



The effect of social influence in video engagement and retention of video

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Abstract

Videos are a popular tool for delivering knowledge. However, it can be hard to watch a video and stay engaged because watching videos is a passive activity. Therefore, help should be provided to students to process the content, which will lead to effective learning. Social influence describes the way the behaviour of others influences the behaviour of the individual. Some preliminary research has been done to see if social influence can be used to increase engagement and whether this can be beneficial for acquiring knowledge. To further expand research in this area, this thesis focuses on *“Do social influence techniques improve engagement and retention-rates in educational videos?”*.

To investigate this question, self-report questionnaires and log data tested engagement, and a test checked the retention rates of videos. The experiment took place in an online setting, resulting in a group of 60 respondents. The experiment included a control group, where the group watched the video without social influence techniques, and the experimental group, where the video did have social influence techniques. The current research found no effect on social influence techniques on both engagement and retention rates of videos. Further research should aim to clarify if, and to what extent, to use these techniques to improve engagement and enhance learning from videos.

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Introduction

In today's society, much education is online. Videos have become more important in education because they provide an essential method of content-delivery in a wide range of educational practices. An example of the latter is a Massive Open Online Course (MOOC) that can accommodate unlimited numbers of learners and has made knowledge accessible for everyone via the internet (Xiong et al., 2015). It is a challenge for both colleges and students to maintain a high level of engagement and retention rates of videos. To ensure that videos are an essential part of learning, the videos must be as effective as possible.

Videos are widely used and are readily available (Merkt et al., 2011). However, due to its the non-interactive nature, it raises the question of whether videos are sufficient for meaningful learning (Risko, Buchanan, Medimorec & Kingstone, 2013). Engagement is of great importance to enhance the learning of students (Schlechty, 2001). When students are more engaged, it will improve processing and, remembering and, in turn, retention of videos (Russell, Ainley & Frydenberg, 2005). In order to get the most out of videos, students should get help to get engaged in watching them. Attention should be paid to how students can engage with and learn from the video.

One possible way to improve retention rates of videos is to use social influence techniques (Wilde, 2016). Social influence techniques are interventions that try to steer behaviour. The content and how a message is framed and spoken influences the recipient's response. For example: a sign indicating not to litter has more effect in a litter-free environment, making the norm of no littering prominent by having a litter-free environment (Münscher, Vetter & Scheuerle, 2016). Social influence includes the potential influence on human behaviour through the presence of others, whether actual, imagined or implied (Stibe & Oinas-kukkonen, 2014). A useful technique would influence behaviour without being an apparent intervention, thus influencing the experiment.

Previous studies on online education focused on social influence techniques based on student interaction (Epstein & Cullinan, 1982). However, in new digital forms of learning, such as a MOOC with an unlimited number of participants, it is not easy to have a high level of interaction. There is a lack of social interaction (face-to-face interaction between instructor and learner) resulting in a lack of engagement and therefore, motivation (Xiong et al., 2015). In order to make educational videos more effective, learners need to be helped with social influence in order to improve their engagement. Because of the known positive effect of engagement on learning (Saeed & Zyngier, 2012), social influence seems a useful intervention because it is low-cost with the possibility of high output.

Social proof is one of the principles of social influence that is mainly used for online social influence techniques (Cialdini, 1993). With social proof, we determine what is correct by finding out what other people think is correct. We see behaviour as correct in a given situation to the extent that we see it carried out by others. One way to show social proof is through social comparison. An example

of social comparison can be seen in the Learning tracker widget, in which a learner can see how much time he or she spends in the online environment and how much time a successful learner spends on this element (David, Chen, Jivet, Hauff & Houben, 2016). Providing information about what other people do implies the expected behaviour. Social influence techniques can guide the learner to the desired behaviour in a low-cost manner by making the expected norm salient.

By implementing social influence techniques in an online video, people might be more engaged in continuing to watch a video and thus get higher retention rates of videos. Therefore, this research will focus on the following research question: *Do social influence techniques improve engagement and retention-rates in educational videos?*

The current study is an experimental study. Quantitative data will be collected using questionnaires and log-data. In order to investigate whether social influence techniques can help with engagement and retention rates on videos, a theoretical framework will follow after this introduction. Finally, a discussion will take place, and a conclusion will be drawn.

Theoretical framework

Educational videos

Videos have become increasingly crucial for the production and consumption of content (Chen & Wu, 2015). Meta-analyses have shown that this technology method can be beneficial and educational (Stockwell, Stockwell, Cennamo & Jiang, 2015). However, the use of video for learning is not yet entirely unchallenged (Merkt et al., 2011). Watching videos is an inherently passive form of learning (Dimitrova et al., 2017). To be able to learn from videos effectively, active engagement with the content is best (Dimitrova et al., 2017), for example, being able to control the pace and be able to replay parts.

When designing an educational video, it is essential to pay attention to how memory and learning work. The Cognitive Load Theory (Sweller, 1988) describes how memory happens. Information is gathered by what a person sees and hears. Then, a selection takes place to what information is essential and which requires attention. Not everything that a person sees and hears can be acknowledged and remembered, this selection happens in the working memory, which has a limited capacity. Finally, the things someone paid attention to, get processed and then stored in the long-term memory.

From the above, we can learn that learners are not able to remember everything from a video. Careful consideration should go into what information gets presented to the learner. The core content must be explained well so that working memory can focus on understanding and storing information in the long-term memory. There should not be information included that is unnecessary for understanding. To be able to store information in the long-term memory, it is important to remain engaged with the content. Therefore, it is worth exploring how to keep learners engaged

Engagement

For a student to get the most out of their study time, engagement is of great importance (Saeed & Zyngier, 2012). Learners should be engaged to learn effectively from the video. When watching videos, learners should focus on the critical information provided during videos (Risko et al., 2013). Engagement can be understood as a series of interactions during learning (Wiebe, Lamb, Hardy & Sharek, 2014). Kuh (2009) states that engagement refers to the quality of effort and participation in authentic learning activities. Engagement requires activity on the part of the learners.

Engagement can be seen as a continuum, from engaged to disengaged. Researchers have applied both objective and more subjective measurements of engagement (Darnell & Krieg, 2019; Maier, Waldstein & Synowski, 2003; O'Brien & Toms, 2008). Observation measurements have been used in the context of computer-based activity log-data from interaction with the system. However,

self-report measures (subjective measurements) are still the most popular. Engagement can also depend on motivation; intrinsically motivated learners show a higher level of engagement. However, relying all the time on intrinsic motivation is simply not realistic. Engagement often also requires extrinsic motivation (Xiong, et al., 2015).

The latest theories allow a combination of the two. Human activity often entails both types of motivation. An individual may be interested in the content of a video and thus be intrinsically motivated to watch it. At the same time, this person needs the information in the video for a deadline article and is thus extrinsically motivated to see it to meet this deadline (Amabile, 1993). Disengaged learners can still complete the work, but engaged learners can receive higher results (Saeed & Zyngier, 2012). Intrinsically motivated students are more engaged, so efforts to improve engagement should focus on intrinsic motivation and only use external motivation to increase internal motivation (Saeed & Zyngier, 2012).

Integrating interactivity in videos is a way to improve engagement, but also requires considerable effort from the teachers and makes it difficult to reuse the content. Another way to improve engagement and active learning can be achieved through the use of social influencing techniques. These techniques could make it possible to guide students and increase their involvement.

Social influence

When designing an effective intervention, it is essential to know how social influence works and how to apply this in an educational setting in a way that improves engagement. People do not behave in isolation but are always in a social and cultural environment (Cialdini, 2001). The behaviour of others influences the behaviour of the individual (Cialdini & Goldstein, 2004). Making social norms more salient has proven to be effective in influencing behaviour in other fields; one famous example is the reuse of hotel towels. The reuse would depend on the given information if other hotel guests reused their towels or not (Goldstein, Cialdini & Griskevicius, 2008). Norms can have an influence on behaviour to the extent that it is salient (Kenrick, Goldstein & Braver, 2012).

Positive learning behaviour can be encouraged through social influence (Damgaard & Nielsen, 2018). Knowledge about what peers are doing can be used to persuade people towards the desired behaviour. It is best if the intervention focuses on what ought to be done. Focusing on negative behaviour showcases the salience of this behaviour. It should be a message of positive behaviour without a focus on negative norms. An intervention that focuses on that people get distracted and should pay attention to the video, focuses on the descriptive norm that people get distracted.

Injunctive norms are about behavioural change looking for the approval of others (Goldstein & Mortensen, 2012). These behavioural changes require effortful self-control to adhere to the norm.

Individuals are most likely to follow this norm if they see the reference group as similar in identity to themselves (Kenrick, Goldstein & Braver, 2012). The intervention in the video should mention the behaviour of peers, therefore providing a social norm and salience. This might motivate individuals to adhere to the same conveyed injunctive norm. The desired behaviour in this study is that of high engagement during video watching.

Learners will be shown positive learning behaviour such as high engagement which might persuade them also to show the desired behavior. Social influence techniques could be small interventions that do not take away from the intrinsic load. The goal is that this information transforms video watching from a passive to an active-learning event (Brame, 2016).

