The effect of error examples in instructional videos on motivation and learning

Bachelor thesis

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The effect of error examples in instructional videos on motivation and learning

Abstract
The present study focuses on the use of error examples in instructional videos in order to find out to which extend they influence students’ motivation and learning. Instructional videos designed by adapting demonstration based training seem to increase students’ performance but can always be improved. There are little empirical studies which test an influence of error examples in motivation. However, error examples are found to have an influence on students’ achievement. Research suggests that adapting error examples for instructional videos should benefit the student. In the present study, 29 German students were divided into two conditions. The control condition watched instructional videos about formatting a Microsoft Word document. The experimental condition additionally watched two error videos explaining often made mistakes and their consequences. All students were asked to perform the explained tasks and to fill in motivation questionnaires. The students in the experimental group had a greater learning effect than the students of the control group; however, it was not significant. There could be found no differences in motivation between the two conditions.
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Introduction

In a world where one cannot think about not using computers and software, nearly everyone needs to have at least a little bit of training in the most important software. In the early stages of software training, manuals were printed to help the user to install and use the software (van der Meij, Karreman, & Steehouder, 2009). Nowadays, instructional videos for software training are becoming more and more popular (van der Meij & van der Meij, 2016). However, it is important to ensure that these videos provide a better training than old-school printed manuals. One has to make sure that these videos are constructed in a way that people will learn easily from them and feel motivated to do so.

Demonstration based training

One way to do so is to adapt demonstration based training (DBT), which has its roots in Bandura and Walters (1977) social learning theory. DBT offers insight in processes which take place during video-based learning. According to the theory, attention, retention, reproduction and motivation play a big role in the learning process (Brar & van der Meij, 2017). As can be seen in figure 1, these processes can be adapted to instructional videos.

Videos should be designed in a way that the attention of the viewer is drawn. Attention is an important part of the viewers cognition, it plays an important role in what information the viewer sees, comprehends and filters (van der Meij & van der Meij, 2016). The viewer needs support by where to look on the screen, to take in all necessary information. With help of video editing, where one can insert signaling and alter the pace of the video, one can help to increase the attention (van der Meij & van der Meij, 2016).

Retention is the second process, which plays a big role in the learning process. It describes the ability to store the learned information for future behavior. Studies show that this can be enhanced for instructional videos by reviews and appropriate pausing (van der Meij & van der Meij, 2016).

Reproduction is a behavioral action in contrast to attention and retention, which are cognitive. The viewer has to practice what he has learned from the videos. The viewer can see himself whether he has understood the task and whether he knows every necessary step (van der Meij & van der Meij, 2016).

The last important process is motivation. Motivation influences attention, retention and reproduction. It can be altered by the duration of the video, the conversational style or music played during the video (van der Meij & van der Meij, 2016). Although motivation plays such an important role in learning, there is not often focus on it while designing the video. Therefore one has to look for more options to enhance the viewer’s motivation. Studies show that this is largely influenced by self-efficacy. Self-efficacy is defined as the confidence someone has to solve a specific task correctly (Lorsbach & Jinks, 1999). Studies have proven that self-efficacy has an impact on the actual outcome of the task. Students with high self-efficacy tend to perform better on the specific task (Bouffard-Bouchard, 1990; Pajares, 1996). Melis (2005) found a link between students’ motivation and error examples. This study will investigate whether error examples can be used for instructional videos to enhance students’ motivation.
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Error examples

Error examples are examples of what not to do when solving a task. To fully understand error examples one has at first to determine, what exactly can be seen as an error (Cattaneo & Boldrini, 2017). Cattaneo and Boldrini (2017) set three rules of what an error has to fulfil to benefit the student. Firstly, the error has to be a conscious action, which leads the student to not fulfil the goal he has to meet. Secondly, a norm or reference can clearly define the failure as an error. Thirdly, the cause of the error can be controlled by the student’s prior knowledge.

Error examples are often used in vocational training, when students cannot afford to make mistakes while learning or working, because the damage would be to harmful. If a student, for example, made a mistake while nursing an old person or repairing an expensive car, the learning damage would exceed the learning effect (Cattaneo & Boldrini, 2017). In many studies students therefore watch videos in which other people are seen to make a mistake and they have to discover them and explain what has gone wrong (Adams et al., 2014; Cattaneo & Boldrini, 2017; Schmitz, Schnabel, Stricker, Fischer, & Guttormsen, 2017; Tsovaltzi et al., 2010). Their studies show that error identification and self-explanation are important aspects of learning from errors. That means the student has to find and identify the erroneous example by himself and explain why it is an error (Cattaneo & Boldrini, 2017). This can, however, have the disadvantage that a student may not identify an error correctly and therefore makes the same mistakes as shown in the video (Melis, 2005). Error identification does not obligatory come from the student. It can also be pointed out and explained by the instructor. As long as the error is clearly identified and the student has time to understand it, he will benefit (Cattaneo & Boldrini, 2017). In this study, the student is shown the
error directly and the negative consequences are shown clearly. That way one can be sure the student will not confuse it with a good example.

