning enough cues and information. Too many extraneous cognitive loads can lead to too much cognitive processing that potentially results in cognitive overload (Mayer & Moreno, 2003). The combination of gestures, happy facial expressions, and additional motivational statements might be too much to process when the learners already have the main information to digest as well.

#### **Theoretical Implications**

It is not the first time that the interaction effect between gestures and facial expressions has been supported in online learning studies (e.g. Sueyoshi & Hardison, 2005; Mayer & DaPra, 2012; Safarali & Hamidi, 2012). The present study further clarifies that when using both gestures and facial expressions, it might be wiser to pair gestures and with its harmonized facial expression conditions, as it can influence learner's learning outcome, satisfaction, purchase intention, and self-efficacy. Moreover, this research also discovers that the use of gestures, in particularly metaphorical ones, in a picture-in-picture video lecture can result on a negative effect on learner's satisfaction. This conclusion adds notable view for researches on gestures for online learning materials such as the ones done by others (e.g. Pi et al., 2017; Pi, Zhang, Yang et al., 2019).

Additionally, the measures developed for learning outcome in the present study shows a generally high reliability. It proves that having the test designed in the same way as in the present study can be used to measure learning outcome. The knowledge test in the present research incorporated a balanced number of open and multiple-choice questions, which are tested to be reliable to test learning outcome. For a language learning knowledge test, the distribution of translation tasks from the native language to the foreign language and vice

versa seems to be proportional as well. A similar measure of items can be adopted for future works.

#### **Practical Implications**

For designers who work in an educational industry and would like to educate people for foreign languages, it is advisable to decide wisely before adding gestures and facial expressions to the instructor's body language. The result of this research shows that online video lectures with gestures and harmonized facial expressions can impress learners more than the ones that has conflicting facial expressions. Especially for foreign language instructors, it might be effective to teach beginners by accompanying metaphorical gestures and a happy facial expression. Not only influencing learning outcome and satisfaction, the combination of both of them can excite learner's purchase intention as well. This becomes important to consider when deciding what kind of video lectures an instructor would like to deliver for people who have yet decided to join their online lectures (e.g. presenting free trial videos).

Although having gestures and happy facial expressions are advised, designers should also be considerate when using these social cues. As it turns out, having no gestures with neutral facial expressions resulted in higher performance and learning experience than having gestures with happy facial expressions. This insight should be noted when it comes to video lecture for foreign language learning, which has a greater tendency to produce higher cognitive loads (Sweller, 1994).

#### **Limitations and Future Works**

After conducting the experiment, some limitations about the present research are discovered. These limitations can surely be improved on future researches.

First of all, the participants for the present research are diverse. Even though the distribution of age, educational levels are known to be even, the present study did not gather any background information on their economic status and the industry they are working on. This can be seen from the variety of the money amount the participants are willing to give for the course that are designed as the stimulus. The large gap between the highest bid and the lowest bid shows there might be influences of economic status and their knowledge within certain industries on their willingness to pay for this kind of services. People who are working on an education industry might be appreciating the course more than people who are not active and interested in this kind of industry. In the future, it might be wise to limit the scope of participants based on their economic statuses or interests.

Other than that, the experiment was only done online. Supervisions on how the participants answer the tests that measure their learning outcome cannot be implemented during the experiment. There are no guarantees that the participants did not use any dictionary or other online services to cater their process of answering these questions. Because there are no one to supervise how their work on the tests, it becomes a question whether they truly did manage to answer the questions, or they got help from others. Moreover, because the experiment was done online, there are also no guarantees that the participants are 100% engaged and focused on the stimulus during the exposure period. For future researches, when testing

learning outcome with a series of test questions, it is best to be done with a supervision to ensure that no participants cheat on their tests.

Furthermore, because of some restraints in time and funding, the creation process behind the stimulus videos are limited. The instructor for the present research is not a native in the foreign language that is being taught in the video lecture. The instructor is also not a professional language instructor, so she might not know the best way to deliver the information in the video lecture. An idea for future studies aside from investing in a professional instructor, is to manipulate the conditions of the instructor. It might be interesting to see whether genders of the instructors can influence online language learning experience. Aside from gender, seeing the differences between native speaker instructors and foreign speaker instructors is also possible.

Moreover, the condition of different factors tested in this study are only exposed for a total of no longer than 8 minutes to the participants. The short timeframe might influence the result of this current study. It might be that the participants need more exposure to fully experience the learning process intended by the course. A different result might surface if the stimulus is exposed over time (e.g. over the period of two months), or with a longer timeframe (e.g. one hour of exposure).

