

Quotes based on the truth of selected journals and magazines:

“How project management became the best
class of NTNU”

NTNU Magazine

“A unique experience”

The New York Times

“This is a true game changer”

IGN

“The new era studying has arrived”

Washington Post

“After seeing this app, I knew I made the
right choice of becoming a teacher”

Bassam Hussein

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1. Preface

This report shows a short and general overview of digitalization projects and the main challenges that arise when digitalization projects are realized. The purpose of this paper is the examination of the projects, which we carried out. Firstly, a short description of the project will be presented as well as its main goals. Additionally, it will be discussed thoroughly, if the project can be seen as a failure or as a success. The evaluation of the project is based on the success criteria mentioned in the project plan. Moreover, an elaboration on all the factors that contributed to the success or to the problems will be given.

Furthermore, this report includes the evaluation of the impact, the created product had on test-subjects and a peer-review report of the product produced by other students.

In addition, this report also includes a chapter where “lessons learned” are being discussed and if there were any present.

Lastly, the evaluation of a different group (33) is conducted at the end of the document.

Group number: 36

- | | |
|----------------------|--------|
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2. Digitalization projects

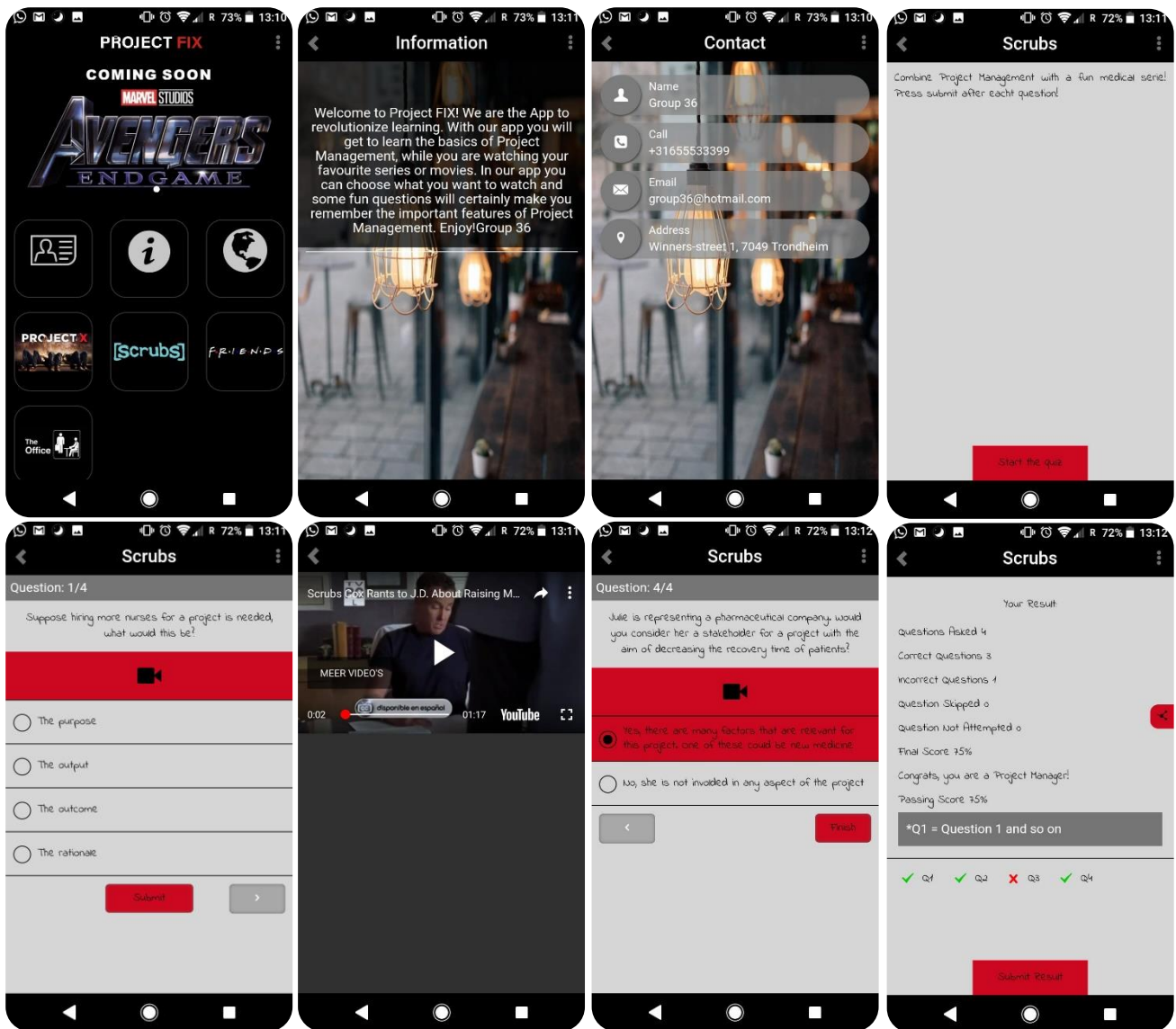
A) *Describe your product, its intended purpose and why you have selected to produce this product.*