**Research question**

As mentioned before, the students’ motivation plays an important role in instructional videos. Therefore, increasing motivation is a main aspect for improving instructional videos. There are studies that show an effect of error information on motivation. However, there is a lack of research of error information in instructional videos. It is interesting to see, whether error examples have an effect on students motivation and learning in instructional videos. Consequently, this study aims to answer following research question: *Do error examples in instructional videos have an effect on motivation and learning?*

To answer this question, error videos were made and a study was conducted in a German middle school. The participants were randomly distributed in two conditions. The control condition watched only instructional videos whereas the experimental group additionally watched two error videos. The participants, instructional and measurement materials and the procedure are described thoroughly hereafter.

**Methods**

**Participants**

The participants consisted of 41 students in seventh grade of a middle school in Germany (mean age 13 years, range 12-14). It was a convenient sample because it was obligatory for all pupils of the class to attend the study. Beforehand, the parents were asked permission for their children to take part.

Due to different technical problems the data of twelve of the 41 participants could not be analyzed. In eight cases the participants could not hear the narrations of the video because the laptops used were not able to provide the sound. Four other laptops were not able to connect to the internet to play the videos. This means the sample size was cut down to N=29. 13 boys and 16 girls took part in this study. The conditions were evenly distributed between the students’ gender. There were six boys in the control condition and seven in the experimental. Seven of the 16 girls were in the control condition and 9 in the experimental. All materials used are in German, because of the participants being German students.

**Instructional materials**

**Demonstration videos**

In this study the students were asked to solve problems concerning formatting tasks in Microsoft Word 2010. They watched videos in which is explained how to handle those problems. The tasks were divided into two chapters. The first chapter was about formatting citations, paragraphs and lists. The second chapter was about the automated table of content Word can create. The videos could be found on a website, were the students had to log in to watch them. On the left side of the page the student could see the different chapters and the corresponding videos. On the right side of the page the student could view the video he selected (see figure 2.)

The first chapter for the control group consisted of four videos explaining in intelligible language how to format the page accordingly to the student’s task. The duration of the videos was from 0:59 minutes to 1:42. To play all videos consecutively one needs 5:04 minutes. In the second chapter, there were five videos for the control group, in which the students were shown how to
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cchange the headings, to create an automated table of content, how to look for passages and how to update the table of content. The videos last for 0:49 minutes to 1:45 minutes, the overall duration is 6:09 minutes. These demonstration videos were used before in similar studies.

Figure 2 Screenshot of the Website

Error example videos

Especially for this study, error example videos were made. In these videos common mistakes made in the first chapters were pointed out, and it was explained why one should avoid them. Furthermore, it was shown what the perfectly formatted document should look like. To make them, at first a storyboard was written. This storyboard consisted of 2 columns, the left one contained the text the narrator spoke in the video, the right one contained the images that would be seen in the video (see figure 3).

To make the storyboards and the videos one needed good and bad examples of the finished task. It is important that at first a good example was shown on how the finished task should look like, for example an automated table of content. After that, it was shown what mistakes students might make, for example typing it manually. A bad example was shown, where it could be seen very clearly, how unorganized the table of content looked like. All the mistakes and their consequences had to be pointed out outstandingly.

By the help of this storyboard the videos were constructed. A program was used to film the screen, were the good and bad examples for the tasks were shown. A native German speaker narrated the video exactly how it was written down in the storyboard. Highlighting via arrows, circles and annotations and zooming in was used to lead the viewer’s attention to the important details in the video. It was made sure that no distracting details or unnecessary elements could be seen in the video. The duration of the error video about the sections was 2:24 minutes and the error video about the table of contents played for 1:57.
Manuals

The manual of the pre-test started with a trial task. By help of this task it was described to the students what they have to do. The trial task began with the appeal to the students to look at two different pictures and then to do the task described below. In the first picture one could see the unformatted page. The second picture showed how the page should look like after the task. Below the pictures, two questions with 7-point Likert-scales could be seen. The first question asked how often the student has to deal with this problem (frequency) and the second question asked how good the student thought he or she could handle the task (self-efficacy). Next on the page, there was a grey box in which the student’s tasks were described. First, they were asked to open the corresponding document, then to format this document so that it looked like in the second picture. At last, the students were asked to save and close the document. In the pre-test there was one trial task and three different real tasks for the children to do. The fourth task about the table of content also had the before and after pictures and the frequency and self-efficacy questions, but there was no document for the students to alter. They were asked to write down the solution to this problem on the paper.

The manual of the training was like the videos divided into two chapters. Because the students had two tasks during the training (watching the video and formatting the documents) each task was written down next to a picture. One picture showed a computer screen for the time the students had to watch a video, the other one showed a keyboard, when the students had to alter the
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document (see figure 4). Instead of writing down how they would generate a table of content, the students had to follow the instructions of the videos and create one.

The manual of the post-test was similar to the pre-test. There was no trial question and because the students worked in the same document for the whole time they are not asked to close it in between tasks. They also had to create a table of content. The same applied to the retention-test.

![Watch the video of section 1.1](image)

Figure 4 Selection from Computer screen and Keyboard as seen in the Training manual

**Measurement materials**

**Motivation questionnaire**

To measure motivation the students experienced after doing the training, a questionnaire with eight questions was given to the students. The students were reminded of the videos they have just seen and the tasks they did. They were then asked to answer the questions about these tasks.