In addition to that, the videos in the present study are designed as picture-in-picture video, which illustrated negative results on certain aspects. In the future, it might be interesting to see an improved type of picture-in-picture videos (e.g., the use of green screen, and larger scale of the instructor), as shown in studies by Wang and Antonenko (2017) and Pi et al. (2020), who used the videos for a similar context of research. Moreover, Gullberg et al. (2010) noted the importance of having something visual accompanying the gestures like icons or images. For future studies, it could also be tested how gestures accompanied by other visual aids would perform better than not.

Lastly, as this is a study that focuses on language learning, it might be fascinating to know how gestures, facial expressions, and maybe newly improved motivational statements can do for foreign languages with different font types such as Arabic or Japanese. Unfamiliar writings can mean more cognitive loads to the brain, and thus it would be interesting to explore more.

#### Conclusions

There are many researches that support the idea of having gestures, facial expressions, and additional motivational statements when delivering an online video lecture. The present study tested these assumptions for foreign language learning purposes. With the present study, it becomes clear that the combination of gestures and facial expressions creates better learning experience for learners. Having no gestures with neutral facial expressions would be more impactful for learning experience than having no gestures with happy facial expressions. On the other hand, having gestures are more effective if it is paired with happy facial expressions. This pairing is accounted for learning outcome, satisfaction, purchase intention, and self-efficacy. Other than that, there are contradicting results when it comes to only having gestures in a video lecture. There is a slight difference in result that manifested satisfaction. Presenting information without gestures satisfied learners better than the ones with gestures.

Metaphorical gestures might allocate learner's attention away from the main information in the slides, and this resulted in a less affective learning experience. Other than that, using only happy facial expressions is found to be less effective when it comes to learning outcomes. Happy facial expressions might distract learners, thus resulted in lower learning outcomes. There are other factors that might be relevant to the result of this study, such as the type of gestures, the format of the video, and the application of motivational statements. This conclusion summarizes that gestures and facial expressions should be harmonizing with one another when implemented in a video lecture for language learning purposes.

#### References

- Alibali, M. W., & Nathan, M. J. (2012). Embodiment in mathematics teaching and learning: Evidence from learners' and teachers' gestures. *Journal of the Learning Sciences*, 21(2), 247-286. https://doi.org/10.1080/10508406.2011.611446
- Arbaugh, J. B. (2000). Virtual classroom characteristics and student satisfaction with internetbased MBA courses. *Journal of Management Education, 24*(1), 32-54. https://doi.org/10.1177/105256290002400104
- Baddeley, A. (1992). Working memory. *Science*, *255*(5044), 556-559. https://doi.org/10.1126/science.1736359
- Bandura, A. (1986). Social foundations of thoughts and action: A social cognitive theory. Prentice-Hall.
- Bandura, A. (1997). Self-efficacy: The exercise of control. Freeman.
- Becker, E. S., Goetz, T., Morger, V., & Ranellucci, J. (2014). The importance of teachers' emotions and instructional behavior for their students' emotions—an experience sampling analysis. *Teaching and Teacher Education*, 43, 15-26. https://doi.org/10.1016/j.tate.2014.05.002
- Beege, M., Schneider, S., Nebel, S., & Rey, G. D. (2017). Look into my eyes! Exploring the effect of addressing in educational videos. *Learning and Instruction, 49*, 113-120. https://doi.org/10.1016/j.learninstruc.2017.01.004
- Borup, J., West, R. E., & Graham, C. R. (2012). Improving online social presence through asynchronous video. *The Internet and Higher Education*, *15*(3), 195-203. https://doi.org/10.1016/j.iheduc.2011.11.001
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (1999). *How people learn: Brain, mind, experience, and school.* National Academy Press.
- Canning-Wilson, C. (2000). Practical aspects of using video in the foreign language classroom. *The Internet TESL Journal, 1*(11). Retrieved from http://iteslj.org/Articles/Canning-Video.html
- Chen, C. M., & Wu, C. H. (2015). Effects of different video lecture types on sustained attention, emotion, cognitive load, and learning performance. *Computers & Education, 80*, 108-121. https://doi.org/10.1016/j.compedu.2014.08.015
- Church, R. B., Ayman-Nolley, S., & Mahootian, S. (2004). The role of gesture in bilingual education: Does gesture enhance learning? *International Journal of Bilingual Education* and *Bilingualism*, 7(4), 303-319. https://doi.org/10.1080/13670050408667815
- Clark, R. C., & Mayer, R. E. (2011). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning* (3rd ed.). Pfeiffer.
- Dieck-Assad, G., Hinojosa-Olivares, J. M., & Colomer-Farrarnos, J. (2020). Study of the effectiveness of interactive videos in applied electronics courses. *International Journal* on *Interactive Design and Manufacturing*, 14(3), 983-1001. https://doi.org/10.1007/s12008-020-00689-2
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). The effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research, 28*(3), 307-319. https://doi.org/10.2307/3172866
- Festinger, L. (1957). A theory of cognitive dissonance. Stanford University Press.
- Fiorella, L., Stull, A. T., Kuhlmann, S., & Mayer, R. E. (2019). Instructor presence in video lectures: The role of dynamic drawings, eye contact, and instructor visibility. *Journal of Educational Psychology*, 111(7), 1162-1171. https://doi.org/10.1037/edu0000325