The type of product will be an **interactive app** (Project FIX) containing content targeted at the specific user, in this case students. Studying is made exciting and interesting again with real examples taken from their favourite content, like *Scrubs*, *Master Chef Australia* or *Friends*. When studying *Project Management*, the topic could be *stakeholders*, *success factors* or many more. The app works as the following:

- In the home screen you have the option to enter different menu's. For instance, information, contact information or external websites. In addition, you can choose your favourite series or movie.
- When you click on the content of your choice you will start a quiz. Each quiz consists of multiple video fragments.
- After watching each video, you have to answer a question about the video. All the questions are related to Project Management.
- When you have answered all questions of a quiz you can submit your results and see if you passed or not.
- When done with a quiz you can go back and choose another series or movie!

The purpose of the Project is to create a learning aid, in form of an interactive App, that conveys basic project management principles and guidelines in combination with suitable examples in order to improve the studying output of the users.

We detected the necessity of the App as we took part in project management courses in university. Although the lectures were good and the learning material was decent, the connection to real-life examples where missing or done poorly. Out of this reason we decided to bridge the gap between theory and practice with the ProjectFix App.



B) After having the opportunity of working on a small-scale digitalization project, what are, in your, opinion the main challenges that your group has experienced with this type of projects? You should base your statements on your own reflections and preferably support these reflections using project management literature.

IT and software projects can be categorized as digitalization projects. It restructures social and work life around digital communication and media infrastructures. Digitalization projects' main challenge is to capture and manage successfully the expectations of diverse stakeholders, especially those of the end-users. One success factor of digitalization projects is to plan on small deliveries instead of doing everything at once. Additionally, it is important to continuously follow-up the project outcome throughout all project phases [Hussein, B. (2018) p. 15].

Our first challenge as a group was to find **a way of how to learn project management with an interesting, new touch**. Our goal was to find something special, that makes project management more fun than it already is and to combine different styles of learning – watching and reading – within one platform. We wanted to create something that was tangible and also feasible because spending resources on creating something no one can use, doesn't make any sense. There is no company or project in the world, which goal it is to waste time. And we wanted to work on something that is fun for us too. That makes work easier. Because of this, we created an app where we could integrate our free time activities.

Another main challenge we have experienced as a group when we were working on a digitalization project was to find an **appropriate software**/program/app for the idea we wanted to bring to life. As we had one specification of our customer – a product that can be used on i-phone, i-pad, or PC and must have a significant impact on learning – we knew that we either have to invest quite a lot of money so that a third party would create the App through coding, or we would have to teach us the necessary skills ourselves.