Design principles

Cialdini (2001) describes six tendencies of human behaviour that play a role in influencing actions and attitudes: consensus, consistency, liking, authority, scarcity, and reciprocity. The theory of social influence is mostly used in the fields of marketing and communication (Fennis & Stroebe, 2016), not in the educational context. These six tendencies help create the techniques for persuasion for the videos in this research. Examples of previously created interventions will guide the creation of social influence techniques for educational videos. The next part discusses each tendency on how and why they work. A discussion will also take place as to why or why not this tendency is suitable for educational videos.

Consensus

One of the most elemental forces that influence people's behaviour is the actions and opinions of others (Cialdini, 2001). We look at others to see how to behave, especially in situations where there is uncertainty. To the degree that people see the behaviour of others, they will see that behaviour as correct. It is possible to take advantage of consensus by demonstrating that others have already complied with a specific behaviour. For example, in a study about donations participants who received information about peers like them, they donated a more generous amount of money than participants who did not receive this information (Shearman & Yoo, 2007).

However, under certain circumstances, consensus can backfire and have an opposite effect (Petrova, Schwarz & Song, 2012). By showing that undesirable behaviour is frequent, it makes undesirable behaviour more salient. As a consequence, this generates even more undesirable behaviour.

In educational videos, attention should be paid to how many people are showing desirable behaviour. Consensus could be a strategy to encourage engagement during the watching of the video. The present study focuses on the normative belief that other engaged learners will score better on the test. The participants in the experimental condition will receive videos with social influence techniques

embedded. The participants in the control condition received a video without information on the behaviour of others. Table 1 contains the different scenarios. The expectation is that the participants who receive consensus information will use the social comparison as a cue that engagement is desirable behaviour and worth doing because it will lead to better test results.

Consistency

People want to behave in line with their statements. When people say they are going to do something, this can create a bad feeling when they do not do it. As soon as people make a specific statement, it generates internal pressure to behave consistently with that statement. This pressure can be an automatic process, so they do not have to think about everything they say and do, even though it is not always the right choice (Cialdini, 1993).

People generally want to behave in consistence with their previous behaviour and attitudes (Festinger, 1957). However, this is not always the case—individual preferences for consistency cause variation in the desire to be consistent. Cialdini, Trost, and Newsom (1995) developed a scale to measure the differences. People with a high preference for consistency were more perceptible for consistency techniques than People with a low preference for consistency, especially when consistency was salient.

For educational videos, it could be favourable to ask a commitment of People to watch the whole video and to be engaged. This way, if they agree with a statement, they will change their behaviour to be consistent with it. Table 1 shows the different scenarios for participants asking to state the commitment that they view themselves as good students. The expectation is that participants who have done this will show higher engagement. By adhering to the statement, the expectation is that the participant will show behaviour consistent with what it entails to be a good student.

Liking

People prefer saying yes to others they like. Three factors play a role in liking: physical attractiveness, similarity, and compliments (Cialdini, 2001). It is harder to say no to someone whom we find attractive. The same goes up for similarity. We tend to like someone more if they are like us and have shared interests. Lastly, people love compliments. Friendly comments will always have an effect. If someone gives a compliment, the receiver will always think more positive about the giver, even when the receiver is aware that the compliment can be for gain or not meant (Cialdini, 1993). Joe Girard, who chosen as the best car salesman in the world, knew this. Every month he would send his clients a card with the text “I like you” like he was a friend. Even though clients knew the compliment was in his benefit, it still paid off (Cialdini, 2001).

Liking is also possible by association. When the weatherman predicts good weather, people will like him more. People like to associate with success and positivity (Cialdini, 2001).

In educational videos, viewers must learn from the video. It could be that if viewers like the person in the video, they will pay more attention to what is said. Table 1 contains a compliment for the experimental group. The expectation is that viewers who receive a compliment will like the video more and would, therefore show a higher level of engagement.

Authority

People are susceptible to authority. When an authority figure says something, it must be true, or so we think. People who look like they have authority have more persuasion power. The use of celebrities who play authority figures, such as doctors or politicians, give viewers perception of authority (Cialdini, 2001). When using these actors for endorsing a product, it harnesses the authority principle from their previous roles (Cialdini & Cialdini, 1993). Usually, there is nothing wrong with this tendency; the opinion of trustworthy authorities and their insights can help to choose quickly and satisfactorily. It can be problematic when trusting the wrong authority.

In an educational video, it can be useful to show the credentials of the person discussed in the video and source to trustworthy sources. This indicates how reliable the authority is and may persuade people to listen closely to what they have to say. Table 1 contains the different scenarios for the use of authority. The expectation is that the experimental group will see the authority figure as a person worth their time to listen to.

Scarcity

Items and opportunities become more desirable the scarcer they are. This principle can apply to information as well. If information is exclusive, it is more persuasive (Cialdini, 2001). The rule of scarcity goes that something rare is more valuable. Scarcity piques interest because if items, opportunities or information is rare, people have to decide quickly to do something with it. This is why, when booking a hotel room, the website will display information like “Only two more rooms available”. In the eye of the viewer, this makes the hotel room seem more wanted and therefore, more desirable (Cialdini, 2001).

In educational videos, it is hard to appeal to this tendency. Educational materials are many times always available and should be in this experiment as well; people should get the opportunity to watch and re-watch parts of the video, which is in direct contradiction with scarcity.

Reciprocity

The societies we live in adhere to the norm to repay what they have received. This principle includes gifts, favours but also concessions to one another. This obligation is good for society; reciprocity helps with achieving common goals and making concessions (Cialdini, 2001). Reciprocity is about gifts and concessions that people make to one another.

In the context of education, there is long term reciprocity; for example, getting a degree after studying. However, in educational videos, it is harder to speak of reciprocity. The videos are pre-recorded which makes a concession unattainable. Within the context of educational videos, there are no concessions to be made for the instructor to make people view the video. Working with gifts could be possible within the confounds of the experiment but is impractical when educational materials are freely available.

Research questions and model

This study aims to look into ways social influence techniques can help improve engagement in educational videos. High engagement predicts better retention for learners. If social influence techniques can guide learners into desired behaviour, which consists of high engagement, the knowledge gain can be improved. The main question for this study is, therefore: *“What effect do social influence techniques have on engagement and retention in an educational video?”* To be able to answer this question the following sub-questions will be answered:

1. What is the effect of social influence in educational videos on engagement?

In the experimental group, it is expected that social influence techniques steer people towards engaging behavior.

2. What is the effect of social influence in educational videos on retention rates?

In the experimental group it is expected that, since the video should steer behaviour into good viewing behaviour, the experimental group is more engaged and therefore should have a higher retention rate.

3. What is the relationship between engagement and retention rates?

Since engagement is important for learning outcomes, it is expected that a relationship can be found between engagement and retention rates of video.

Research design and methods

Research design

This research will consist of quantitative data gathering. For the quantitative data, an experiment was carried out with educational videos. The educational videos for the experimental group will contain 12 social influence elements. The control group will watch the videos without the social influence elements. After the video, both groups need to answer some questions about the videos to see if the learning outcomes differ.

Respondents

This research aims to investigate whether social influence techniques can convince learners to be more engaged in watching videos and thereby achieve higher retention rates of videos. Students from the University of Twente were involved in the research. It is, therefore, a homogenous sampling form because the participants come from a small group. All participation was voluntary. The link to the study could randomly send a learner to the control group or the experimental group. This research aims to measure whether there is a difference between the control group and the experimental group; therefore, thirty participants per group are considered sufficient to draw conclusions (VanVoorhis & Morgan, 2007). An insufficient sample size cannot demonstrate the desired difference, and an extensive sample can make the research more complex, making it unfeasible for the duration of this master's thesis (Martínez-Mesa, González-Chica, Bastos, Bonamigo & Duquia, 2014). All participants were asked to give informed consent for their participation.

In the end, 68 people completed the study; there were 33 people in the control condition and 35 people in the experiment condition. The average age of the respondents is 25.6 (SD = 11.2); 52% of the sample consists of women (SD = .5). People rated their overall knowledge on meta-ethics on a scale from 1 (not knowledgeable at all) to 10 (very knowledgeable) as a 3.2 (SD = 1.8). Two respondents were excluded from the analysis because of probably unreliable data. One respondent appeared to have watched each video three times; another respondent scored less than 1 point on the final test, indicating that the test was not completed.

Instrumentation

Instrumentation for social influence

The twelve social influence techniques embedded in the videos are described in Table 1. Before watching the videos, the participants were required to answer some questions. The experimental group received two additional questions namely; whether the participants considered themselves a good student and how others would rate them as students, these had to be answered on a Likert scale from 1 to 7. These questions were based on one of the social influence techniques that used the consistency principle. The remaining eleven social influence techniques were added to the videos.

Participants were not made aware of the goal of the research; otherwise, they could try to be more engaged. For this reason, they received incomplete information about the social influencing techniques. They are after the experiment informed about the nature and techniques used in the research. The difference between the control group and the experimental group is that the latter will view videos with the social influence techniques embedded. The social influence techniques differ in their nature, some are auditory and others visual.