- Formanek, M., Buxner, S., Impey, C., & Wenger, M. (2019). Relationship between learners' motivation and course engagement in an astronomy massive open online course. *Physical Review Physics Education Research, 15*(2), 020140. https://doi.org/10.1103/PhysRevPhysEducRes.15.020140
- Goldin-Meadow, S., & Beilock, S. L. (2010). Action's influence on thought: The case of gesture. *Perspectives on Psychological Science, 5*(6), 664-674. https://doi.org/10.1177/1745691610388764
- Goldin-Meadow, S. (2014). How gesture works to change our minds. *Trends in Neuroscience and Education, 3*(1), 4-6. https://doi.org/10.1016/j.tine.2014.01.002
- Grewal, D., Monroe, K. B., & Krishnan, R. (1998). The effects of price-comparison advertising on buyers' perceptions of acquisition value, transaction value, and behavioural intentions. *Journal of Marketing*, *62*(2), 46-59. https://doi.org/10.2307/1252160
- Gullberg, M. (2006). Some reasons for studying gesture and second language acquisition (Hommage à Adam Kendon). *International Review of Applied Linguistics*, *44*(2), 103-124. https://doi.org/10.1515/IRAL.2006.004
- Gullberg, M., Roberts, L., Dimroth, C., Veroude, K., & Indefrey, P. (2010). Adult language learning after minimal exposure to an unknown natural language. *Language Learning*, 60(2), 5-24. https://doi.org/10.1111/j.1467-9922.2010.00598.x
- Gunawardena, C. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, 1(2), 147-166. Retrieved from https://www.learntechlib.org/primary/p/15156/.
- Hardesty, D. M., Carlson, J. P., & Bearden, W. O. (2002). Brand familiarity and invoice price effects on consumer evaluations: The moderating role of skepticism toward advertising. *Journal of Advertising*, 31(2), 1-15. https://doi.org/10.1080/00913367.2002.10673663
- Homburg, C., Koschate, N., & Hoyer, W. D. (2005). Do satisfied customers really pay more? A study of the relationship between customer satisfaction and willingness to pay. *Journal of Marketing*, 69(2), 84-96. https://doi.org/10.1509/jmkg.69.2.84.60760
- Homer, B. D., Plass, J. L, & Blake, L. (2008). The effects of video on cognitive load and social presence in multimedia-learning. *Computers in Human Behavior*, 24(3), 786-797. https://doi.org/10.1016/j.chb.2007.02.009
- Hostetter, C., & Busch, M. (2006). Measuring up online: The relationship between social presence and student learning satisfaction. *Journal of the Scholarship of Teaching and Learning*, 6(2), 1-12. Retrieved from https://scholarworks.iu.edu/journals/index.php/josotl/article/view/1670
- Huang, Y. M., Liu, M. C., Lai, C. G., & Liu, C. J. (2016). Using humorous images to lighten the learning experience through questioning in class. *British Journal of Educational Technology*, 48(3), 878-896. https://doi.org/10.1111/bjet.12459
- Jo, J., Yang, Y., Kim, G., & Lim, H. (2019). A comparative analysis of emotional words for learning effectiveness in online education. In C. F. Lynch, A. Merceron, M. Desmarais, & R. Nkambou (Eds.), *EDM 2019 - Proceedings of the 12th International Conference on Educational Data Mining* (pp. 591-594). International Educational Data Mining Society.
- Jones, G. R. (1986). Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *The Academy of Management Journal*, 29(2), 262-279. https://doi.org/10.2307/256188