That led us to our next challenge: **financial resources**. As full-time exchange-students busy with studies we don't have the possibility and network to get our project funded or to ask qualified programmers. We could have asked our instructor for help, but that did not come to our minds. Therefore, we decided to find a solution, which didn't have an impact on our budget.

This resulted in our next challenge: **time**. Finding a suitable software with which we could design the App for our needs and specifications was difficult but doable. After we cleared this hurdle, we had to make our self familiar with the software and how we can operate with it.

Additionally, the time spent on finding appropriate input material (videos combined with project management literature) must not be forgotten.

These facts combined with the different backgrounds and knowledge of the members, made it difficult to schedule meetings.

The “resource conflicts” applies here in terms of the project team-members, which also have compulsory work and assignments to do for other courses, that they are attending.

Another main challenge of our project is the stakeholder satisfaction (with reference to Hussein, B. (2018) p. 15: to capture and manage successfully the expectations of diverse stakeholders).

To understand the needs of the stakeholders, they have to be identified and examined thoroughly. Due to the fact, we weren't able to contact our stakeholders and ask them about their needs and wishes, regarding the project, we tried to empathize with the stakeholders

and decided on their needs and wishes on our own. The priorities are listed below (regarding their importance, whereas 1 has the highest importance and so on):

1. Finished product
2. Complying with the timeframe
3. App can be downloaded in the App-stores
4. No bugs in the App
5. Customer friendly interface
6. Easy to use/handle
7. Being on Budget

3. Self-evaluation of the project management effort in the project, success or failure? And why?

After the launch of our product we can now reflect on the project management effort and how we approached the best version of our final product by meeting the success factors we set in the planning phase. A Self-evaluation is the best way to make sure what pitfalls can be avoided and to figure out what we can do better in the future.

One of our most important objectives was to make our Stakeholders happy and to provide them a good result. We did our best by holding meetings every two weeks where we discussed the progress and any hurdles we had. We asked them throughout the project if they want any changes or if the main goals changed. We additionally created and evaluated surveys, to find out what kind of person our stakeholders were.

Our stakeholders had certain requirements which we tried to meet. The main idea/requirement was a digital learning platform to teach the basic principles of project management. To us, it was very important that the final product not only provided the theoretical principles but gave the users the opportunity to apply them in real life situations. We were able to accomplish this goal, by implementing short-stories into the app and providing the user with a realistic situation. This enables the user to adapt the gained knowledge to the certain situation at hand.

Another important success factor was to meet the set budget of our client. Due to the fact that it was a low budget project we had to achieve all the deliverables intern and had to avoid outsourcing at all cost. There we faced a big challenge because we worked with an app building program that could only provide a prototype/ test version of the final product for 5 days. In the end, we had to buy the extended version of the program to make sure the app can be used respectively longer than the 5 days. This issue caused quite some trouble in the end because we had to evaluate if it is worth blowing the budget. We decided that a functioning App was more important than the budget regulations and invested the money nonetheless.

In the end, the budget regulation issue caused a little delay within the final milestone-plan because we had to discuss how we would solve the problem. But we were able to get back on track as we extended our scope of work and took an all nighter, so that we were in time.

The quality requirements were very important and mandatory for the clients, since the stakeholder's satisfaction had a great importance throughout the project. Therefore, we tried to implement all of the customers proposals in the final product.

Finally, the team satisfaction was of great value. We had a good working environment where every individual had the opportunity to state its opinion, that always were respected and appreciated. Communication always went well and there were no misunderstandings while working on the project.

Considering the self-evaluation, the project was a success. We almost met all the success factors we wanted to achieve, and the number of pitfalls were marginal.