In the first video, three social influence techniques were embedded. All three social influence techniques were added in the audio. These interventions were based on the liking principle and the consensus principle. For the liking principle technique, the presenter gave a compliment to the participants. The presenter mentioned expected behaviour for the consensus principle. In the second video, five social influence techniques were embedded in the video. The techniques were based on the principle of authority and consensus. In this video, the presenter mentioned philosophical theories. To emphasize the philosophical theories, the presenter mentioned examples of famous philosophers and showed a picture of those who were followers of the theory. In the third video, the video included two social influence techniques based on the principle of authority. Here, too, the presenter mentioned famous philosophers and showed famous books or a picture of the philosophers. The last video had one social influence technique based on the principle of liking. The presenter gave a compliment to the participants.

To make sure that the effect of social influence makes the difference, not the additional information, the control group received neutral statements which are described in table 1.

Table 1: Definitions and examples of the six principles of influence by Cialdini

<i>Social influence Technique</i>	<i>Definition</i>	<i>Example</i>	<i>Intervention</i>	<i>Control</i>
<i>Consensus</i>	We determine what is correct behaviour by finding out what other people think is correct.	A hotel gives the information that 75% of people who check in reuse their towels. Guest who receive this information show increased towel reuse (Goldstein, & Griskevicius, 2008).	'Audio' Even though the topic is a bit abstract, most people thought the video was interesting.	The topic is a bit abstract.
			'Audio' Students generally get the best results if they first watch the entire video before answering the questions. Therefore, you are expected to watch the whole video before answering the questions.	You are expected to watch the whole video before answering the questions.
			'Audio' Other viewers found the following section a bit dense with information, so pay close attention.	Pay close attention to the following section.
<i>Consistency</i>	A person stating something and acting in line with it. Written or verbal pledge or promise to engage in specific actions.	Asking to call if you want to cancel your restaurant reservation (2001).	'Questionnaire' Do you consider yourself a good student? 'Questionnaire' Would others consider you to be a good student?	-
<i>Liking</i>	When you flatter a person, it increases their chance to comply to your request.	Tupperware home parties use an in-home demonstration, the customers buy from a liked friend rather than an unknown salesperson (2001).	'Audio' You have already come this far in the video, good job.	We are almost at the end of the video.

			'Audio' First of all, thanks a lot for your willingness to participate in my research, I really appreciate it.	'Audio' Hello, thanks a lot for participating.
<i>Authority</i>	People follow the lead of believable experts.	"Four out of five doctors recommend" harnessing the power of authority (2001).	Making names of scientist and reliable sources explicit throughout the whole video.	-
<i>Scarcity</i>	Opportunities become more valuable when they are or become less available.	Due to a fire, meals from the canteen would not be available, increasing the rates. Ratings of canteen food rose because of a fire the meals would not be available (2001).	-	-
<i>Reciprocity</i>	Given back when you have received first.	When a friend invites you to a party it creates the obligation to invite said friend to a future party you are hosting (2001).	-	-

Instrumentation for the educational video

The video made use of the content of a video on meta-ethics (Kane B, 2014). This content was chosen because it was an introduction, so no prior knowledge was needed. The video was recreated to make it more similar to what a recorded lecture looks like. Also, to be able to insert the social influence techniques, the instructor would have to re-record parts of the video with minor changes.

The videos showed a PowerPoint and a window with the presenter. The presentation follows the guideline for personalization, for which the words should be in a conversational style (Mayer, 2005). The presenter speaks without too much of an accent that it could be a distraction (Mayer, 2005). The original video (Kane B, 2014) did need some alterations, a lot of printed text was also spoken text, according to the redundancy principle, it is better to not add printed text to spoken text (Mayer, 2005) to minimize extraneous processing. The original video did not follow the multimedia principle either, pictures have been added to comply with this directive.

The PowerPoint was built up with human perception, memory, and understanding in mind (Kosslyn, Kievit, Russell & Shephard, 2012). When the presentation is made in a way that avoids extraneous processing, it will be the most effective in remembering and comprehending what is being said. Terminology not known to the public is explained, the pictures used correspondent to typical examples (icon of a pianist for a famous musician), and graphics illustrate relevant concepts (Kosslyn et al., 2012).

Instrumentation for log data

Several different approaches can be used to measure engagement. To measure engagement objectively, technology such as eye-tracking has been considered. However, it is difficult to say when a learner looks at a screen a long time, whether this tracks engagement or uncertainty about what to do. Secondly, engagement, as referred to in this study involves an emotional state that cannot be measured with eye-tracking. However, there are objective physiological measurements that are used as indirect factors for engagement. These can be the measurement of skin conductivity (Pecchinenda, 1996), blood pressure (Maier, Waldstein & Synowski, 2003), heart rate (Cranford, Tiettmeyer, Chuprinko, Jordan & Grove, 2014; Darnell & Krieg, 2019), and pupil size (Hess & Polt, 1964). The heart rate coincides closely with the measurements of pupil size and skin resistance. Other research confirms that heart rate and engagement are correlated, and heart rate may indicate more significant cognitive effort (Cranford et al., 2014).

A different non-intrusive measure would be the use of log files. The log files can show the playtime, unique playtime, and replay time of the video. For each segment, a data log was constructed.

The following variables were displayed:

1. Unique playtime. This stands for the total time of unique played video.
2. Playtime. This represents the total time of video being played including playback, pauses and repetitions.
3. Replay time. This stands for the amount of time the video has been replayed after it has been fully played.

Instrumentation for human judgement measurement engagement

Metrics such as log data measure what happens while watching, but this does not address the viewers' sense of engagement, which is crucial for engagement. The most direct and widely used method for measuring engagement is self-reporting. One of the most promising scales for measuring engagement is the User Engagement Scale (O'Brien & Toms, 2008). This scale covers the various dimensions of engagement, such as the construct of flow, fun, novelty, pragmatic aspect of usability, and whether the user would like to re-engage. The subscales most applicable to video engagement are used for the questionnaire. The questionnaire asks for different aspects of engagement, namely; focused attention, perceived usability, and reward factor.

To report on engagement, the participant had to fill in 12 questions between the segments of the video. For the complete form, see Appendix 2: Form: engagement questions. Some examples of what questions looked like are: "I was absorbed in the video" and "I felt interested in the video". They had to answer on a seven-point Likert scale, where a high score indicates high engagement and a low score indicates low engagement. Three questions were inversely coded to indicate as well that a high score means high engagement. The mean of the 12 questions was generated to indicate engagement. The engagement scale for scale segment one had a Cronbach's alpha of .86, for segment two .87, for segment three .86, and segment 4 .91.

Instrumentation to measure knowledge gain

After the videos, a test was carried out. The test provides information about how much the participants have learned from watching the videos. The test contains questions based on the content of the lecture shown during the experiment; the total of 10 questions can be found in appendix 3. The control and the experimental group will conduct the same test. The answers were checked with the answer model found in appendix 4.

The test was set up with the taxonomy of bloom (Bloom, 1956). Most of the questions are from the lower part of the taxonomy. This was done because the video was an introduction.

Procedure

Participants were sent a link that would send them to the experimental or the control group. On the website, they had to fill in their nickname, which then led them to a page with the introduction of this study. Then they had to answer questions about their age and gender. They also had to indicate their knowledge of meta-ethics. The experimental group received two additional questions. After answering the questions, the participants needed to sign the informed consent form. After the introduction questions, the participants were asked to watch four videos and answer twelve questions about engagement in between. The videos was segmented for this. Inserting a break at an event boundary can improve memory (Zaks, 2010). The segmentation respects the event boundaries. Engagement was also measured throughout the video with log data. At the end of the videos, the participants were asked to complete a test with questions about the videos. After completing the test, debriefing the participant took place, explaining the real goal of the experiment. Again, participants were asked whether they allowed for the gathering of their data. It took the participants about forty minutes to complete the entire procedure.

Data analysis

To be able to answer the question: *“Do social influence techniques improve engagement and retention-rates in educational videos?”* a linear multiple regression analysis was carried out using the statistical program SPSS. First, all the variables were prepared in such a way that for every variable, a low score indicates low engagement or test outcome, and a high score indicates high engagement and a high test outcome. The log files were set as percentages of the videos watched. Each segment had three measurements for engagement; the four moments have been summed up and divided by four to give the mean engagement for unique playtime, playtime, and replay time. Low scores mean less viewing time and high scores mean more viewing time. For playtime the final ranges was from 72.1% to 127.8%. Unique playtime had a range of 68.5% to 100.1%. Replay time had a range of 0% to 29.4%.

The self-reported engagement was made into a single scale. Before constructing the scale, reliability analyses were conducted by calculating the Cronbach's Alpha. The items were then merged into scales by using the Mean.x function (with the total amount of items -3) to process the missing data. If a respondent had a missing value, it was corrected by filling in the average number of the other items from that respondent on the scale. This was done because the scale consisted of four scales, in a total of 48 questions. The aim was to measure total engagement, so again a mean was generated of the four measurement moments by adding up the means of the engagement moments and dividing them by four. This resulted in the following range of answer possibilities of a minimum score of 2.35 and a maximum score of 6.49. This indicates the general engagement over the four segments. In total, there were four missings; the regression analysis excluded these participants.