- Keller, J. M. (1987). Development and the use of the ARCS model of instructional design. *Journal of Instructional Development,* 10(3), 2-10. https://doi.org/10.1007/BF02905780
- Keller, J. M. (2010). *Motivational design for learning and performance: The ARCS model approach*. Springer.
- Kizilcec, R. F., Papadopoulos, K., & Sritanyaratana, L. (2014). Showing face in video instruction: Effects on information retention, visual attention, and affect. *Proceedings* of the SIGCHI Conference on Human Factors in Computing Systems (CHI 2014), USA, 2095-2102. https://doi.org/10.1145/2556288.2557207
- Koksal, I. (2020, May 2). The rise of online learning. *Forbes*. https://www.forbes.com/sites/ilkerkoksal/2020/05/02/the-rise-of-online-learning/?sh=166a349f72f3
- Koumoutsakis, T., Church, R. B., Alibali, M. W., Singer, M., & Ayman-Nolley, S. (2016). Gesture in instruction: Evidence from live and video lessons. *Journal of Nonverbal Behavior*, 40(4), 301-315. https://doi.org/10.1007/s10919-016-0234-z
- Kowitt, B. (2020, November 16). The rise of the MOOCs: How Coursera is retaining the American workforce for a post-COVID economy. *Fortune*. https://fortune.com/2020/11/16/coursera-reinvent-podcast-coronavirus-reskilling/
- Kushch, O., Igualada, A., & Prieto, P. (2018). Prominence in speech and gesture favour second language novel word learning. *Language, Cognition and Neuroscience, 33*(8), 992-1004. https://doi.org/10.1080/23273798.2018.1435894
- Macedonia, M., Müller, K., & Friederici, A. D. (2011). The impact of iconic gestures on foreign language word learning and its neural substrate. *Human Brain Mapping, 32*(6), 982-998. https://doi.org/10.1002/hbm.21084
- Machida, S. (2011). Translation in teaching a foreign (second) language: A methodological perspective. *Journal of Language Teaching and Research, 2*(4), 740-746. https://doi.org/10.4304/jltr.2.4.740-746
- Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist, 38*(1), 43-52. https://doi.org/10.1207/S15326985EP3801\_6
- Mayer, R. E., & DaPra, C. S. (2012). An embodiment effect in computer-based learning with animated pedagogical agents. *Journal of Experimental Psychology: Applied, 18*(3), 239-252. https://doi.org/10.1037/a0028616
- McNeill, D. (1992). *Hand and mind: What gestures reveal about thought*. The University of Chicago Press. Retrieved from http://www.cogsci.ucsd.edu/~bkbergen/cogs200/McNeill CH3 PS.pdf
- Morett, L. M. (2014). When hands speak louder than words: The role of gesture in the communication, encoding, and recall of words in a novel second language. *The Modern Language Journal, 98*(3), 834-853. https://doi.org/10.1111/modl.12125
- Mottet, T. P., Richmond, V. P., & McCroskey, J. C. (2006). *Handbook of instructional communication: rhetorical and relational perspectives*. Routledge.
- Meuter, M. L., Bitner, M. J., Ostrom, A. L., & Brown, S. W. (2005). Choosing among alternative service delivery modes: An investigation of customer trial of self-service technologies. *Journal of Marketing*, 69(2), 61-83. https://doi.org/10.1509/jmkg.69.2.61.60759
- Ouwehand, K., van Gog, T., & Paas, F. (2015). Designing effective video-based modeling examples using gaze and gesture cues. *Journal of Educational Technology and Society,* 18(4), 78-88. Retrieved from https://www.jstor.org/stable/jeductechsoci.18.4.78