A) Please evaluate the degree of your support to the following statement (group-based evaluation):

We evaluate our project management effort as successful

| Scale | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|------------------|----------------------|----------|-------------------------------|-------|-------------------|
| Your response | | | | | |

We conclude, that the project is a success based on the final product. Throughout the project there have been some bumps in the road, but we were able to overcome them and create the amazing App for ProjectFix. The Apps works just the way we wanted it too and we were able to finish the App on schedule which meant no delays for our customers. The peer review, that we conducted in order to analyze if the App is suitable, came back with the average grade of “good” and with some really nice suggestions for improvement, which we included in the final product. As we presented the final product to our client, they were really satisfied and approved the App.

The reason why ProjectFix is not a total success (see the table above) is due to the fact that the budget was blown, and we weren’t able to comply with the set costs.

4. Self-evaluation of the value to the learners? (evaluation of project success) Can you document your assessment?

A) Describe your target audience and the learning objectives of your product

The target group of our product are students who have just started to study project management or related fields, project management interested individuals, people who are in contact with project management in their line of work, individuals who are trying to get a grasp of the project management principles and people who want to polish their general knowledge and maybe even their resume.

The main objective of ProjectFix is to provide a learning aid for all aspiring project managers. By using real life situations, the App provides the user with several possibilities, from which they must choose. Linking them to the project management literature, resulting in theoretical and practical knowledge gained. The situations are project management related and should enable the users to understand the vibe of the situation. After choosing an option (1 out of 4) the App elaborates the user if the answer is correct or not.

This process should enable the user to understand the main principles of project management and how they can be used and applied in real-life situations.

B) A description of the method used to evaluate the final product

For the evaluation of the product we decided on involving project management students and possible future project management students as these could be users of our product. Additionally, we sent some surveys to project management companies, explaining our project and providing them with an overview of the product and ask them to let their juniors, apprentices and trainees answer the questions.

We decided on creating a questionnaire as it is a popular method and therefore, it is easy to understand by the people which are answering the questions. Due to the limited budget, we decided to go with a questionnaire because it has low costs, is conducted easily and even trainees can be used in order to gather the wanted information. Moreover, respondents have adequate time to respond and can be anonymous on request (Annotation: no one wished to remain anonymous). There is no need to visit testers personally as a questionnaire can be easily sent by e-mail. Some respondents were asked in person, at universities, at companies and somewhere contacted through e-mail.

In the end, we were able to receive 73 filled out surveys which we were able to analyze, detect similarities and target issues more precisely.

To evaluate our product for the end-users needs we decided on asking testers the following questions:

1. How would you describe the installation process?
2. How do you like the visual appearance of the learning App?
3. How is the handling of the App?
4. Do you generally like the idea of a project management learning aid?
5. Would you use the App in order to improve your skills?
6. Would you purchase the App?
7. Would you recommend the App to aspiring project managers?
8. Is there anything else you'd like to share, regarding the App?

With these questions we were able to understand how the end-users feel about the product and gives us a chance to discover flaws or improvements. Furthermore, we reviewed the goals and standards, that were set by the customer, and compared them with the final product. A checklist was used in order to analyze the product and the requirements.

C) The number of informants who have contributed to the evaluation, and how these informants have been selected

A total of 150 surveys have been handed out or were sent by email. Out of these 150, 73 surveys got returned filled out, 13 were inadmissible and 64 haven't responded at all. As explained earlier, the survey was conducted by trainees and people who are doing apprenticeships in project management related companies. Furthermore, the surveys were sent to universities, especially to project management departments, with the request to let their students answer the question.

All participants who agreed to fill out the survey, received a temporary link, which enabled them to download a test version of the App to their phone, which was free from charge throughout a 7-day-trial period. It was asked of the participants to spend some time on the App, play around with it and get to know it. After they reviewed the App and its features, they filled out the survey and forwarded them to us. The participants had a time frame of three weeks in which they could return the questionnaire to us.

Due to the fact, that the App was designed for individuals who are just getting started with project management and need some help understanding the basic principles of it, we chose young project managers and mainly students for the survey. There was no differentiation between gender or race. The only criteria that had to be met, was the interest in project management.