Test score was measured with ten questions for which the participants could score a maximum of 10 points. For each participant, the results were calculated by adding up the number of points they had. This resulted in a minimum score of 0.95 and a maximum score of 8.00. A low score on the test means a low retention rate of the videos, and a high score indicated a high retention rate of the videos.

To measure the difference between groups, the control, and experimental groups were dummified, (0) stands for the control group, and (1) for the experimental group.

The two groups will be compared to see if they differ from each other. The bivariate and univariate results are checked to see if regression analysis is possible. The analysis was conducted in four steps to test if there was a mediation effect to explain the difference between the control and experimental group. If there was a mediation effect, the experimental group should be more engaged than the control group. Engagement should also be able to predict the test score. There were 60 participants included in the analysis, except for the mediation analysis, which consisted of 64 participants.

Two regression analyses were carried out for the first sub-question. In the first analysis playtime was the independent variable; the dependent variable was the intervention. In the second analysis, self-reported engagement was the independent variable, and the intervention was again the dependent variable.

For the second sub-question, a regression analysis was carried out with the test score as the independent variable and the intervention as the dependent variable.

To be able to answer the third sub-question, a regression analysis was conducted with test score as the independent variable. The dependent variables were the intervention, self-reported engagement and the log data variables; playtime, unique playtime, and replay time.

Before the regression analysis was carried out, the assumptions for a linear model were checked. There are four assumptions associated with a multiple linear regression analysis. The data was slightly skewed to the left; a stricter alpha level could be maintained. However, as the number of participants is low, the highest reliability is not a requirement.

Results

In this chapter, the results of the analyses are discussed. The research question in this thesis is to see if social influence techniques can make a difference in test scores and engagement in educational videos. To be able to test this question, three sub-questions were generated looking at the relations between test score, engagement and the social influence techniques. Regression analysis for a mediation effect was conducted. Both groups followed the same procedure with the difference being that the experimental group had social influence techniques imbedded in the experiment. Any differences that turn out between the two groups are the result of the social influence techniques.

Table 2

<i>Group</i>	<i>Gender</i>		<i>Age</i>	<i>Prior knowledge</i>
	<i>Male</i>	<i>Female</i>	<i>M(SD)</i>	<i>M(SD)</i>
Control (33)	16	17	24.12 (9.03)	3.15(1.82)
Experiment (32)	16	16	27.27(13.22)	3.40(1.90)
Total	32	33	25.70 (11.34)	3.24 (1.84)

*Measured on a scale of 1 to 10, respondents were asked how knowledgeable they would rate themselves on meta-ethics

Table 2 and 3 show the descriptive statistics of the relevant variables for this research. In table 2, the descriptive statistics for the control variables are given. Checking for randomization of participants for gender ($\chi^2(1,65) = 0.02$ $p = 0.90$, age ($t(56,55) = -1.13$ and $p=0.26$) and Prior knowledge ($t(63,89) = -0.40$ and $p = 0.69$). No significant differences were found. These variables will thus not be included in the main analysis because they do not have any meaningful differences or correlations with other variables.

Social influence and engagement

The first sub-question states a relationship between social influence techniques and engagement. It is supposed that social influence techniques have a profound effect on the measures for engagement. If this difference can be explained through engagement, the expectation is it that the measurements for engagement, self-reported and log-data show a difference between the groups. When looking at the differences, indicated in table 3, for self-reported engagement, the control group has a higher mean than the experimental, indicating a slight negative relationship between self-reported engagement and social influence techniques. This is however not a significant difference ($t(59,55) = 0.32$ and $p=0.75$).

If engagement could explain the difference, the mean for the experimental group should be higher than that of the control group. The results did not indicate a significant difference between the groups. Neither the self-reported engagement nor the log data results showed a difference in engagement between the groups.

For self-reported engagement, a negative slope of -0.068 ($p = 0.75$) was found for the intervention. Another regression analysis with playtime as the measurement for engagement shows that the intervention has a slope of $b = 1.65$ ($p = 0.563$). Social influence techniques have a slightly negative effect on self-reported engagement and positive on playtime; however, this is not significant. To test the mediation completely, the slope of the intervention should be smaller when all the measures for engagement are included in the regression analysis. This is not the case. The slope for intervention, all variables included, is $b = 0.535$ ($p = 0.292$). If there was a mediation, the expectation is that this slope would be smaller, because parts of the difference in the groups should be explained by engagement. The explained variance of this model ($R^2 = 0.05$) indicates that there is no significant support for a mediation effect.

Social influence and test score

The relationship we are looking at is between social influence techniques and retention rates of videos on meta-ethics. Taking a look at the second research question, it supposed that intervention makes a difference in test score. First of all, it is important to know if there was a difference in test scores at all between the control and experimental group. The control group has a higher mean than the experimental groups, giving the first indication of a positive relationship between test score and social influence techniques. On a scale of 1 to 10, this can be interpreted as quite a big difference. However, this difference is not significant.

In the regression analysis, social influence techniques do not indicate a significant contribution in explaining a difference in test score. However, people in the experimental group score $b = 0.42$ ($p = 0.36$) higher on test score than people in the control group. This is quite a big difference on a scale of 1 to 10, although not significant—the explained variance ($R^2 = 0.01$) which also indicates a non-significant effect.

Engagement and test score

The third sub-question is about the relationship between engagement and test score. If there is a mediation effect, besides that the intervention should show a difference in test score, it should also be the case that engagement explains a difference in test score. The measurements of self-reported engagement show a positive correlation ($r = 0.08$; $p = 0.55$) with test score, however not a significant correlation. In a regression analysis with the variables for measuring engagement, the variable for self-

reported engagement also shows the biggest slope with $b = 0.29$ ($p = 0.34$). The scales between log-data engagement and self-reported engagement differ; in this case it makes more sense to look at the standardized Beta. Self-reported engagement ($\beta = 0.135$) again showed one of the bigger slopes.

The log-data playtime and unique playtime show negative correlations with test score, replay time shows a correlation of $r = -0.50$ ($p = 0.72$), however not significant. This indicates that participants with a higher replay time score lower on test score. Playtime also shows a slope of 0.004 ($p = 0.92$), playtime can explain test score partially as well, considering this is on a scale of 1 to 127.79. It stands out that replay time has a negative effect ($b = -0.036$; $p = 0.407$). Participants who replayed more scored lower on test score. Since the scales between log-data engagement and self-reported engagement differ, the standardized Beta is a better way to make comparisons, replay time ($\beta = -0.152$) showed the biggest slope.

Furthermore, there are high correlations between playtime, unique playtime and replay time. This is to be expected, since a part of playtime is the same as unique playtime and replay time.

Concluding, it seems that none of the engagement variables can explain the difference in test score, although this difference is not significant.

Table 3

	<i>Self-reported engagement</i>	<i>Play time</i>	<i>Unique Play time</i>	<i>Replay time*</i>
<i>Group</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
Control	4.15(0.85)	100.0%(7.1%)	97.8%(1.2%)	0.44%(1.3%)
Experiment	4.08(0.84)	101.7%(14.5%)	95.4%(9.6%)	5.06%(0.8%)
Total	4.12 (0.83)	100.8% (11.4%)	96.6% (7.2%)	2.8% (7.2%)

The mean for self-reported engagement is a scale from 1 (not engaged) to 7 (very engaged). Playtime, unique playtime and replay time are all indicated as percentages of video watched. *Replay time has a significant difference between the groups of ($t(33,17) = -2.73$; $p = 0.01$)

Discussion

The question central to this thesis is “Do social influence techniques improve engagement and retention-rates in educational videos?”. To be able to answer the question, eight videos on meta-ethics were produced. The experimental group saw four videos which included social influence techniques. The control group was shown four videos with neutral statements. A questionnaire and log data measured the engagement of the participants. A test measured the retention rates of the videos on the content of the videos.

In this thesis, it was supposed that positive learning behaviour could be encouraged by social influence. However, the results showed no difference in engagement between the groups.

Also, the assumption for the relationship between social influence and retention rates of videos was that, since the intervention should encourage good viewing behaviour, the experimental group would be more engaged and therefore should have a higher retention rate. The results indicated that there was no significant difference in retention rates of videos between the control and the experimental group.

The expectation for the relationship between engagement and retention rates of videos was that engagement would be a good indicator for retention rates of videos. The expectation was that engagement is important for retention rates since active engagement with the material can improve processing and remembering. The results found no engagement to explain a difference in video retention rates.

A more detailed discussion of the results follows in the next sections.

Social influence and engagement

The first sub-question was 'what is the effect of social influence in educational videos on engagement?'. Concerning the first sub-question, the results show that the intervention does not lead to more self-reported involvement, nor does it lead to greater involvement in the log data. In this thesis, it was supposed that positive learning behaviour could be encouraged by social influence. By making 'paying attention' the norm through the interventions, the expectation was that the participants would be more engaged. However, compliance with social norms is mainly done by seeking the approval of others. In this thesis, the participants were alone on their computer. Social influence would have been more substantial and will occur more often when participants see a reference group behaving in the same way (Kenrick, Goldstein & Braver, 2012).