- Patterson, D. (2019). The human face in play based, shared, digital learning experiences. *Proceedings of the Australians Computer Science Week Multiconference (ASCW 2019), Australia.* https://doi.org/10.1145/3290688.3290751
- Pi, Z., Hong, J., & Yang, J. (2017). Effects of the instructor's pointing gestures on learning performance in video lectures. *British Journal of Educational Technology*, 48(4), 1020-1029. https://doi.org/10.1111/bjet.12471
- Pi, Z., Zhang, Y., Zhu, F., Xu, K., Yang, J., & Hu, W. (2019). Instructors' pointing gestures improve learning regardless of their use of directed gaze in video lectures. *Computers* & *Education*, 128, 345-352. https://doi.org/10.1016/j.compedu.2018.10.006
- Pi, Z., Zhang, Y., Yang, J., Hu, W., & Yang, H. H. (2019). All roads lead to Rome: Instructors' pointing and depictive gestures in video lectures promote learning through different patterns of attention allocation. *Journal of Nonverbal Behavior, 43*, 549-559. https://doi.org/10.1007/s10919-019-00310-5
- Pi, Z., Chen, M., Zhu, F., Yang, J. & Hu, W. (2020). Modulation of instructor's eye gaze by facial expression in video lectures. *Innovations in Education and Teaching International*, 1-9. https://doi.org/10.1080/14703297.2020.1788410
- Rodgers, S. (2004). The effects of sponsor relevance on consumer reactions to internet<br/>sponsorships.JournalofAdvertising,32(4),67-76.https://doi.org/10.1080/00913367.2003.10639141
- Safarali, S. K., & Hamidi, H. (2012). The impact of videos presenting speakers' gestures and facial clues on Iranian EFL learners' listening comprehension. *International Journal of Applied Linguistics & English Literature, 1*(6), 106-114. http://doi.org/10.7575/ijalel.v.1n.6p.106
- Secules, T., Herron, C., & Tomasello, M. (1992). The effect of video context on foreign language learning. *The Modern Language Journal*, *76*(4), 480-490. https://doi.org/10.2307/330049
- Sorokanich, L. (2020, October 26). Coursera saw a 398% increase in users between March and April. Here's how online learning is taking off, across platforms. *Fast Company*. https://www.fastcompany.com/90560954/coursera-saw-a-398-increase-in-usersbetween-march-and-april-heres-how-online-learning-is-taking-off-across-platforms
- Sueyoshi, A. & Hardison, D. M. (2005). The role of gestures and facial cues in second language listening comprehension. *Language Learning*, 55(4), 661-699. https://doi.org/10.1111/j.0023-8333.2005.00320.x
- Sweller, J. (1994). Cognitive load theory, learning difficulty, and instructional design. *Learning and Instruction*, 4(4), 295–312. https://doi.org/10.1016/0959-4752(94)90003-5
- Sweller, J., Ayres, P., and Kalyuga, S. (2011). Cognitive Load Theory. Springer.
- Stull, A. T., Fiorella, L., & Mayer, R. E. (2018). An eye-tracking analysis of instructor presence in video lectures. *Computers in Human Behavior*, 88, 263-272. https://doi.org/10.1016/j.chb.2018.07.019
- Sun, Y. & Rogers, R. (2020). Development and validation of the online learning self-efficacy scale (OLSS): A structural equation modelling approach. *American Journal of Distance Education*, 1-16. https://doi.org/10.1080/08923647.2020.1831357
- Thompson, E. (1997). Distance education drop-out: What can we do? In R. Pospisil & L. Willcoxson (Eds.), Learning Through Teaching, (pp. 324-332). Proceedings of the 6th Annual Teaching Learning Forum, Australia. Retrieved from http://lsn.curtin.edu.au/tlf/tlf1997/thompson.html

- Tong, J. H. (2017). A study on the effect of web live broadcast on consumers' willingness to purchase. *Open Journal of Business and Management*, 5, 280-289. https://doi.org/10.4236/OJBM.2017.52025
- Um, E. R., Plass, J. L., Hayward, E. O., & Homer, B. D. (2011). Emotional design in multimedia learning. *Journal of Educational Psychology*, 104(2), 485-498. https://doi.org/10.1037/a0026609
- Van Gog, T., Verveer, I., & Verveer, L. (2014). Learning from video modeling examples: Effects of seeing the human model's face. *Computers & Education, 72,* 323-327. https://doi.org/10.1016/j.compedu.2013.12.004
- Van Wermeskerken, M., Ravensbergen, S., & van Gog, T. (2018). Effects of instructor presence in video modeling examples on attention and learning. *Computers in Human Behavior, 89*, 430-438. https://doi.org/10.1016/j.chb.2017.11.038
- Wang, J., & Antonenko, P. D. (2017). Instructor presence in instructional video: Effects on visual attention, recall, and perceived learning. *Computers in Human Behavior*, 71, 79-89. https://doi.org/10.1016/j.chb.2017.01.049
- Wang, Y., Liu, Q., Chen, W., Wang, Q., & Stein, D. (2018). Effects of instructor's facial expressions on students' learning with video lectures. *British Journal of Educational Technology*, *50*(3), 1381-1395. https://doi.org/10.1111/bjet.12633
- Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker Jr., J. F. (2006). Instructional video in elearning: Assessing the impact of interactive video on learning effectiveness. *Information & Management, 43*(1), 15-27. https://doi.org/10.1016/j.im.2005.01.004
- Zhu, M., Herring, S. C., & Bonk, C. J. (2019). Exploring presence in online learning through three forms of computer-mediated discourse analysis. *Distance Education*, 40(2), 205-225. https://doi.org/10.1080/01587919.2019.1600365