D) Results of tests, surveys or interviews with students or persons who have reviewed the final product

The results of the surveys were rather positive (see chart below). Most of the participants were happy about the installation process, satisfied with the appearance and the handling of the learning aid. 46,66% have a positive attitude towards an App that helps you understand the basic principles of project management and 63,71% would download the App in order to improve their knowledge and skills.

| How would you describe the installation process? | | | |
|--|-------------|-------------|-------------|
| | Fast & easy | Complicated | Needed help |
| | 94,00% | 4,00% | 2,00% |

| How do you like the visual appearance of the learning aid? | | | | |
|--|--------|--------|------------|----------|
| Excellent | Good | Ok | Improvable | Horrible |
| 36,12% | 23,91% | 29,27% | 7,82% | 2,98% |

| How is the handling of the App? | | | | |
|---------------------------------|--------|--------|------------|----------|
| Excellent | Good | Ok | Improvable | Horrible |
| 31,10% | 19,30% | 45,43% | 3,10% | 1,07% |

| Do you generally like the idea of a project management learning aid? | | | |
|--|--------|----------|--------|
| | Yes | Not sure | No |
| | 46,66% | 39,45% | 13,89% |

| Would you use the App in order to improve your skills? | | | |
|--|--------|----------|--------|
| | Yes | Not sure | No |
| | 63,71% | 19,56% | 16,73% |

| Would you purchase the App? | | | |
|-----------------------------|--------|----------|--------|
| | Yes | Not sure | No |
| | 45,35% | 31,28% | 23,37% |

| Would you recommend the App to aspiring project managers? | | | |
|---|--------|----------|--------|
| | Yes | Not sure | No |
| | 41,05% | 36,89% | 22,06% |

| Is there anything else you'd like to share, regarding the App? |
|--|
|--|

Apart from the closed questions, the open question at the end of the questionnaire enabled the participants to add any information, they felt were important. As a result of that, we received some interesting suggestions and feedback:

- I really enjoyed the simplicity of the App and how knowledge is transferred in a easy and fun way.
- The videos are a nice idea and provide a hands-on learning. Great!
- Id wish there would be levels, in terms of knowledge levels that you can wok up to, over some time. So, a beginner, intermediate and pro level

- There are some bugs that need to be fixed (starting time)
- Would be nice if you could watch the video several times, in case you missed something or got distracted
- Subtitles would be amazing, so accents don't present a problem

These insights gave us quite a motivational boost along the way, but also pointed out, areas that still needed improvement. After the surveys have been analyzed, we added subtitles to the videos, corrected the mentioned bugs and presented a level system to our customers. Especially the idea with the different skill levels provides us with a great opportunity for follow-up projects, after this one is finished.

E) Please evaluate the degree of your support to the following statement (group-based evaluation):

| | | | | | |
|---------------|---|----------|----------------------------|-------|----------------|
| | Our product is of high quality and we recommend it to be used as learning aid in project management | | | | |
| Scale | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
| Your response | | | | | |

The members of the project management team are certain that they produced an App that can help individuals to understand the basic principles of project management and are able to apply this theoretical knowledge onto real-life situations. It's definitely a good and sufficient tool, for individuals who are just getting the hang of project management.

5. Factors that have contributed to failure / success.

Throughout every project, a team was confronted with hurdles that they had to overcome in order to deliver a successful project. Our project-team consisted of five people with a total of three different nationalities (two Austrians, one German and two guys from the Netherlands). After we joined forces, we sat down together and talked about our goals, our ambitions and the amount of time we want and can invest into the project. After the guidelines and ground rules were set, we started to divide the task and the workload between each other. Regarding the skillset of every team-member, we chose to assign task that would fit the individual members in order to evade the overload of team-members. The next couple of subchapters will elaborate all the factors that played a role in the success of Project Fix.

