

Assignment 3 – UX evaluation of Enkeleksamen

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1 Executive summary

This project aimed to evaluate the effectiveness of a MOOC on statistics, using heuristic evaluation and focus group interviews. The heuristically analysis found that the platform lacked consistency in design, which could confuse the users. Technical findings showed that the excessive use of functions without tooltips could be a potential issue for the users. The focus group interviews revealed that while the videos had high production value, they could be lengthy and result in a loss of focus. Feedback on the learning control criteria was positive, with students appreciating the effective explanations and well structure content. However, some participants felt that the questions could be too repetitive and would like to see more varied material to engage with. Students expressed a desire for a forum to be incorporated into the platform, which could allow for collaborative learning and a constructivist approach to education.

Overall, this project highlights areas for improvement in the platform’s design, technical functionality, and learning approach. Urging platform users to engage with the forum would allow a peer-to-peer review system and, by doing so, learn in a collective sense. The technical functionality of the platform should be improved to provide clearer guidance for the users.

2 Introduction to Enkeleksamen

Enkeleksamen's vision is to shape the future of learning by providing high-quality user experience test of Enkeleksamen aims to evaluate the user experience of this MOOC platform. With a wide range of courses, the platform offers tutoring and covers the University of BI Bergen syllabus. The unique aspect of Enkeleksamen is that all the tutors are students themselves. This usability test will assess how user-friendly and efficient the platform is, focusing on its design, navigation,

content, and overall user experience. The results of this usability test will help Enkeleksamen improve its platform, ensuring that it provides a solid user experience that meets the needs of its users.

2.1 Selected study units

From the wide range of courses offered by Enkeleksamen, we have selected the Statistics course (STAT1000) and the Finance course (BØK3423) for the usability test. The reason for selecting these two courses is that they cover different academic fields and offer a substantial amount of material for testing. The Statistics course lasts 10 hours and presents 217 tasks to test the users' knowledge. It covers fundamental statistical concepts such as probability, hypothesis testing, and regression analysis. On the other hand, the Finance course lasts for 11.5 hours and contains 181 different tasks. This course focuses on financial analysis, decision-making, and investment management. By evaluating the usability of these two courses, we can provide feedback to Enkeleksamen on how to improve the user experience for both the Statistics and Finance courses, which will, in turn, enhance the platform's overall quality.

3 Methodology

The methodology of the conducted test is a usability test of Enkeleksamen's MOOC platform, focusing on the heuristic part of e-learning evaluation. To facilitate the test, we organized and engaged students from the student consulting company, Young Industrial Innovators, who were willing to participate in the trial. The test took place at the test facilities at the school of the University of Agder. The students were instructed to familiarize themselves with the courses from the MOOC and take part in the courses as ordinary students from the school of BI Bergen. They were asked to complete parts of the courses to understand the platform's features and functionalities. After completing the given tasks, the students were called to focus groups to answer questions about the heuristics of e-learning evaluation. The focus groups were conducted by moderators who asked questions based on the 10 pedagogical usability criteria.

3.1 Test participants

The test participants were recruited through the student consultant company, Young Industrial Innovators, and had diverse backgrounds and educational experiences. Some participants had prior experience with MOOCs, while others were partially new. Additionally, some participants had more experience using browsers and online platforms, while others had less familiarity with these technologies. The usability test is focused on the subscribers of Enkeleksamen's platform as the primary stakeholders. Their feedback is critical to improving the platform's user experience.

3.2 Study

The study has been divided into two parts. The participants underwent individual testing of the platform before being gathered for focus group interviews, where discussions regarding the

functionality and the pedagogical approach to teaching took place. The participants were divided into two different focus groups, consisting of 3-4 participants each time. The test facilitators led the focus groups, and the focus points were derived from 10 usability criteria, as stated in the article by Nokelainen (Nokelainen, 2006).

The selected criteria are learner control, goal orientation, motivation, valuation of previous knowledge, and added value. These criteria were chosen because they were deemed essential for ensuring a positive user experience on the Enkeleksamen platform. During the individual testing, test participants were urged to take notes during their testing of the courses and familiarize themselves with the platform's functionalities.

4. Problems

During the first part of this assignment, heuristics evaluation, the group indicated some problems related to the course. They were found using the protocol for heuristics evaluation and matched with one of the heuristics sets.