The questionnaire consisted of eight items, four of them measuring self-efficacy and four of them measuring task relevance. An example of a self-efficacy item was: “I can create a neat looking table of content”. An example of a task relevance question was: “I think a neat looking table of content is important”. The possible answers were a seven-point Likert-scale (1= this does apply; 7= this does not apply). The computed Cronbach’s alpha was 0.697 for task relevance and 0.848 for self-efficacy.

**USB memory sticks and computers**

For every student a USB memory and a computer were required. The stick contained the Word documents the students had to alter during the tasks. The stick was marked with a number which was the login-code for the website and the identification number for each student. It was important that the computers are equipped with audio-output and that every student had one set of headphones. Furthermore, the computers had to be connected to the internet.

**Procedure**

**Session 1**

The first session consisted of the pre-test, the training, and the post-test. The session took place in a classroom of the school. For every student of the class the school provided a laptop. As every student sat down with their laptops the manuals of the pre-test and the USB sticks were distributed randomly. Like this it was assured that the conditions were assigned randomly. The
numbers written on the sticks were also the login codes for the website, and by this determined the condition of the student. It was made sure that every student could open their stick and had all required documents stored there.

The students were asked to fill in their names on the manuals and to write the number written on their stick next to it. By help of the trial task the pre-test was explained. They were told that, however the word ‘test’ was written on their sheets, they would not be graded and it was okay to make mistakes. The explaining took five minutes. The students worked on the pre-test for 20 minutes. During this time the manual for the training was distributed. It was made sure that the identification number was written on top of it.

Before the training started, it was made sure that every student had opened the website with the videos and logged in correctly. Then the training was explained for five minutes. The students had 45 minutes to watch the videos and to complete the tasks. After the training the students had ten minutes to fill in the questionnaire.

The post-test took place directly after filling in the motivation questionnaire. The students were not allowed to watch the videos while taking the immediate post-test, which took 20 minutes.

Session 2
To prepare for this session, a clear plastic folder was filled for each student. It contained the manual of the retention-test and the USB stick with their identification number. The name and identification number of the student were written on the folder to ensure that every student got the right stick. At the beginning of the session, which took place a week after the first session, the tasks were again shortly explained for five minutes. The students had 20 minutes to finish their tasks.

Results
Learning
In table one the mean scores of the different tests and trainings are presented. The experimental group scored lower in the pre-test than the control group. However they scored higher in the training and the retention-test. This indicates that the experimental group had a greater learning effect, but no significant differences were found.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pre-test M (SD)</th>
<th>Training M (SD)</th>
<th>Post-test* M(SD)</th>
<th>Retention-test M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n=13,7*)</td>
<td>1.31 (1,032)</td>
<td>4,92 (2,813)</td>
<td>5,00 (3,697)</td>
<td>5,08 (1,891)</td>
</tr>
<tr>
<td>Error videos(n=16,7*)</td>
<td>0,94 (0,854)</td>
<td>5,69 (2,272)</td>
<td>2,90 (2,923)</td>
<td>5,27 (2,463)</td>
</tr>
<tr>
<td>Total (n=29, 17*)</td>
<td>1,10 (0,939)</td>
<td>5,34 (2,511)</td>
<td>3,76 (3,327)</td>
<td>5,18 (2,178)</td>
</tr>
</tbody>
</table>

Table 1 Mean Success Rates (Standard Deviation) by Condition

Motivation
Frequency and self-efficacy before were tested, before the participants watched the videos, therefore a difference between the conditions would be random. One can however see a bigger growth in self-efficacy in the control group. Furthermore, there is hardly any difference between the conditions according in task relevance. No significant results were found concerning motivation, in fact, the control group seemed to be slightly more motivated.
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<table>
<thead>
<tr>
<th>Condition</th>
<th>Frequency*</th>
<th>Self-efficacy before*</th>
<th>Self-efficacy after</th>
<th>Task relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (n=13, 8*)</td>
<td>1.52 (0.412)</td>
<td>3.25 (1.110)</td>
<td>5.52 (1.321)</td>
<td>4.96 (0.906)</td>
</tr>
<tr>
<td>Error videos (n=16, 14*)</td>
<td>1.45 (0.548)</td>
<td>3.09 (1.512)</td>
<td>5.36 (1.715)</td>
<td>4.92 (1.049)</td>
</tr>
<tr>
<td>Total (n=29,22*)</td>
<td>1.47 (0.494)</td>
<td>3.14 (1.361)</td>
<td>5.43 (1.526)</td>
<td>4.94 (9.70)</td>
</tr>
</tbody>
</table>

Table 2 Means of Motivation by Condition

Conclusion and discussion

The present study investigated the extent to which error examples in instructional videos affect learning and motivation of the participants. To improve instructional videos the goal was to enhance motivation and learning. Different studies suggest an increase in learning using error examples (Adams et al., 2014; Cattaneo & Boldrini, 2017; Schmitz et al., 2017; Tsovaltzi et al., 2010). Furthermore, (Melis, 2005) found an effect from error examples on motivation. However, these findings could not be seen in the present study. Although there is a non-significant effect on learning, it was not as big as expected. Moreover, the error examples did not influence the motivation at all.