Paying attention and being engaged also requires effort. Social influencing techniques can influence individuals' decisions to a certain extent. In a relatively long experiment in which the participant has to pay attention for a long time, social influencing techniques are not able to keep

everyone engaged. It seems that, in order to maintain the attention for a new subject, merely indicating how others are doing is not enough to keep involvement high.

Social influence and test score

The second sub-question is 'What is the effect of social influence in educational videos on retention rates?'. In answer to the second question, there was an effect of social influencing techniques in the retention rate of videos. People in the experimental group with social influence techniques showed a higher average on test-score, indicating that they had a higher retention rate than people from the control group, but this was not significant. The expectation was that by providing the behaviour of others, this would set a norm of expected and good learning behaviour. By having 'paying attention' as the norm, learners would also pay attention and therefore get higher retention rates of videos. The results indicated a positive effect; however, this was not significant.

Despite the small effect, it could be the case that social influence techniques are of importance in an educational setting. Using social influence techniques is an unobtrusive way to guide learners to the desired behaviour. The use of social influence techniques could benefit from a better understanding of the learners viewing behaviour. For example, knowing the context of the learner and adapting the techniques to the personal situation. To help learners retain content of videos better, social influencing techniques can be a low-cost solution (Wilde, 2016). That is why it is worth continuing to explore the use of social influencing techniques in an educational setting.

Engagement and test score

About the third question, 'what is the relationship between engagement and retention rates?' the results indicate that engagement (self-reported) does seem to make a difference in retention rates, but that this is not significant. The expectation was that engagement is vital for the retention rate of videos because active involvement in the material can improve processing and remembering. This is in line with the existing literature, which found that learners engagement influences the outcomes (Lau & Roeser, 2002). It is important to look at ways to make learning materials more engaging so that people can learn more from them. An engaged learner shows a persistence to accomplish goals (Schlechty, 2001). However, when imposing learning, the learner is less likely to display engaging behaviour (Bowen, 2003). Although participation was voluntary, the topic in the experiment was not something participants were genuinely interested in. Some participants might have participated for other incentives, such as gathering research points of the University of Twente.

Finally, careful consideration should go into the design of the techniques. The intervention group did score higher on the test, but only by half a point average. It is a low-cost intervention, but the expectation should also be of a small effect on engagement and retention rates of videos. Social

influence techniques are not the only solution; engagement and motivation are multi-faced aspects to tackle in education (Wehlage, 1989).

Social influence

Social influence techniques are subtle interventions that steer people's behaviour (Cialdini, 2001). The success of a social influence intervention partly depends on whether the learner pays attention to it. Moreover, when the learner paid attention to the intervention, they will have to let the intervention influence them and then change their behaviour accordingly (Briñol & Petty, 2009). This thesis used social influence theory in a new setting, thus broadening the understanding of the implications and the use of this theory. The theory is used mostly in the fields of marketing and communication (Fennis & Stroebe, 2016). In this thesis, the theory is used in an educational setting.

No positive relationship was found on the outcome of test scores. There may be several reasons for this. First of all, there is still a discussion going on whether participants should be aware of the intervention. The effectiveness of the interventions could decrease because the participants are aware of the intervention, but this has not been tested (Chartrand, 2005). Sometimes individuals react more positively if they are made aware of the link between stimuli and desired behaviour, this can lead to the intervention being more or less effective (Gorn, Jacobs & Mana, 1987). In a recent experiment, which included the reason for the intervention, people generally welcomed the intervention, because it helps to guide them to the desired behaviour. However, it is still unclear whether awareness impacted the effectiveness of the intervention (Kroeze, Marchiori & De Ridder, 2015). In this thesis, it may be that at some point participants were aware of the fact that the interventions aimed at guiding their behaviour, which resulted in decreased effectiveness of the intervention. This could explain the lack of results in the intervention group. More research needs to be done to be sure whether the awareness of social influence technique influences the effectiveness.

Secondly, looking at the consensus principle, people's behaviour is influenced by the actions of others (Cialdini, 2001). The intervention focused on desired behaviour, with a focus on what others are doing. The social influence technique intervention regarding the consensus principle for this study was based on sound, namely spoken text. It could be the case that participants ignored the notion. Other studies use written techniques making the norm more salient (Jacobson, Mortensen & Cialdini, 2011). The intervention could not have been salient enough, which made it less effective and explains the lack of results.

Thirdly, the experiment used the consistency principle at the beginning of the experiment. In other studies, the experiment is usually less intensive. In this study, however, two short questions about consistency were used over the entire experiment, which lasted about forty minutes. In future research, it would be interesting to test whether making consistency salient several times works better.

Lastly, the principle of authority and preference may not be credible and may, therefore be less effective. The effect of an intervention strongly depends on where the message comes from (Cialdini, 2008). When the credentials of a discussed person are shown, it indicates the reliability of the authority. It can, therefore convince people to listen carefully to what is discussed. Subsequently, the 'liking-principle' is also used to determine whether this source is reliable. If the authority principle or the liking principle did not work in the intervention, the effectiveness of the intervention is reduced. This study used books, names and pictures of philosophers for the authority principle. It could be that especially contemporary philosophers are less well known. Learners could not give an indication of reliability based on unknown authority. Therefore, the use of this intervention did not succeed in speaking to the tendency to believe authority figures.

Limitations and recommendations further research

There were also certain limitations to this research. Firstly, self-reported engagement and log data engagement did not show a high correlation, indicating that they did not measure the same aspects. Engagement has many different dimensions and means of measurements. There are multiple facets of engagement that are important in an educational setting, such as the time needed for the task and the way information is handled and processed (Appleton et al., 2006). Although social influence techniques do not seem to affect engagement, there is a possibility this research did not include the form of engagement affected by the social influence techniques. As mentioned in the methodology section, it would also be interesting to use objective measurements of engagement, such as eye-tracking or physiological measurements, to see if other dimensions of engagement can be measured.

Also, the online environment Graasp did not offer the possibility to check at what speed the participants watched the video. Furthermore, the possibility was left open, not to answer a question. Participants were at home while completing the study; this could be different from the place they would generally study. This context offered the researcher less control than a laboratory could have provided. For example, in this form, the participant could google an answer. There was no way to check if this happened.

A third limitation is that learners usually have other motivations for studying than completing an experiment. They may want to take a course for fun or be interested in a subject. These motivations were not the case for the videos on meta-ethics. Although it was an introductory video, the participants had to pay attention to understand everything, and without any sincere interest, it might have resulted in the participants being less committed.

Returning to the introduction, videos are becoming increasingly popular as a learning tool. That is why it is essential to look at ways to encourage engaging behaviour and increase retention rates of videos. This thesis aimed to see whether social influence techniques can increase engagement and

therefore, retention rates of videos. Social influence depends on the presence of others, whether actual or implied (Stibe & Oinas-kukkonen, 2014). This thesis, however, found no significant effect on implied others influencing the behaviour of participants. The lack of social interaction results in a lack of engagement. Since much education is online, this is an important subject that needs more research.

Conclusion

The research question "Do social influence techniques improve engagement and retention-rates in educational videos?" has been answered. The result of this research is that social influence techniques do not improve engagement, nor do they do improve retention-rates in educational videos. It is interesting to continue investigating the relationship between social influence techniques, engagement, and retention rates. In today's society, much education is given online, with pre-recorded videos or live lectures. It is a challenge for both colleges and learners to maintain a high level of engagement and retention so that education is as effective as possible. If a low-cost intervention can help, such as social influence techniques, it is worth looking at how this can help learners' study at home. This thesis contributed to taking the first steps of using social influence techniques in educational videos. Follow-up research could help to develop guidelines for teachers on what helps to keep their retention rates high in their education. Social influencing techniques, in particular, seem promising, precisely because it is a low-cost intervention. Hopefully, further research into social influence techniques in an educational setting can help to gain more insight into how to help learners with their engagement and retention rates of videos.

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Appendix 1 – Storyboard

Videos playlist control group:

<https://www.youtube.com/watch?v=mbhW51ai46E&list=PLvWWT6YYNX21MirEHfO96D2hvDOsmCZY&index=2&t=0s>

Videos playlist Experimental group:

<https://www.youtube.com/watch?v=u1f-PkPTheA&list=PLvWWT6YYNX209FWSOANp5tZwExtH-ARkj&index=2&t=0s>

On metaethics
+- 20 minutes

0.00 – 0.15 <i>First of all, a lot of thanks that you are willing to participate in my thesis research, I really appreciate it. I'm going to do a video on meta ethics because it's a very interesting subject. So in this introduction I'm just going to explain what meta ethics is all about and I'll give a sort of very brief general outline of various different theories and how they relate to one another. It is known that students who first watch the whole video before they answer the questions generally get the best results. Therefore you are expected to finish the video before answering the questions.</i>	 The slide is titled 'INTRODUCTION Metaethics'. It features a cartoon illustration of a bearded man in a blue robe on the left and a small video inset of the presenter on the right.
0.16 – 0.24 So what is meta ethics? Well there are three different branches of ethics it's sort of three different ways of approaching it.	 The slide is titled 'Three branches of ethics'. It shows a diagram where 'Ethics' is on the left, and three boxes labeled 'Applied', 'Normative', and 'Metaethics' are stacked vertically on the right, connected to 'Ethics' by a bracket.
0.24 – 0.40 First there's applied ethics, this addresses particular ethical problems so if you ask what is the right thing to do regarding, abortion, the death penalty, euthanasia, sexual behavior Animal Rights, the structure of the government, free speech, all that stuff that's all applied ethics. It deals with specific moral problems.	 The slide is titled 'Three branches of ethics'. It shows the same diagram as the previous slide. A small note next to the 'Applied' box reads: 'Applied ethics: Addresses specific ethical problems.' A small video inset of the presenter is visible on the right.