4.1 Lack of subtitles

The first problem is the lack of subtitles in the lessons. The system should always inform the user about what is going on in the course and give feedback. If there are no subtitles, some users with a different native language than Norwegian could have difficulty understanding the lesson lessons, impacting the learning experience and usability. Some teachers could have a Norwegian dialect that could be difficult to understand for international students. Furthermore, some students have it easier to follow the content if there is a subtitle available.

Heuristic violation: Visibility of system status

Severity: 3

Extensiveness: 2

4.2 Missing video

The second problem is the lack of video lesson where it is indicated that it is available. The user should be able to undo and redo an action easily and could be able to escape from unwanted actions. However, if the user cannot access the lesson as promised, they may feel frustrated and disengaged with the content because they lose control over their learning experience.

Heuristic violation: Match between the system and the real world

Severity: 3

Extensiveness: 1

As shown on figure 1, there is an icon that indicates video, but when clicking on it, video doesn't appear.



Figure 1 Missing video

4.3 Button "continue learning"

The third problem recognized is when the user starts the course for the first time. It appears "fortsett" (continue learning). It could be confusing, and the user could doubt if he has used the course before. In this case, the button indicates that the user has already started the course when they have not. The system should follow established conventions and standards and be consistent in its use of workflows.

Heuristic violation: Consistency and standards

Severity: 3

Extensiveness: 1



Figure 2 Button "continue learning"

4.4 Missing tool tips

When hovering over particular buttons, it doesn't give feedback or description about their function. The symbols could not be understandable because they seem different from other web platforms. Not knowing the purpose of buttons or what they perform can be frustrating and confusing for the user.

Heuristic violation: Visibility of system status

Severity: 3

Extensiveness: 2



Figure 3 Options bar

4.5 Redirecting to the lesson.

When the user gets a wrong answer, he cannot easily redirect to the lesson where the correct answer is explained. The system should provide clear information to help the users use the system effectively and recover from errors.

Heuristic violation: Help and documentation

Severity: 2

Extensiveness: 2

4.6 Lack of multiple notes

During every lesson, the user has a possibility to write notes. However, it is allowed to add only one note within the respective part of the module. The user may be used to adding several notes, as in many other platforms. This problem could be seen as inconsistent or non-standard.

Heuristic violation: Consistency and standards

Severity: 3

Extensiveness: 2

This is a test



Figure 4 Lack of multiple notes

4.7 Skipping questions.

After completing the videos, the hierarchy shows that there are upcoming repetition questions that are not showing. Instead, it skips them, and the learner is presented with a message saying that the score was 0/X and urged to try again. This confuses and tells the learner that he or she is misusing the platform.

Heuristic violation: Consistency and standards

Severity: 3

Extensiveness: 2

5. Focus group interviews

As facilitators of the discussion, we guided the direction of the conversation to ensure that all topics were covered and that the participants had an opportunity to share their thoughts and opinions. During the focus group discussions, we focused on learner control, goal orientation, motivation, valuation of previous knowledge, and added value. By structuring the discussion around these specific topics, we gathered more detailed participant feedback regarding their experiences using the Enkeleksamen platform.

In addition to focusing on the heuristic evaluation of Enkeleksamen, we also urged the test participants to consider the platform's usability experience (UX). By doing so, we uncovered technical aspects that Enkeleksamen could improve to serve their audience better. The participants provided feedback on aspects such as the layout and design of the platform, the ease of navigation, and the possible technical areas for improvement. These insights will be valuable for Enkeleksamen in identifying areas for improvement to enhance the overall user experience of their platform.

The insights gathered from the focus groups will be used to inform the findings chapter of the report, where we will present the key findings and recommendations for improving the Enkeleksamen platform.

5.1 Learner control

In the focus group, participants shared feedback on the heuristic criteria of learning control. The use of questions to break up videos was appreciated. However, some felt that the questions were too easy and the videos were too long, leading to losing focus. It was suggested that the pacing and length of the videos could be improved. Despite some areas for improvement, the feedback highlighted positive aspects of the MOOC and opportunities to enhance the user experience. As the course is highly instructive, the learner has few choices regarding how to absorb the knowledge.