Different explanations can be found for that. First of all, in Schmitz et al. (2017) and Cattaneo and Boldrini (2017) error identification plays a big role in the outcomes of their studies. Students had to identify the mistakes themselves and therefore think about them more. Secondly, Adams et al. (2014) found that explaining the correct steps themselves benefits the students. In their study, self-explanation had an underlying effect on students learning. In the present study, students neither had to identify the error nor explain why it is wrong. It may be that actively working with the error may increase the understanding of the error.

There is little literature about error examples influencing students’ motivation. Melis (2005) suggest a positive effect of error examples on motivation but there is no empirical evidence for this claim. This study tried to find an effect on motivation but failed to do so. Neither self-efficacy nor task-relevance seems to be influenced by error examples.

Limitations and suggestions for further research

To see how to improve error examples in instructional videos, the limitations concerning the error videos and the implementation of the study are discussed hereafter.

The used error videos were specially made for this study. Although they seem to have an effect on students’ learning, they could be modified to be even more beneficial for the student. As mentioned before, the students did not actively work with the videos by identifying the errors or explaining themselves what went wrong. They did not have to think about what they just saw, which could influence the cognitive processes of the student and enhance his understanding and retention. To increase students’ involvement, the videos could contain short questions about what he just saw (for example: “Why do you think, this is not the best solution?”). Even if these questions are rhetorical and answered later in the videos, the student will be encouraged to think about the problem and not only passively watching the video.

Other limitations which could have influenced the results can be found in the implementation of the study. While working with schools, and especially young students, it is always difficult to prevent any troubles which could alter the results. First of all, the equipment used in this study was partly provided by the school. The laptops, which were used to watch the videos and format the documents, were school property. They are daily used by different classes, and had distinct signs of usage. Of some laptops, keys were missing or swapped or the sound did not work. Furthermore, some of the laptops were not able to connect to the internet. This did not only lead to missing data but also to turbulence in the classroom.
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This is a second limitation. Although the students were told to work quietly and on their own they tend to ask their peers if they had trouble with the laptops or their tasks. Instead of raising their hand and asking the research leader their questions, they talked to other students or complained loudly in the classroom. Other students, who did not have any problems, could have been disturbed by the noise.

A third problem, which presented itself, was time-management. Although student only needed the given time to finish their tasks, technical problems, questions and turmoil cost so much time, half of the students had no time to begin with their post-test. A class, where nearly no technical problems occurred, had no problem finishing all the tasks. In another class, in which many laptops could not connect to the internet, had much more turmoil in the classroom and more problems to stay on schedule.

Another topic to reflect on is the chosen participants. The twelve to 14 year old students had nearly any prior knowledge of working with Microsoft Word. They had, up to the point of the study, barely worked with it in school and only used it to write short texts. They never had to format a document or create a table of content. Students with more prior knowledge could have benefited more from the study.

Further research is therefore recommended. It is suggested that in this research the error videos contain moments for the student to think about the errors they have seen. It would furthermore be interesting to see whether participants with more prior knowledge could benefit more from the error videos. For any further research it is important to limit the technical problems and disorder by providing own laptops and letting the student work in smaller groups or even alone.
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Bibliography


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Appendix A
Storyboard Table of Contents German

<table>
<thead>
<tr>
<th>Narration</th>
<th>Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>The table of contents shows all the main sections in the report and gives the page numbers on which they are located. Word can help you create a table that is always accurate and up-to-date.</td>
<td><img src="image" alt="Table of Contents" /></td>
</tr>
</tbody>
</table>

This slide shows you what such a table often looks like

Many students do not know that Word can make a table for you. They go ahead and type the table themselves. This often leads to a bit of a mess.

Take a look at this slide.
You can immediately see that the page numbers zigzag down the page. This is because the student typed the table.

Besides sloppy page numbers, the student has also misspelled the chapter title, Exxeptions, which should be Exceptions.

A typed table of contents can also quickly become outdated. If you move a section in the report to another place, the table is no longer accurate.

If you move a section in the report to another place, the table is no longer accurate.
These problems can be prevented when you tell Word to create a table of contents for you. The other videos in this chapter demonstrate how to do this.

Storyboard Sections

**Storyboard Sections German**

<table>
<thead>
<tr>
<th>Narrations</th>
<th>Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referate haben oft spezielle Abschnitte, die dem Leser besonders auffallen sollen. In diesem Kapitel geht es um drei Arten von Abschnitten:</td>
<td></td>
</tr>
</tbody>
</table>

Ein Absatz ist eine kurze Besprechung eines Themas oder einer Idee.

Der erste Satz eines Absatzes fällt oft dadurch ins Auge, dass er eingerückt ist.

Ein Zitat ist eine Kopie eines Textes von jemand anderem.

Es fällt auf dieser Seite auf, weil es kursiv geschrieben ist.
Eine Aufzählung ist eine geordnete Sammlung von Begriffen.

Aufzählungen bestehen meist aus Schlagwörtern und dahinter eine kurze Erklärung des Begriffs. Eine gut formatierte Liste zeigt die Schlagwörter und Beschreibungen in verschiedenen Spalten.