0.40 – 1.05
 normative ethics is closely related but, instead of focusing on specific problems it tries to figure out the general rules and principles that guide our behavior. so in normative ethics we develop general theories of ethics, utilitarianism, Kant categorical imperative, virtue ethics, egoism all this stuff, this is normative ethics. normative ethics provides frameworks and theories for dealing with the problems in applied ethics.



1.05 – 2.05
 Now meta-ethics is something very different to both of these. *Even though the topic can be quite abstract, most people think the video is interesting.* meta ethics ask questions like what is the meaning of moral statements, can moral statements be true or false, correct or incorrect, are there objective moral facts? if so what do they like and how do we find out about them? is morality universal or relative, and so on. so we're not really addressing moral problems we're not going to figure out whether abortion is right or wrong instead we're asking what does it mean to say that abortion is right or abortion is wrong. what are these statements express. I suppose there are other questions we might ask about ethics so there's you know descriptive ethics, which asks what ethical beliefs the people actually hold, how do ethical beliefs differ across different societies, so on. these are interesting questions but they're not especially for the



philosophical they're more for psychologists and anthropologists and so on.	
2.05 – 2.30 in philosophy we have these three branches of applied, normative, and meta ethics. also I should add that in philosophy we don't draw a distinction between ethics and morality. I've sometimes seen people do this a line I think I once heard say that morality has religious connotations whereas ethics doesn't. that might be true for everyday discourse but forget about it in philosophy. I use ethics and morality interchangeably they mean the same thing. Right.	
2.30 – 2.53 The primary split in meta ethics is between cognitivism, and non cognitivism. suppose I say 'Cecil Taylor' is a musician what's going on here, what does this mean. it's pretty simple, I'm expressing a belief about the world, I'm making a statement about the world, I'm describing the world, I'm saying that a certain object namely Cecil Taylor has a certain property namely being a musician. what I say is either true or false. as a matter of fact is true Cecil Taylor is a musician, is a very good one.	

2.53 – 3.50

but now consider a moral claim such as 'abortion is wrong'. does this express a belief about the world is this true or false. cognitivism is the view that moral statements are truth apt. that is they can be true or false. so statements like 'abortion is wrong' are not fundamentally different in kind from statements like Cecil Taylor is a musician. when I say abortion is wrong I express a belief about abortion, namely that it has the property of wrongness. non-cognitivism is the view that moral statements are not truth apt they are neither true nor false. so when I say abortion is wrong I'm not expressing a belief about abortion. I'm doing something else. for example I might be expressing my emotional disapproval of abortion. abortion is wrong might mean something like 'boo' to abortion, or maybe I'm expressing a command not to abort. so abortion is wrong means don't abort. and obviously we can't say that statements like boo to abortion are true or false it wouldn't make any sense to say that that's true or false. that's just an expression of your emotional attitudes

Cognitivism vs noncognitivism

	Versus	Abortion
		
Description: musician		Description: ...
True		True ? False ?

3.50 – 4.00

So we'll explore the varieties of non-cognitivism a little bit more later. the point for now is simply that non-cognitivist hold that moral statements are not true or false they don't express beliefs. they don't attempt to describe the world.

Cognitivism vs noncognitivism

	Versus	Abortion
		
Description: musician		Description: ...
True		True ? False ?

Cognitivism is the view that moral statements are truth-apt.
Noncognitivism denies that moral statements are truth-apt. Merely expresses emotional statement

4.00 – 4.35

So here's a chart, and here's a moral statement. now cognitivists put moral statements in the first column. non-cognitivist put them in the second. again so I hope that should make it reasonably clear. I should note that in philosophy the technical term for a statement that is either true or false is proposition. it's worth bearing this in mind because cognitivism is often defined as the view that moral statements express propositions. Non-cognitivism as the view that they do not express propositions. okay so with that distinction in mind, let's outline some of the main views.



Break

4.35 – 5.00

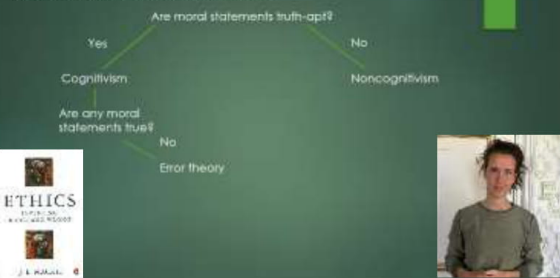
This is just a basic lay of the land I'm going to be very brief by no means exhaustive. I just thought it would be worth getting a general idea of where various positions lie. so I'm going to draw up a chart *which is basically the one given by Alex Miller and his introduction to contemporary meta ethics*. so there are a few questions we can ask then about the nature of moral statements. but first is are moral statements truth-apt, if yes cognitivism if no non cognitivism.



5.00 – 5.20

so if we're a cognitivist we can then ask well if moral statements are truth-apt, are any moral statements true right. and some people say no. some people say that all moral statements are false. this is known as the moral error theory *and it's most strongly associated with JL Mackay.*

Some main metaethical theories



5.20 – 6.20

so take any moral statement, abortion is morally wrong, abortion is morally permissible, it is good to give to charity, slavery is evil, we have a duty not to kill innocent people, all these claims are false. every single moral statement they're all false. the basic argument here is that when I make a moral statement such as, abortion is wrong, I purport to describe an objective feature of the world. I'm saying that abortion has the property of wrongness. but there are no such features. nothing has the property of being right, wrong, good, or bad. so moral values are not fundamentally different from unicorns or phlogiston(?) they just don't exist. so the error theorist has to defend two basic claims. first he has to show that moral statements should be taken at face value. so it's certainly true that superficially abortion is wrong looks like it has the same structure as cecil taylor is a musician. it looks like it expresses a belief about the world. the error theorist has to show that this superficial appearance is correct. and next he must show that we have no good reason to

Moral Error Theory

All moral statements are false.
I try to describe an objective feature of the world.
But there are no such features; moral values simply don't exist.

The error theorist must defend two claims:
First, show that moral statements should be taken at face value
Second, show that there are no objective moral values.

believe that there are any objective moral values, that's error theory.	
6.20 – 6.33 if we accept that some moral statements are true, the next question is, what exactly makes them true. are moral properties objective independent of people's opinions. if we answer, no, to this we have various forms of subjectivism or relativism.	Some main metaethical theories <pre> graph TD A[Are moral statements truth-apt?] -- Yes --> B[Cognitivism] A -- No --> C[Noncognitivism] B --> D[Are any moral statements true?] D -- Yes --> E[Are moral properties objective, independent of people's opinions?] D -- No --> F[Error theory] E -- Yes --> G[Subjectivism] E -- No --> F </pre> 
6.33 – 6.53 so individualist subjectivism is the claim that what makes moral statements true or false is just the attitudes of the individuals who utter them. so if I say abortion is wrong, I mean nothing more than I disapprove of abortion. the truth of moral statements is relative to the individual. my friend might think that abortion is perfectly acceptable in that case abortion is wrong is false for him even though it's true for me.	<u>Subjectivism</u> Individualist subjectivism: Moral statements are made true or false by the attitudes of the individuals who utter them. If I say "abortion is wrong" I mean nothing more than "I disapprove of abortion." The truth or falsity of moral statements is relative to the individual. 
6.53 – 7.45 on the other hand there's cultural subjectivism or cultural relativism, this is a view that moral statements are made true or false by the attitudes of the culture as a whole. <i>Others mentioned that the next part is a lot of information at once, so pay close attention.</i> in societies that disapprove of abortion, abortion is wrong is true. in societies that approve of it it's false. I should point out that it is important to distinguish descriptive relativism from metaethical relativism. it is a fact that different people in different cultures have quite	<u>Subjectivism</u> Individualist subjectivism: Moral statements are made true or false by the attitudes of the individuals who utter them. If I say "abortion is wrong" I mean nothing more than "I disapprove of abortion." The truth or falsity of moral statements is relative to the individual. Cultural subjectivism: Moral statements are made true or false by the attitudes of the culture as a whole. In societies that disapprove of abortion, "abortion is wrong" is true; in societies that approve of it, it's false. Don't confuse these views with descriptive relativism! 

radically different moral systems. but it doesn't follow from this that nobody is objectively right or wrong. after all in many cultures it's believed that the earth is the center of the universe, that's just incorrect. similarly their moral views could just be incorrect. so descriptive relativism doesn't entail meta ethical relativism. if we want to hold that the truth of moral statements is relative to individuals or cultures we need better arguments than that. but anyway that's subjectivism, relativism.