5.2 Goal orientation

Goal orientation was the second heuristic criteria that the discussion focused on. The feedback was somewhat mixed. Some of them mentioned that it was clear what the goal of each lesson was. They were aware, and it was a clear focus regarding what is necessary to know for the exam. Moreover, they mentioned that the teacher made the goals clear at the beginning and end of the lessons, contributing to a better understanding of the overall goals.

On the other hand, there was a participant that had different impressions. Their feedback was that the lessons include more explanation about the concept of the lesson but not going specifically through the goals.

5.3 Motivation

The overall impression regarding motivation with the lesson was positive. Some of the participants were that answering the post-lesson question and getting the right answers motivated them. More specifically, the progress and the feeling of mastery kept them continuing to learn. Furthermore, the camera setup with a scenario type combined with the videos enhanced the participation. However, some participants experienced the lessons as "dull" due to their lack of interest.

5.4 Valuation of previous knowledge

Motivation and goal awareness contribute to their understanding and learning of the material. In the discussion, the participants were asked about the knowledge they needed through the course to complete the tasks within the course. Some participants mentioned that they could not absorb the information immediately due to unfamiliarity with the subject. However, they could play the video again and fill in the missing gaps. Regarding if knowledge of the scope of statistics was needed beforehand, there was a consensus that the modules have a gradually increasing level of complexity and that it was not necessary to have more than a fundamental understanding of statistics before taking on the course.

5.5 Added value

The added value of the Enkeleksamen platform was also a topic of discussion among the participants and the moderators. The videos provided on the platform received praise for their high production value, with engaging animations and illustrations. The tutor was also appreciated for delivering the content at a pace the learners could understand.

5.5.1 Adaptability to individual needs

As previously mentioned, the lack of subtitles was also a significant part of the focus group discussions. This only refers to individuals who have not mastered the spoken language yet. However, with the possibility of setting the pace of the videos to be the optimal speed to fit the individual's control, one can, to some degree, better understand the spoken language.

5.5.2 Number of flexible options

Enkeleksamen's use of multimedia tools received praise in the focus groups for enhancing the learning experience. As Nokelainen (2006) suggests, digital learning material should offer flexible options for learners to engage in ways that suit their preferences. Most participants in the study agreed that Enkeleksamen provides such flexibility. However, some students expressed a desire for additional learning options. For example, a forum that allows for active collaboration and discussion among students could be valuable. Although the platform already includes this feature, users are not fully utilizing it.

5.5.3 Desired format

The phrase "Learning" is controlled by the learner and initiated by the learner and is in the form that the learner desires" means" that the learner has an active role in the learning process and has control over how they learn. As a term this is often referred to as student-centered learning.

The participants in the focus group mention that there are many valuable tools in the video player that they can use to control the given lectures. Regarding this, it is shown through the data that this is also towards the higher end of the spectrum. However, there are numerous remarks about the player not being consistent with the standard players that they are used to, as it does not hint at what is hovered over and that there are functions that seem excessive.

To address the individuals giving the lower scores, these individuals make remarks that they would like more flexible options to feel in control of the given curriculum, such as forums or other panels where they can discuss their interpretation of the given knowledge. That way, the platform can get a sense of moving away from being solely instructive but can gain a collective sense, such as in a constructive approach.

5.5.4 Interesting contents

This area of added value may not be entirely applicable as one can acknowledge that what one person finds interesting may not be the same as another. Therefore, the concept of interesting content is highly individualistic and subjective. However, it does not imply that the chapter on interesting content is irrelevant.

Incorporating certain features such as animations, the tone of the lecturer, and overall added value can enhance the appeal of course materials and make them more engaging for the learners. An example is how Enkeleksamen uses animations to provide visual aids to help learners understand more complex concepts. At the same time, the tone of the lecturer creates a more lively and engaging learning environment. 2 of the individuals present at the focus group interviews made remarks that there was a high production value in the studio the videos were filmed, and that is something that in works towards a positive outlook on the total image. It was also discussed how incorporating these features made the courses remain current. Even if the content is not inherently interesting to everyone, the material becomes more interesting and appealing.

5.5.5 Development of communication

This chapter of added value is highly referrable to the previous chapter, with interesting content, as a lot of the content is made interesting by its well-done communication. During the focus group interviews, in the discussion regarding whether Enkeleksamen has well-developed communication, more participants agreed on the higher end of the scale. It was discussed that the digital learning material had been designed to facilitate effective communication between

the learner and the instructor. This is mainly regarding the effective buildup of the modules, what is meant to be taught, the learning outcomes, and its graphics and animations. However, one participant remarked that there should be an area where he could address issues with interpreting the curriculum or taught knowledge.