Schüler machen oft Fehler, wenn sie diese Abschnitte in ihrem Referat darstellen.

Um Absätze auffälliger zu machen, drücken manche Schüler ein paar Mal auf die Leertaste.
Das kann dazu führen, dass manche Absätze nach drei Leerzeichen beginnen, andere nach vier oder fünf.

Ein vielgemachter Fehler bei Zitaten ist, dass Schüler versuchen jede Zeile einzeln zu verschieben. Das ist sehr zeitaufwändig und sieht am Ende meist nicht so gut aus.

Der meistgemachte Fehler in Bezug auf Aufzählungen ist, dass die Spalte für die Schlagwörter nicht breit genug ist.

Das Resultat ist, dass einige Erklärungen deswegen unter den Schlagwörtern stehen.

Diese Probleme können verhindert werden, wenn du das nachmachst, was die Videos in diesem Kapitel dir zeigen. Diese Videos zeigen dir, wie du richtig formatierst.
### Übungsfrage
- **Sieh** dir die Abbildung “Vorher” an
- **Problem:** Du **möchtest**, dass manche Wörter **fett** gedruckt sind
- **Sieh** dir die Abbildung “Nachher” an

![Vorher-Nachher-Bilder](image)

<table>
<thead>
<tr>
<th></th>
<th>nie</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wie oft kommt es vor, dass du dieses Problem lösen möchtest?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>sehr schlecht</td>
<td>sehr gut</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wie gut kannst du deiner Meinung nach das Problem lösen?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

### Deine Aufgabe

1. Öffne die Datei “Träume” aus deinem Ordner.

Frage 1 – Ein Zitat links und rechts einrücken lassen

- Sieh dir die Abbildung “Vorher” an
- Du möchtest das Zitat links und rechts einrücken lassen
- Sieh dir die Abbildung “Nachher” an

<table>
<thead>
<tr>
<th>Deine Aufgabe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Ein wahrer Held” aus deinem Ordner.</td>
</tr>
<tr>
<td>2. Lass das Zitat (zweiter Absatz, kursiver Text) an beiden Seiten einrücken.</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei.</td>
</tr>
</tbody>
</table>
Frage 2 - Erste Zeile eines Absatzes einrücken lassen

- **Sieh dir die Abbildung “Vorher” an**
- **Problem**: Du möchten die erste Zeile von _allen_ Absätzen einrücken lassen
- **Sieh dir die Abbildung “Nachher” an**

<table>
<thead>
<tr>
<th></th>
<th>Wie oft kommt es vor, dass du dieses Problem lösen möchtest?</th>
<th>nie</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Wie gut kannst du deiner Meinung nach das Problem lösen?</td>
<td>sehr schlecht</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Deine Aufgabe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Wunschfahrrad” aus deinem Ordner.</td>
</tr>
<tr>
<td>2. Sorge dafür, dass die erste Zeile von allen Absätzen etwas eingerückt ist (es sind 3 Absätze).</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei.</td>
</tr>
</tbody>
</table>
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**Frage 3 – Eine Aufzählung verdeutlichen**

- **Sieh dir die Abbildung “Vorher” an**
- **Problem:** Du **möchtest**, dass der Text hinter den **fett** gedruckten Wörtern nach rechts einrückt, damit die Aufzählung übersichtlicher wird
- **Sieh dir die Abbildung “Nachher” an**

<table>
<thead>
<tr>
<th>Vorher</th>
<th>Nachher</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="" /></td>
<td><img src="image2.png" alt="" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wie oft kommt es vor, dass du dieses Problem lösen möchtest?</th>
<th>nie</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>sehr schlecht</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wie gut kannst du deiner Meinung nach das Problem lösen?</th>
<th>sehr gut</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

---

**Deine Aufgabe**

1. Öffne die Datei “Erzählungen” aus deinem Ordner.
2. Sorge dafür, dass der Text hinter den fettgedruckten Wörtern etwas nach rechts einspringt.
3. Speicher die Datei ab.
4. Schließe die Datei.
The effect of error examples in instructional videos on motivation and learning

**Frage 4 – Word ein Inhaltsverzeichnis erstellen lassen**

- **Sieh** dir die Abbildung “Vorher” an
- **Du möchtest**, dass Word für dich automatisch ein Inhaltsverzeichnis erstellt
- **Sieh** dir die Abbildung “Nachher” an

Vorher: Manuell “von der Hand”  

Nachher: Automatisch

<table>
<thead>
<tr>
<th>Wie oft kommt es vor, dass du dieses Problem lösen möchtest?</th>
<th>nie</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>immer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Wie oft kommt es vor, dass du dieses Problem lösen möchtest?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wie gut kannst du deiner Meinung nach das Problem lösen?</th>
<th>sehr schlecht</th>
<th>sehr gut</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Wie gut kannst du deiner Meinung nach das Problem lösen?</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Deine Aufgabe

Beschreibe kurz wie du vorgehen würdest um in Word ein solches Inhaltsverzeichnis erstellen zu lassen

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
Anleitung

Du lernst nun wie du in Word einen Text schöner und übersichtlicher gestalten kannst. Diese Anleitung hilft dir dabei, um die passenden Videos zu finden und die Aufgaben zu bearbeiten. Achte somit darauf, dass Du die Anleitung auch sorgfältig durchliest!