7.45 – 8.00
on the other hand if we think that moral properties are objective then we have moral realism. so moral realism says that some moral statements are true and that they are true in virtue of mind independent features of the world. *Plato, Kant and Karl Marx were moral realists, as well as more contemporary philosophers such as G. E. Moore.*

8.00 – 8.20
so it doesn't matter what anybody thinks of them if a moral realist believes that abortion is wrong he will say that abortion is wrong and that's that. even if everybody in the world believed that abortion was perfectly acceptable, abortion would still be morally wrong. abortion has the property of wrongness, the mind independent property of wrongness.



Moral realism

Some moral statements are true, and they are true in virtue of mind-independent features of the world.

Abortion has the mind-independent property of wrongness.

For the moral realist, moral values are features of the world no less real than gravity or solidity.

8.20 – 8.35
so moral realism would draw the strongest connection between statements like Cecil Taylor is a musician and moral statements. Cecil Taylor is a musician, that's the property he has no matter what anybody thinks about it. for a moral realist moral values are features of the world no less real than gravity or solidity whatever.

Moral realism

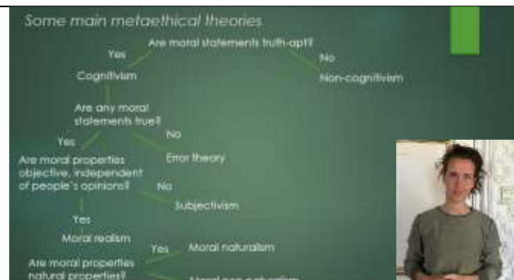
Some moral statements are true, and they are true in virtue of mind-independent features of the world.

Abortion has the mind-independent property of wrongness.

For the moral realist, moral values are features of the world no less real than gravity or solidity.




8.35 – 8.45
so if we're moral realists, the next question is are moral properties natural properties? well actually the first question is, what's the distinction between a natural and a non natural property, and that's a very difficult question which I don't really have time to explore here.



8.45 – 9.42
but a simple way of thinking about this is to say that natural properties are those properties that feature in a scientific description of the world. natural properties are those that we come to know about through empirical study. obviously this is a bit woolly because you know science changes, science 100 years in the future may have a very different set of properties to science today. so another suggestion might be that natural properties are those that are directly or indirectly detectable by the sensors. chairs and mountains are directly detectable, protons and genes, are indirectly detectable. we use our sensors to come to recognize these so these are part of the fabric of the natural world. again this is

Moral Naturalism and Moral Non-Naturalism

What is a natural property? A first approximation: natural properties are those properties that feature in a scientific description of the world.

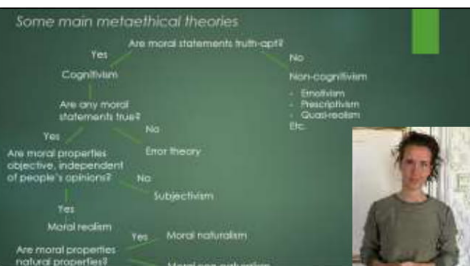
Another suggestion: natural properties are those that are directly or indirectly detectable by the senses.



quite vague but hopefully you have some idea of the distinction on that we're driving out here. so an example of a natural property would be for example pleasure. some people, if they accept a very simple version of utilitarianism. may say that moral goodness is just pleasure, the morally right action is the one that maximizes pleasure. because pleasure is the intrinsic good. pleasure is a perfectly standard property there's nothing ghostly about it nothing unusual it's natural.	
9.42 – 10.05 so moral naturalism says that moral properties are natural properties, this is appealing to many people because it allows that morality could become a science. <i>I suppose probably the most famous exponent of moral naturalism these days is Sam Harris.</i> He thinks that moral good and moral bad can be measured scientifically and empirically, because goodness and badness are natural features of the world. He says something a goodness is well-being or goodness is flourishing.	
10.05 – 10.17 anyway on the other hand non naturalism says that although there are moral properties, they're very different from natural properties. they don't figure in a scientific picture of the world. there are more things in earth than are dreamt of in your sciences. so that's a very brief outline of some cognitivist positions.	
Break	

10.17 – 10.25

What about non cognitivism?
well the question here is, if
moral statements don't
express beliefs, if they can't
be true or false, then what
are they doing?



10.25 – 11.35

Well one of the earliest non
cognitivist theories was
emotivism, *which was
developed by aj air and seal
Stevenson*. emotivism is the
view that moral statements
express emotional attitudes,
so abortion is wrong basically
just means abortion boo, boo
to abortion. and I should just
note here because I think
some people can get
confused on this point it's
important to distinguish non
cognitive issues like
emotivism from individualist
subjectivism. basically the
difference is this. according to
individualist subjectivism,
when I make a moral
statement I'm reporting or
describing my moral views. so
abortion is wrong means I
disapprove of abortion. and
that can be true or false. I can
be speaking honestly or I can
be lying. but according to
emotivism moral statements
don't report or describe
anything. they're simply
expressions of emotion. if I
ate some celery and I don't
like celery I say, Oh gross, well
notice I'm not really reporting
anything here. I'm not saying I
don't like celery, I'm just
expressing a negative
reaction. according to
emotivism that's pretty much
what moral statements are
like. I know this might seem



like tedious hair-splitting but the distinction between these views does become quite important later as you'll see when we look at them in more detail.	
11.35 – 11.45 there's also prescriptivism, which claims that moral statements are really imperatives. they express commands. so abortion is wrong means, do not abort.	
11.45 – 13.00 Quasi realism <i>was originally developed by Simon Blackburn and I'm not really sure if this should be considered a particular view or if it's more a general project. so we often tend to act as though moral properties are real we. we tend to think of moral statements as though they are true or false. obviously the non-cognitivist denies that they are actually true or false but we can't deny that people often seem to treat them as true or false. Quasi realism is the attempt to justify this practice. moral statements have no truth value, but it's perfectly reasonable according to the quasi realist to act as though they do. quasi realists might also attempt to justify notions like, moral progress. if moral statements are neither true nor false it's not clear how we could talk about moral progress. surely morality doesn't get better it just changes as people's attitudes change. but quasi realists might try to defend moral</i>	

progress. and another you know related notions all the ideas that seem to imply that moral properties are real. quasi realists will try to defend all of that talk even though they don't actually believe that moral properties are real. so we can mix and match different non cognitive views quite easily. you can be both an emotivist and a prescriptivists, for example if you think that moral statements express both emotional attitudes and commands.	
13.00 – 13.17 Anyway that's a brief overview of some of the main positions in meta ethics. it's just useful I think to have a general idea of where everything stands. so to bring this introduction to a close I thought it would might be useful to mention two very important ideas in meta ethics. just to get you thinking a bit more deeply about meta ethical problems.	
Break	
13.17 – 13.40 these two ideas are the is-ought gap and the fact-value distinction. the is-ought gap was first stated by David Hume and it states that we can't derive normative statements, which ascribe value, which tell us what ought to be and what ought not to be, from descriptive statements, which merely tell us how the world is. in other words we can't derive values from facts. we can't derive any moral claims from claims about how the world is.	

13.40 – 13.55 we can reason from descriptive premises to a descriptive conclusion, for example all men are mortal, Socrates is a man, Socrates is mortal. the premises and the conclusion are all descriptive and this argument is perfectly valid.	The <u>is/ought</u> gap:  P1. All men are mortal. P2. Socrates is a man. C. Socrates is mortal. {P1}, {P2}, and {C} are descriptive. 
13.55 – 14.20 Similarly, we can reason from normative premises to a normative conclusion. you ought not to kill humans, Bob is a human, therefore you will not kill Bob. the first premise there and the conclusion are both normative. now both of these arguments are fine they're both valid however Hume pointed out that very often in moral discourse, people will reason from purely descriptive statements alone to a normative conclusion.	The <u>is/ought</u> gap:  P1. All men are mortal. P2. Socrates is a man. C. Socrates is mortal. {P1}, {P2}, and {C} are descriptive. P1. You ought not to kill humans. P2. Bob is a human. C. You ought not to kill Bob. {P1} and {C} are normative. 
14.20 – 14.40 here's a simple example: humans will feel pain if you hit them, Frank is a human, therefore you ought not to hit Frank. the problem in this case is that the conclusion simply doesn't follow from the premises. it's not logically valid, you can't get that conclusion logically from those premises. we can try adding more descriptive premises to the argument but the conclusions still won't logically follow.	P1. Humans feel pain if you hit them. P2. Frank is a human. C. You ought not to hit Frank. 

14.40 – 15.20

so we could add pain is a form of suffering, humans will feel pain if you hit them, frankly human pain is a form of suffering therefore you ought not to hit Frank. again the conclusion does not logically follow, we can't get that moral conclusion from those descriptive premises. let's try again, we could add maybe Frank does not want to suffer, therefore you ought not to hit Frank. again the conclusion still doesn't follow. it does not matter how many facts we state in the premises, in order to derive this conclusion that we want not to hit Frank, we would need to add a normative statement to the premises, such as you ought not to inflict pain on humans, something like that.