5.5.6 Active participation of students

During the focus group interviews, some participants suggested that Enkeleksamen could benefit from incorporating different tasks as some felt repetitive. Additionally, some participants wanted a designated area where students could collectively share their interpretations of the courses. A few participants suggested having simulation games relevant to different topics to help students find new ways to interpret the courses and discover new correlations between subjects. One participant commented on the repetitiveness of the questions throughout the course. According to the participant, the questions felt too similar and lacked variation. They also noted that the course structure was quite repetitive, with the questions following the videos being predictable, making the course feel monotonous and uninspiring at times.

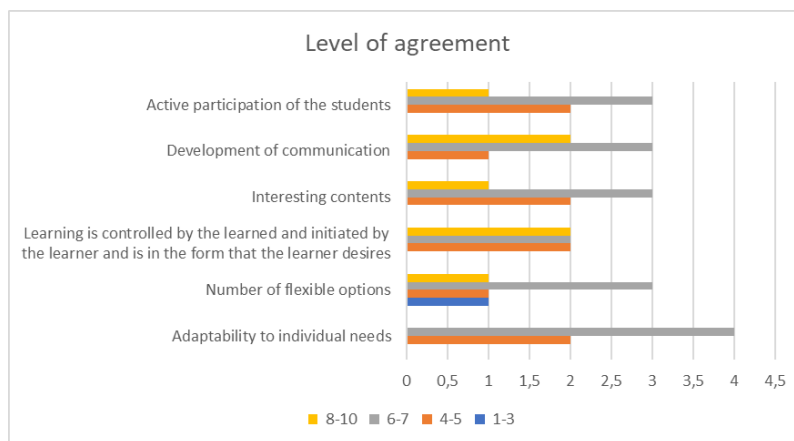


Figure 5 Charts

6. Findings and solutions

In this chapter, we will give possible solutions to the correlating findings. We have divided the findings into heuristical and focus group findings and solutions. The first category consists of problems found through the evaluation of the courses. The category, on the other hand, is based on the participants' feedback regarding the technical aspects of the platform, such as the layout, design, navigation, and technical issues. By presenting these findings, we aim to provide valuable insights for Enkeleksamen to improve their platform and enhance the user experience for their subscribers.

6.1 Heuristic

The lessons, Enkeleksamen provides, do not contain subtitles. As mentioned earlier, it could impact the learning experience and create understanding difficulties for immigrant-Norwegian

students due to the different Norwegian dialects. Moreover, it could be impossible for deaf people to absorb the information. According to the Norwegian Inspectorate for universal design, automatic text is a vital requirement for Norwegian videos. (Inspectorate for universal design, n.d.) Another alternative could be to integrate transcripts in the lessons. As shown in figure 6, the transcript of a course in Coursera is clickable and takes the viewer to the exact point in the video. Transcripts give the viewer a sense of autonomy and control.

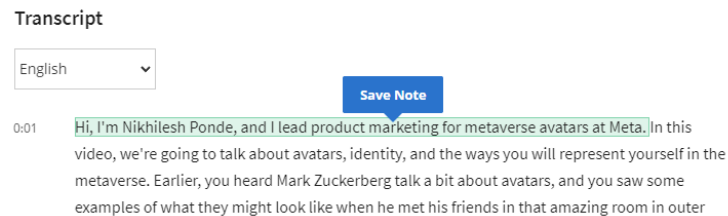


Figure 5 Transcript of a course on Coursera

A missing video is the second heuristic problem that the team identified. It could cause a feeling of losing control over their learning experience and a gap in the learning material. A recommendation could be to conduct some quality-assured tests periodically. The system should match the real world to improve the user experience.

The team identified problems with the button on the main page. It says, “Continue learning,” having it like this creates confusion in the user because it indirectly says that the user has already started the course. The team recommends changing it with, for example, “Start the course” or “Start”.

The fourth heuristic problem with the system is the lack of feedback when hovering over buttons. The standard in modern players is to give tooltips to the players and always be consistent with the symbols used. Here we see that the platform has taken into use a player with extensive features that sometimes feel redundant. One should consider removing redundant functions, but adding tooltips seems crucial. This is especially important when a lack of consistency is present.