Part	Word	Accompanying gesture						
Common	Hello	Both hands waving.						
communication								
words	"My name is…"	Hands pointing to self.						
	"I'm fine."	Thumbs up.						
	"I'm not doing so well."	Hands wavering.						
	Student	"Reading" an invisible book, gestured by hands.						
	Painter	One hand gesturing like it is using a brush to paint.						
	Photographer	Both hands gesturing like they are using a camera.						
	Chef	Both hands gesturing like they are cooking or mixing something in a bowl.						
	Driver	Both hands gesturing like they are handling a steering wheel.						
	Thank you	Both hands touching one another in front of chest						
"What do I do every day?"	Waking up	Yawning, with hands going over the head to show they are stretching.						
	Drinking	Hands gesturing like they are drinking from a cup.						
	Eating breakfast	Hands gesturing like they are eating.						
	Taking a shower	Both hands scrubbing shoulders.						
	Brushing teeth	One hand in front of teeth, making gestures of brushing them.						
	Walking to school	One hand gesturing two fingers "walking".						
	Watching TV	One hand gesturing like it is switching on a TV with a remote.						
	Playing basketball	Both hands gesturing like they are shooting a basketball.						
	Washing the dishes	Both hands gesturing like they are washing a plate.						
	Sleeping	Both hands placed together besides one ear and closing eyes.						

# Appendix I: List of words and accompanying gestures

### Appendix II: Motivational statements

Part of	Motivational statements	Bahasa Indonesia translations
ARCS		
Model		
Attention	After I pronounce the words, let's try	Setelah saya mengucapkan kata-kata
	and repeat saying these words.	berikut, yuk, coba ikut mengucapkan
	Defense also avient the all de anno 1	Kata-Kata berikut!
	Before changing the slide, can you	Sebelum ganti siide, coba tebak nabis
	guess what we will discuss after	Ini kita akan membanas apa? Ya!
	Lins? Tes! That's correct. Like what	di awal agai, kita akan balajar tantang
	we will be learning about a few	beharana contab kata yang
	examples of professions	mendeskripsikan profesi atau
		pekerjaan.
Relevance	Knowing these words can actually	Mengetahui kata-kata ini bisa
	help us when we go shopping in the	membantu kita pada saat berbelanja
	supermarkets. For example, if we	di <i>supermarket</i> , loh. Misalnya kalau
	want to buy toothpaste, we can find	mau beli pasta gigi, kita tinggal cari
	a tube that has the word "tanden" in	yang ada tulisan <i>"tanden</i> "-nya, karena
	it, because we know that in Dutch,	kita tahu Bahasa Belanda-nya
	to brush our teeth is	menyikat gigi adalah <i>tandenpoetsen</i> .
	"tandenpoetsen".	Outstate and balaise ball into balling
	After our lesson today, we would at	Setelan sesi belajar kali ini, kalian
	least know now to introduce	paling tidak akan tanu caranya
	Ourselves and now to thank you in	memperkenaikan diri dan berterima
Confidanca	You can definitely gain now	Kamu pasti langsung bisa nambahin
Connuence	vocabulary knowledges after this	kumpulan kosa kata baru setelah sesi
	session	pertemuan ini
	If necessary, you can pause the	Kalau merasa dibutuhkan, kalian bisa
	video for a moment, or even replay	pause video-nya sejenak, atau
	a certain part of the video to learn	bahkan mengulangi bagian tertentu
	the part that you might think is a bit	yang menurutmu agak rumit.
	difficult.	
	Because our class is in the form of	Karena kelas kita ini bentuknya video,
	a video, you can easily access the	kalian bisa dengan mudah
	video wherever and whenever you	mengakses videonya dimanapun dan
	want.	kapanpun kalian mau.
	If you practice a lot of the words that	Kalau kalian rajin latihan mengulang
	we have learned today, you can	kata-kata yang kita pelajari hari ini,
	definitely be fluent pronouncing	pasti bisa cepat fasih mengucapkan
	those words in no time!	kata-kata tadi!
Satisfaction	Cool! That was impressive of you to	Keren! Kamu hebat banget karena
	have finish the session.	telah menyelesaikan kursus hari ini.