Du wirst zwei Aufgabenarten sehen, die du ausführen musst. Die Symbole, die vor jeder Aufgabe stehen helfen dir hierbei:

**Video:** Siehst du dieses Symbol, musst du dir ein Video ansehen.

**Übungsaufgabe:** Siehst du dieses Symbol, musst die eine Aufgabe mit Word ausführen.

Du hast etwa 45 Minuten Zeit um die Videos anzusehen und die Aufgaben zu erledigen.
1. **Den Randabstand von Textpassagen anpassen**

Am Anfang schaust du dir ein Video von Kapitel 1 an.

Sieh dir das Video von Kapitel 1 an.


### 1.1 *Ein Zitat links einrücken lassen*

Sieh dir das Video von Abschnitt 1.1 an

---

**Deine Aufgabe 1.1**

1. Öffne die Datei “Zitatschäferhund”.
2. Lass das Zitat links einspringen.
3. Speicher die Datei ab.
4. Schließe die Datei noch nicht, da du diese noch weiterverwendest.
The effect of error examples in instructional videos on motivation and learning

1.2 Ein Zitat rechts einrücken lassen

Sieh dir das Video von Abschnitt 1.2 an

Deine Aufgabe 1.2

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Öffne die Datei “Zitatschäferhund” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>2.</td>
<td>Lass das Zitat rechts einspringen.</td>
</tr>
<tr>
<td>3.</td>
<td>Speicher die Datei ab.</td>
</tr>
<tr>
<td>4.</td>
<td>Schließe die Datei.</td>
</tr>
</tbody>
</table>

1.3 Die erste Zeile eines Absatzes einrücken

Sieh dir das Video von Abschnitt 1.3 an

Deine Aufgabe 1.3

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Öffne die Datei “Rettungshunde”.</td>
</tr>
<tr>
<td>2.</td>
<td>Lass die erste Zeile von jedem Absatz einrücken.</td>
</tr>
<tr>
<td>3.</td>
<td>Speicher die Datei ab</td>
</tr>
<tr>
<td>4.</td>
<td>Schließe die Datei.</td>
</tr>
</tbody>
</table>
1.4 Eine Aufzählung verdeutlichen

Sieh dir das Video von Abschnitt 1.4 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 1.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Hunderassen”.</td>
</tr>
<tr>
<td>2. Sorge dafür, dass die Beschreibung der Hunderassen übersichtlich auf einer Linie beginnt.</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei.</td>
</tr>
</tbody>
</table>
2. Ein automatisches Inhaltsverzeichnis erstellen

Am Anfang schaust du dir ein Video von Kapitel 2 an.

Sieh dir das Video von Kapitel 2 an.

Gleich schaust du dir Videos von diesem Abschnitt an.
Danach übst du diese Aufgabe.

2.1 Eine Formatvorlage für Kapitelüberschriften

Sieh dir das Video von Abschnitt 2.1 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.1</th>
</tr>
</thead>
</table>
| 1. Öffne die Datei “Niederlande”.
2. Gebe allen Kapitelüberschriften die Formatvorlage „Überschrift 1“.
3. Speicher die Datei ab.
4. Schließe die Datei noch nicht, da du diese noch weiterverwendest. |
The effect of error examples in instructional videos on motivation and learning

2.2 Eine Formatvorlage für Abschnittsüberschriften

Sieh dir das Video von Abschnitt 2.2 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>2. Gebe allen Abschnittsüberschriften die Formatvorlage „Überschrift 2“.</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>

2.3 Das automatische Inhaltsverzeichnis erstellen

Sieh dir das Video von Abschnitt 2.3 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>2. Erstelle das automatische Inhaltsverzeichnis.</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>
**2.4 Textpassagen mit dem Inhaltsverzeichnis suchen**

Sieh dir das Video von Abschnitt 2.4 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>2. Suche eine Textpassage mit Hilfe des Inhaltsverzeichnisses.</td>
</tr>
<tr>
<td>3. Speicher die Datei ab.</td>
</tr>
<tr>
<td>4. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>

---

**2.5 Das Inhaltsverzeichnis verändern**

Sieh dir das Video von Abschnitt 2.5 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>2. Verschiebe einen Stück Text an eine andere Stelle.</td>
</tr>
<tr>
<td>3. Aktualisiere das Inhaltsverzeichnis, so wie im Video zu sehen gewesen.</td>
</tr>
<tr>
<td>4. Speicher die Datei ab.</td>
</tr>
<tr>
<td>5. Schließe die Datei.</td>
</tr>
</tbody>
</table>

---

Du bist nun mit dem Training fertig!
Anleitung

Du lernst nun wie du in Word einen Text schöner und übersichtlicher gestalten kannst. Diese Anleitung hilft dir dabei, um die passenden Videos zu finden und die Aufgaben zu bearbeiten. Achte somit darauf, dass Du die Anleitung auch sorgfältig durchliest!