To make learning less hassle for a student, one could implement a solution to show the learner where and in what video particular knowledge is given, to answer questions correctly. This brings us to the fifth heuristic problem, the non-redirection of learners upon wrongly submitting answers to questions. To address this, Enkeleksamen could pinpoint the exact time in the videos previously watched to gain the knowledge needed to answer the questions. ‘

As mentioned, a sixth issue was the singular use of the note system. The note system is explicit to the parts of the course. However, the users cannot make more than one per part of the module. With more than one possible, the users can gain control, and the note system can be perceived as easier to read.

The last and major issue we found as a part of the heuristic analysis was skipping questions in the modules. This should be resolved, as it not only presents an issue within the platform but also could demotivate the learners as they get presented with a horrendous score. Enkeleksamen should investigate not directing the learners to the end of the course but instead directing them to the respective question part of the modules.

6.2 Focus group

6.2.1 Length of videos

Some participants expressed concerns about the length of the videos in the Enkeleksamen courses, indicating that some videos were too long, which negatively impacted their attention span and engagement with the course. Enkeleksamen could consider breaking up the videos into shorter segments with more frequent interactive elements such as quizzes, questions, or exercises to address this issue.

Moreover, according to Bradbury (2016), scientific research states, "Thus, the available primary data do not support the concept of a 10- to 15-min attention limit. Interestingly, the most consistent finding from a literature review is that the greatest variability in student attention arises from differences between teachers and not from the teaching format itself (Bradbury, 2016)

This states that the length of the videos within the platform, as far as we have tested, does not last long enough to breach. As far as we have tested, the videos last less than 10. The critique might lie in its captivating nature. Furthermore, referring to Team (2013), the optimal length of educational videos is 6 minutes or less. (Team, 2013). Considering this, lengthier videos within the course are in violation. However, a small alteration that could be implemented could be to divide certain lengthier videos into smaller parts by urging learners to undertake smaller quizzes around the middle of the video before taking a questionnaire that sums up the video.

6.2.2 Repetition

To address the issue regarding repetitiveness and variations, Enkeleksamen could consider incorporating more interactive elements in the course, such as quizzes or games, that could provide more engaging ways to learn the material. This would not only break up the monotony of the course but could also make the learning experience more interactive and enjoyable for the students. However, the seemingly most cost-efficient thing to do would be to incorporate more variations in the tasks given rather than developing new tools.

6.2.3 Learner control

Based on the feedback from the focus group meetings, it seems that the video player on the website has excessive functions that are not aligned with the current standards. This is particularly evident in the symbols used and the lack of tooltips, which can be difficult for users to understand what each function does and how to use them effectively. Enkeleksamen should incorporate tooltips that appear as users hover over certain buttons to address this issue. This is

a common feature in leading platforms, such as YouTube. Users can find consistency with the platform even before using it by being consistent with the standard.

6.2.4 Collaborative learning

As stated in the development of communication, there are remarks about the need for alternative means of learning. This is where the forum could come in handy. There is already a forum within the platform, but it seems like few or no students are actively using it. This is seen as there are no posts in a forum within the statistics course. Enkeleksamen could investigate alternatives to urging the learners into using this more actively, such as pop-ups or other messages that could be communicated to the learners. As well as, the tutor could urge the students to engage in this function. Adding a peer review concept to the platform could benefit learners and tutors, as it is challenging to follow up with individual learners within a MOOC.

References

- Bradbury, N. A. (2016). Attention span during lectures: 8 seconds, 10 minutes, or more? *Advances in Physiology Education*, 40(4), 509–513.
<https://doi.org/10.1152/advan.00109.2016>
- Spørsmål og svar om video. (n.d.). Tilsynet for Universell Utforming Av Ikt.
<https://www.uutilsynet.no/wcag-standarden/sporsmal-og-svar-om-video/895>
- Team, E. (2013). Optimal Video Length for Student Engagement. *blog.edx.org*.
<https://blog.edx.org/optimal-video-length-student-engagement>
- Nokelainen, P. (2006). An empirical assessment of pedagogical usability criteria for digital learning material with elementary school students. *Educational Technology & Society*, 9(2), 178–197. http://www.ifets.info/journals/9_2/15.pdf