P1. Humans feel pain if you hit them.
P2. Frank is a human.
C. You ought not to hit Frank.

P1. Humans feel pain if you hit them.
P2. Frank is a human.
P3. Pain is a form of suffering.
C. You ought not to hit Frank.

P1. Humans feel pain if you hit them.
P2. Frank is a human.
P3. Pain is a form of suffering.
P4. Frank does not want to suffer.
C. You ought not to hit Frank.



15.20 – 15.50

now if we add that to these premises then we get the conclusion, but without that normative premise we can't get the normative conclusion. so that's the is-ought gap. You cannot reason from descriptive statements to a normative conclusion and actually works the other way around as well. you couldn't reason from purely normative statements to a descriptive conclusion. but the important point here is you can't reason from descriptive statements to a normative conclusion, which suggests that descriptive statements and normative statements are very different kinds of things. this this has an important role to play in a lot of meta-ethical views. *You have already come*

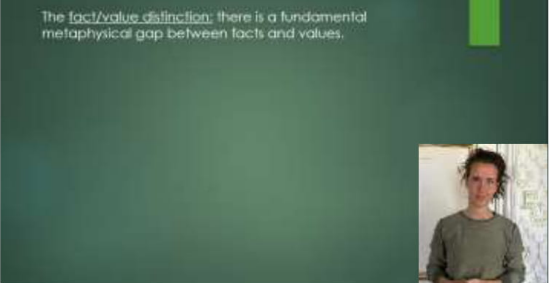
P1. Humans feel pain if you hit them.
P2. Frank is a human.
C. You ought not to hit Frank.

P1. Humans feel pain if you hit them.
P2. Frank is a human.
P3. Pain is a form of suffering.
C. You ought not to hit Frank.

P1. Humans feel pain if you hit them.
P2. Frank is a human.
P3. Pain is a form of suffering.
P4. Frank does not want to suffer.
C. You ought not to hit Frank.

Add a normative statement: "you ought not to inflict pain on humans."



<i>this far in the videos, good job.</i>	
15.50 – 16.00 The fact-value distinction is closely related to this gap. the point here is that there is a fundamental metaphysical gap between facts and values.	
16.00 – 16.22 So take a disagreement about value judgments, such as abortion. one person says it's always wrong, another says it's always permissible. this disagreement may rest on facts, for example maybe the extreme pro-lifer says that it's always wrong because the fetus has a functioning brain and the extreme pro-choicer says it's always permissible because the fetus does not have a functioning brain. in this case the disagreement concerns facts, and both parties are wrong.	
16.22 – 17.10 We can draw on the empirical sciences to show that they're wrong because we have ways of checking brain development in the fetus. so if the morality of abortion hinges on this status of the brain then you should be neither completely pro-life nor completely pro-choice and we can use the empirical sciences to show this. so that would be a disagreement concerning facts but the disagreement maybe one of values. they may agree completely about all the facts of the case. they may have perfect knowledge of the fact. it could simply be that the	

pro-choicer holds that the woman's right to bodily autonomy trumps all other considerations. while the pro-lifer holds that the fetus has a right to life that trumps all other considerations. this would be a difference in moral values. and the point here is that such values seem to be very very different from all other facts.

17.10 – 17.45
Even if the pro-choicer can be said to be correct or incorrect that bodily autonomy trumps all other considerations, it doesn't seem that the empirical sciences could show this. so moral values are very strange. certainly science has never been able to uncover them, neither of course have logical, mathematics. so what are moral values what does it mean to say that something is good, or that somebody has a right to do something? where do goodness and rights come from? in our disagreement between the pro-choicer who holds that bodily autonomy is more important and the pro-lifer who holds that the right to life is more important, what sort of things could we point to to decide who's correct.

17.45 – 18.10
And there's certainly an intuition that there really isn't much we could do here, we seem to hit a wall at this point. you know they don't seem to be any more facts we could appeal to and this suggests that facts and values are two very different things. well that's something to think about there. there's a great



deal of controversy about both of these ideas by the way. not everybody accepts them. But that's enough for today I'll see in the next video goodbye.	
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Appendix 2 – Self-reported engagement

Subscale	Question
Focused attention	I lost track of time during the video
	While viewing the video the time just slipped away
	I was absorbed in the video
	I was concentrated while viewing the video
Perceived usability	I felt frustrated during the video
	I found the video confusing to watch
	Watching this video was taxing
	I found the video useful
Reward factor	Watching this video was worthwhile
	Watching the video was rewarding
	I felt interested in the video
	The video was nice to watch

Participants could answer on a scale of 1 to 7, in which a high score indicates high engagement and a low score indicates low engagement.

Appendix 3 – Test

1. Name and briefly describe the three branches of ethics. (2 points)
2. What is the main difference between cognitivism and non-cognitivism? (2 points)
3. What is subjectivism, and what is emotivism? What is the main difference between them? (2 points)
4. What is moral realism? (1 point)
5. Which meta-ethical theory says that ethical statements are no more than expressions of opinion? (1 point)
6. Explain what is wrong with the following thought: if cultural relativism is true, it is okay to criticize the practices of other cultures. (2 points)
7. What is the difference between naturalism and non-naturalism? (2 points)
8. What is prescriptivism? (1 point)
9. Given the two premises, what is the conclusion that should follow? P1) Smoking destroys the healthy function of your lungs P2) Anything that destroys healthy functioning of your lungs is bad for your health Conclusion: ... (1 point)
10. P1) Slavery is a form of oppression. P2) Peter doesn't want to be oppressed. Conclusion: Therefore, you ought not to enslave Peter. Add a statement that would make the conclusion follow from the premises. (1 points)

Total: 10 points

Appendix 4 – Answers Test

Name and briefly describe the three branches of ethics	Meta-ethics, normative and applied. Alt. specific ethical problems Rules and principles that guide behaviour Meaning of moral statements/descriptions 0.1 for each statement, 0.3 for each description
What is the main difference between cognitivism and non-cognitivism?	According to cognitivism, statements can be true or false. According to non-cognitivism statements are neither true nor false. Alt. cognitivism express a belief/description about the world which can be true or false, non-cognitivism doesn't. 0.5 cognitivism keywords: statements/belief/description, true or not true/false. 0.5 non-cognitivism keywords: statements/belief/description, not true or false.
What is subjectivism, and what is emotivism? What is the main difference between them?	Subjectivism: moral statements are made true or false be the attitudes of the individuals who utter them. Emotivism merely expresses opinion. For subjectivism, moral statements can be true or false, while for emotivism moral statements are neither true nor false. Alt. subjectivism: descriptions are true/false depends on individual. emotivism: is only opinion, or celery 'blegh' Difference: subjectivism, description/belief can be true/false, is not the case for emotivism. 0.25 description or example subjectivism 0.25 description emotivism or example 0.5 for the difference
What is moral realism?	Some moral statements are true, independent of features of the world.

	Alt. even is everyone else is of a different opinion, if a moral realist believes something it is true for him. 0.5 for mentioning statement/opinion 0.5 for independent features/not dependent on others.
Which meta-ethical theory says that ethical statements are no more than expressions of opinion?	Emotivism 1 for emotivism, or emotions ethics.
Explain what is wrong with the following thought: if cultural relativism is true, it is okay to criticize the practices of other cultures.	According to cultural relativism something is true or false by the attitudes of the culture as a whole. In a society where abortion is wrong, it is wrong. In a society where it is good, that other society is no better, just different. 0.25 for definition cultural relativism 0.25 for explaining that what is good depends on culture. 0.5 for mentioning that if what is good depends on culture, you cannot compare on what is better. You cannot criticize because it is depends on culture.
What is the difference between naturalism and non-naturalism?	According to naturalism moral properties are natural properties. Non-naturalism says that moral properties are very different than natural properties. Alt. naturalism says that moral statements are natural and can be discovered by the senses, non-naturalism says that this is not possible, do not exist. 0.5 naturalism keywords: morality/ethics are natural/discovered by senses.

	0.5 non-naturalism keywords: morality/ethics are not natural, cannot be discovered by the senses.
What is prescriptivism?	The view that moral statements express commands. Alt. telling us what to do. 1 for either.
Given the two premises, what is the conclusion that should follow? P1) Smoking destroys the healthy function of your lungs P2) Anything that destroys healthy functioning of your lungs is bad for your health Conclusion: ...	Smoking is bad for your health 0,8 for correct answer
Is the following reasoning valid? Why or why not? P1) Slavery is a form of oppression. P2) Peter doesn't want to be oppressed. Conclusion: Therefore, you ought not to enslave Peter.	The premises are descriptive, but the conclusion is normative. The conclusion doesn't follow from the premises. Alt. you cannot reason from something that describes the world with something you don't want to something that should apply. A statement is missing. 1 for whole answer keywords: does not follow/invalid, is not a given, reasoning does not follow, conclusion does not follow.