Part	No	Questions								
Common	1	Translate the following word into the correct Bahasa Indonesia								
communication		words:								
words										
		(ID) Teriemahkanlah kata berikut ini ke dalam Bahasa Indonesia								
		ang benar:								
		Jang Sonan								
		"Hallo"								
		Traito								
		A								
		Answer:								
	2	I ranslate the following word into the correct Bahasa Indonesia								
		words:								
		(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Indonesia								
		yang benar:								
		"Goed"								
		Answer:								
	3	Translate the following words into the correct Bahasa Indonesia								
	•	words:								
		words.								
		(ID) Teriemahkanlah kata berikut ini ke dalam Bahasa Indonesia								
		vana bonar:								
		Siech								
		Deaths / (ID) Or at the								
		b. Angry / (ID) Marah								
		c. Good / <b>(ID)</b> Baik								
		d. Unwell / <b>(ID)</b> Kurang baik								
		e.								
	4	How do you introduce yourself in Dutch?								
		(ID) Bagaimana kamu memperkenalkan diri dalam Bahasa								
		Belanda?								
		a. Het gaat (name / <b>(ID)</b> nama)								
		b. Ik ben (name / <b>(ID)</b> nama)								
		c Hoe gaat (name / (ID) nama)								

# Appendix III: Questions to test post-treatment knowledge

d. Ben ik (name / **(ID)** nama)

Part	No	Questions						
Common	5	Shows a picture of a painter.						
communication								
words		What kind of profession is pictured above? Please answer it in						
		Dutch.						
		(ID) Profesi apakah yang digambarkan di atas? Jawablah dengan						
		Bahasa Belanda.						
		Answer:						
	6	Shows a picture of a photographer.						
		What kind of profession is pictured above? Please answer it in						
		utch.						
		(ID) Profesi apakah yang digambarkan di atas? Jawablah dengan						
		Bahasa Belanda.						
		Answer:						
	7	Shows a picture of a driver.						
		What kind of profession is pictured above? Please answer it in						
		Dutch.						
		(ID) Profesi apakah yang digambarkan di atas? Jawablah dengan						
		Bahasa Belanda.						
		a. Chauffeur						
		b. Slager						
		c. Schilder						
		d. Directeur						
	8	Shows a picture of a chef.						
		What kind of profession is pictured above? Please answer it in						
		Dutch.						
		(ID) Profesi apakah yang digambarkan di atas? Jawablah dengan						
		Bahasa Belanda.						
		a. Tolk						
		b. Kok						
		c. Tuinman						
		d. Fotograaf						

Part No Questions							
<b>Common</b> 9 Translate the following word into the correct Dutch words:							
communication							
words (ID) Terjemahkanlah kata berikut ini ke dalam Bahasa	Belanda						
yang benar:							
"Student" / (ID) "Pelajar"							
a Chauffaur							
a. Chauneur							
b. Student							
d Slagor							
0. Slager							
To Translate the following word into the correct Dutch words.	ransiate the following word into the correct Dutch words:						
(ID) Teriemahkanlah kata berikut ini ke dalam Bahasa	Relanda						
vang benar.	Delanda						
Jang Sonan							
"Thank you" / <b>(ID)</b> "Terima kasih"							
Answer:							
"What do I do 1 Translate the following word into the correct Bahasa Ir	donesia						
every day?" words:							
(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Ir	<b>D)</b> Terjemahkanlah kata berikut ini ke dalam Bahasa Indonesia						
yang benar:							
"Opstaan"							
Anower							
Allswel	donosio						
2 Translate the following word into the correct banasa in words:	uonesia						
wolds.							
(ID) Teriemahkanlah kata berikut ini ke dalam Bahasa Ir	Idonesia						
vang benar:							
"Drinken"							
Answer:							
3 Translate the following words into the correct Bahasa Ir	donesia						
words:							
(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Ir	donesia						
yang benar:							