Du wirst zwei Aufgabenarten sehen, die du ausführen musst. Die Symbole, die vor jeder Aufgabe stehen helfen dir hierbei:

**Video:** Siehst du dieses Symbol, musst du dir ein Video ansehen.

**Übungsaufgabe:** Siehst du dieses Symbol, musst die eine Aufgabe mit Word ausführen.

Du hast etwa 45 Minuten Zeit um die Videos anzusehen und die Aufgaben zu erledigen.
1. Den Randabstand von Textpassagen anpassen


1.1 Ein Zitat links einrücken lassen

Sieh dir das Video von Abschnitt 1.1 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 1.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Öffne die Datei “Zitatschäferhund”.</td>
</tr>
<tr>
<td>7. Speicher die Datei ab.</td>
</tr>
<tr>
<td>8. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>

1.5 Ein Zitat rechts einrücken lassen

Sieh dir das Video von Abschnitt 1.2 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Öffne die Datei “Zitatschäferhund” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>7. Speicher die Datei ab.</td>
</tr>
<tr>
<td>8. Schließe die Datei.</td>
</tr>
</tbody>
</table>
1.6 Die erste Zeile eines Absatzes einrücken

Sieh dir das Video von Abschnitt 1.3 an

Deine Aufgabe 1.3

5. Öffne die Datei “Rettungshunde”.
7. Speicher die Datei ab
8. Schließe die Datei.

1.7 Eine Aufzählung verdeutlichen

Sieh dir das Video von Abschnitt 1.4 an

Deine Aufgabe 1.4

5. Öffne die Datei “Hunderassen”.
6. Sorge dafür, dass die Beschreibung der Hunderassen übersichtlich auf einer Linie beginnt.
7. Speicher die Datei ab.
8. Schließe die Datei.
2 Ein automatisches Inhaltsverzeichnis erstellen

Gleich schaust du dir ein Video zu diesem Thema an.
Danach übst du diese Aufgabe.

2.1 Eine Formatvorlage für Kapitelüberschriften

Sieh dir das Video von Abschnitt 2.1 an

Deine Aufgabe 2.1

5. Öffne die Datei "Niederlande".
6. Gebe allen Kapitelüberschriften die Formatvorlage „Überschrift 1“.
7. Speicher die Datei ab.
8. Schließe die Datei noch nicht, da du diese noch weiterverwenden.

2.2 Eine Formatvorlage für Abschnittsüberschriften

Sieh dir das Video von Abschnitt 2.2 an

Deine Aufgabe 2.2

5. Öffne die Datei "Niederlande" (sollte noch geöffnet sein).
6. Gebe allen Abschnittsüberschriften die Formatvorlage „Überschrift 2“.
7. Speicher die Datei ab.
8. Schließe die Datei noch nicht, da du diese noch weiterverwenden.
2.3 Das automatische Inhaltsverzeichnis erstellen

Sieh dir das Video von Abschnitt 2.3 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>7. Speicher die Datei ab.</td>
</tr>
<tr>
<td>8. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>

2.4 Textpassagen mit dem Inhaltsverzeichnis suchen

Sieh dir das Video von Abschnitt 2.4 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>7. Speicher die Datei ab.</td>
</tr>
<tr>
<td>8. Schließe die Datei noch nicht, da du diese noch weiterverwendest.</td>
</tr>
</tbody>
</table>
2.5 Das Inhaltsverzeichnis verändern

Sieh dir das Video von Abschnitt 2.5 an

<table>
<thead>
<tr>
<th>Deine Aufgabe 2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. Öffne die Datei “Niederlande” (sollte noch geöffnet sein).</td>
</tr>
<tr>
<td>7. Verschiebe ein Stück Text samt Überschrift an eine andere Stelle.</td>
</tr>
<tr>
<td>8. Aktualisiere das Inhaltsverzeichnis, so wie im Video zu sehen gewesen.</td>
</tr>
<tr>
<td>9. Speicher die Datei ab.</td>
</tr>
<tr>
<td>10. Schließe die Datei.</td>
</tr>
</tbody>
</table>

Du bist nun mit dem Training fertig!
Appendix E

Aufgabe 1 – Ein Zitat links und rechts einrücken lassen

- Sieh dir die Abbildungen “Vorher” und “Nachher” an.
- Sorge dafür, dass dein Text nachher genauso aussieht wie die Abbildung “Nachher”:

1. Die Geschichte des WWF

Am Anfang stand ein Staatkapital von 60.000 DM – das war in der DDR, noch ganz ausgesprochen wenig mit menschlichen Lebensräumen. Der Einfluss war nicht größer als ein Sockel für den Schutz unserer Erde bekannt. 1981, zwei Jahre nach der WWF Deutschland wurde, bildete sich eine kleine Gruppe von Menschen zusammen, die sich in aller Welt für die Schaffung eines Weltwerts einsetzte. Der Erfolg der Bewegung war eine Herausforderung der Naturalienschutz-Aktion in Deutschland.