Part	No	Questions						
"What do I do	4	Translate the following words into the correct Bahasa Indonesia						
every day?"		words:						
		(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Indonesia yang benar:						
		"Ontbijten"						
		a. Playing chess / (ID) Bermain catur						
		b. Waking up / <b>(ID)</b> Bangun						
		c. Having breakfast / (ID) Sarapan						
		d. Wasing dishes / (ID) Mencuci piring						
	5	Shows a picture of someone brushing their teeth.						
		What is the person in picture doing? Please answer it in Dutch.						
		(ID) Sedang apakah orang yang ada di dalam gambar ini? Jawab dengan Bahasa Belanda.						
		Answer:						
	6	Shows a picture of someone walking their dog.						
		What is the person in picture doing? Please answer it in Dutch.						
		(ID) Sedang apakan orang yang ada di dalam gambar ini? Jawabian dengan Bahasa Belanda.						
		Answer:						
	7	Shows a picture of someone playing basketball.						
		What is the person in picture doing?						
		(ID) Sedang apakah orang yang ada di dalam gambar ini?						
		a. Basketball het nemen						
		b. Basketball het lezen						
		c. Basketball het zingen						
		u. Basketdall net spelen						

Part	No	Questions							
"What do I do	8	Shows a picture of someone watching TV.							
every day?"									
		What is the person in picture doing?							
		(ID) Sedang apakah orang yang ada di dalam gambar ini?							
		a. Televisie nemen							
		b. Televisie spelen							
		c. Televisie kijken							
		d. Televisie bijten							
	9	ranslate the following word into the correct Dutch words:							
		(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Belanda yang							
		benar:							
		"Washing dishes"							
		(ID) "Mencuci piring"							
		a. Afwassen							
		b. Zingen							
		c. Douche nemen							
		d. Lezen							
	10	Translate the following word into the correct Dutch words:							
		C C							
		(ID) Terjemahkanlah kata berikut ini ke dalam Bahasa Belanda yang							
		benar:							
		"Tidur"							
		Answer:							

Experimental conditions		Gestures			No gestures		
	—	Ν	Mean	SD	Ν	Mean	SD
Happy face	Motivational statements	34	3.84	0.51	34	3.75	0.64
	No motivational statements	31	3.91	0.60	36	3.89	0.67
	Average of mean scores		3.88			3.82	
Neutral face	Motivational statements	33	3.60	0.59	32	4.02	0.61
	No motivational statements	35	3.61	0.59	32	3.88	0.54
	Average of		3.61			3.95	
	mean scores						

# Appendix IV: Interaction Effect Descriptive Analysis Table for "Satisfaction"

Experimental conditions		Gestures			No gestures		
	-	Ν	Mean	SD	Ν	Mean	SD
Happy face	Motivational	34	3.50	0.50	34	3.40	0.73
	statements						
	No	31	3.59	0.67	36	3.41	0.66
	motivational						
	statements						
	Average of		3.55			3.41	
	mean scores						
Neutral face	Motivational	33	3.28	0.65	32	3.53	0.60
	statements						
	No	35	3.28	0.61	32	3.60	0.51
	motivational						
	statements						
	Average of		3.28			3.57	
	mean scores						

# Appendix V: Interaction Effect Descriptive Analysis Table for "Purchase Intention"

Experimental conditions		Gestures			No gestures		
	-	Ν	Mean	SD	Ν	Mean	SD
Happy face	Motivational	34	3.55	0.44	34	3.54	0.59
	statements						
	No	31	3.68	0.57	36	3.42	0.78
	motivational						
	statements						
	Average of		3.62			3.48	
	mean scores						
Neutral face	Motivational	33	3.55	0.61	32	3.72	0.58
	statements						
	No	35	3.47	0.64	32	3.58	0.50
	motivational						
	statements						
Average of			3.51		3.65		
	mean scores						

# Appendix VI: Interaction Effect Descriptive Analysis Table for "Self-Efficacy"

Experimental conditions			Gestures		No gestures		
	-	Ν	Mean	SD	Ν	Mean	SD
Happy face	Motivational	34	16.79	2.84	34	14.93	3.73
	statements						
	No	31	15.26	3.03	36	14.67	3.07
	motivational						
	statements						
	Average of		16.02			14.80	
	mean scores						
Neutral face	Motivational	33	16.36	3.16	32	15.94	3.57
	statements						
	No	35	16.03	2.33	32	16.63	2.89
	motivational						
	statements						
	Average of	16.19			16.29		
	mean scores						

Appendix VII: Interaction Effect Descriptive Analysis Table for "Learning Outcome"