1. Du hast die Datei “WWF” noch geöffnet.

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Aufgabe 2 - Erste Zeile eines Absatzes einrücken lassen

- **Sieh dir die Abbildungen „Vorher“ und „Nachher“ an.**
- **Sorge dafür, dass dein Text nachher genauso aussieht wie die Abbildung „Nachher“:**

---

**Deine Aufgabe**

1. Du hast die Datei „WWF“ noch geöffnet.

2. Lass die erste Zeile von allen drei Absätzen einrücken:
   - Am Anfang…
   - Der Panda…
   - Der WWF…
Aufgabe 3 - Eine Aufzählung verdeutlichen

- **Sieh** dir die Abbildungen “Vorher” und “Nachher” an.
- **Sorge** dafür, dass dein Text nachher genauso aussieht wie die Abbildung “Nachher”:

1. Du hast die Datei “WWF” noch geöffnet.
2. Mache die Aufzählung übersichtlicher, indem du die Beschreibung einrücken lässt.
3. Speicher die Datei ab.
4. Schließe die Datei noch nicht, da du diese noch weiter verwendest.
Aufgabe 4 - Word ein Inhaltsverzeichnis erstellen lassen

- Sieh dir die Abbildung “Vorher” und “Nachher” an.
- Sorge dafür, dass dein Inhaltsverzeichnis nachher genauso aussieht wie in der Abbildung “Nachher”:

Deine Aufgabe

1. Du hast die Datei “WWF” noch geöffnet.
2. Lass Word automatisch ein Inhaltsverzeichnis erstellen.
3. Speicher die Datei ab.
4. Schließe die Datei.

Du bist nun mit dem Nachtest fertig!
Appendix F

Name: ........................................

Aufgabe 1 – Ein Zitat links und rechts einrücken lassen

- Siehe die Abbildungen “Vorher” und “Nachher” an.
- Sorge dafür, dass dein Text nachher genauso aussieht wie die Abbildung “Nachher”:

Inhaltsverzeichnis

1. Die Geschichte der SOS Kinderdörfer


Inhaltsverzeichnis

1. Die Geschichte der SOS Kinderdörfer


Deine Aufgabe

5. Du hast die Datei “SOS” noch geöffnet.


Vorher

Nachher
Aufgabe 2 - Erste Zeile eines Absatzes einrücken lassen

- **Sieh** dir die Abbildungen “Vorher” und “Nachher” an.
- **Sorge** dafür, dass dein Text nachher genauso aussieht wie die Abbildung “Nachher”:

Deine Aufgabe

5. Du hast die Datei “SOS” noch geöffnet.

6. Lasse die erste Zeile von allen drei Absätzen einrücken:
   - Im Jahr 1949 …
   - Im Jahr 1960 …
   - Im folgenden Jahrzehnt…

Im Jahr 1949 gründet der österreichische Herrmann Grense und seine Mitarbeiter ihre Organisation SOS Kinderdorf, deren Ziel es ist, Orte der Kinderhilfe zu schaffen. Im Jahr 1960 expandieren die SOS-Kinderdörfer in weitere Länder, und im Folgenden Jahrzehnt …
Aufgabe 3 - Eine Aufzählung verdeutlichen

- **Sieh** dir die Abbildungen “Vorher” und “Nachher” an.
- **Sorge** dafür, dass dein Text nachher genauso aussieht wie die Abbildung “Nachher”:

5. Du hast die Datei “SOS” noch geöffnet.

6. Mache die Aufzählung übersichtlicher, indem du die Beschreibung einrücken lässt.

7. Speicher die Datei ab.

8. Schließe die Datei noch nicht, da du diese noch weiter verwendest.
Aufgabe 4 - Word ein Inhaltsverzeichnis erstellen lassen

- **Sieh** dir die Abbildungen "Vorher" und "Nachher" an.
- **Sorge** dafür, dass dein Inhaltsverzeichnis nachher genauso aussieht wie in der Abbildung "Nachher":

---

**Deine Aufgabe**

5. Du hast die Datei “SOS” noch geöffnet.


7. Speicher die Datei ab.

8. Schließe die Datei.

Du bist mit dem Wiederholungstest nun fertig!
Du hast Videos gesehen und mit Word an folgenden Aufgaben gearbeitet:
1. Textstücke, wie zum Beispiel Absätze und Aufzählungen einrücken lassen
2. Ein automatisches Inhaltsverzeichnis in Word erstellen
Beantworte nun bitte die folgenden Fragen über diese Aufgaben:

<table>
<thead>
<tr>
<th>Frage</th>
<th>Trifft zu</th>
<th>Trifft nicht zu</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Ich finde auffallende oder herausstechende Absätze wichtig</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>2 Ich kann einen Absatz einrücken lassen</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>3 Ich finde eine übersichtliche Aufzählung wichtig</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>4 Ich kann eine Aufzählung schön und ordentlich darstellen</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>5 Ich finde es nützlich ein Zitat auffallen oder herausstechen zu lassen</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>6 Ich kann ein Zitat rechts und links einrücken lassen</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>7 Ich finde eine ordentlich aussehende Inhaltsangabe wichtig</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
<tr>
<td>8 Ich kann eine ordentlich aussehende Inhaltsangabe erstellen</td>
<td>1 2 3 4</td>
<td>5 6 7</td>
</tr>
</tbody>
</table>