5.1 Communication

Since the course was being held in English, we decided to communicate and collaborate exclusively in English. Due to the reason that all team members got along really well, right from the start, there weren't any miscommunications throughout the project. We scheduled a total of five meetings, where we discussed the project thoroughly and solved all upcoming questions. We helped each other out, brainstormed together, collaborated with the main purpose of producing an amazing product. Luckily all of our team-members had the same goal in mind, so everyone did their best, in order to succeed. In order to create a good working environment within the team, we undertook several activities as a team. We had dinner together, met for coffee, went on a cabin trip and even held a cook-off. These activities really helped the team to grow and also to bond at the same time. We got to know each other better and became friends along the way. This helped the project immensely, in terms of working together and helping each other out, to create the best possible outcome.

Regarding the ground rules for communication, all members had the same in mind: everyone can share their thoughts, everyone is being heard, there are no bad ideas or contributions, everyone is being treated respectfully and no one is being left out.

5.2 Project team

As elaborated in the chapter before, the project team was a great success. All the five members understood each other right of the bat and worked together without any problems. The working environment was always relaxing and understanding and the good thing about it was, that the members didn't only meet up to discuss the project but also to hang out and enjoy some quality time together. Due to this fact, the understanding of each other grew dramatically and therefore the collaboration took place, even smoother than expected. The respectful interaction between the members promoted everyone to think and speak freely without having to be concerned about mockery. This led to quite a lot of ideas and finally created the idea of the Project Fix App.

5.3 Project schedule and WBS

One of the biggest hurdles, our team had to face, was the deadline of the project. Due to the fact that all members were also taking other courses, were busy with assignments and also travelled around the country, time was always an issue. To conquer this hurdle, all members sat down together and planned the project thoroughly (milestone-plan and WBS). An Excel sheet was created, where every member marked free dates to plan meetings and jour fixes. In these meetings the members determined the scope of the project, how many hours have to be invested, who is responsible for which parts, when the WBS have to be finished and which members would collaborate.

The deadline was set by the customer and a postponement was not possible. Therefore, the members had to define the schedule of the project at the start, so that no one would be overstrained with the workload.

This worked out quite well and the workload was dealt with, without anyone struggling or being under pressure.

5.4 Programming skills of two members

One of the biggest success factors was that two of the members had some experience in creating an App. This saved the team quite some trouble and time at the same time. These two members took it upon themselves to create the App alone while the other members supported them and took care of the other tasks.

5.5 Project Management Skills of two members

It was a real advantage for the team to be equipped with two members that are studying Project management and have knowledge about it. They both have certifications in the area and helped the team out to understand the basic project management guidelines and rules. They knew what tasks need more effort and which ones can be done with less attention and workforce.

5.6 App creation

During the App creation process everything looked fine and no problems appeared. But due to the fact that we used a freeware software to create the App, there was a limited timeframe in which the App would work. After five days the App stopped working and the progress was about to be lost. The team-members decided to purchase the software in order to present a working product to the customer. All members approved the purchase of the software. This enabled the team to own a working software that the customer most certainly will be happy with.

Summed up there were quite some success factors for the project team that enabled them to produce an amazing product and deliver it on time, although not on budget (due to the software purchase). Since the deadline of the project was set in stone from the start and the additional costs weren't the biggest issue of the client, it was necessary to produce a working product within the timeframe! The communication of the members was excellent, if not exceptional and made the project a great success. Hurdles and problems were overcome due to teamwork and cooperation.

6. Most important lessons from your project

Before deciding on the type of product to create, you should first identify the learning objectives of your final product. After that my advice is to write a project handbook. It has all project plans included and specifies the steps of the project. We learned that carrying out an IT project requires skilled project team members. Having all needed resources within a team and not being dependent on outsourcing or external help, saves time and money.

We were lucky to have app developers (beginners, but still) and project managers (beginners, but still) in our team. Moreover, the project team members shared the same culture/humor, which made collaboration easier and more fun. (This may also be a result of going out together, only to grow together as a team, which is very important for projects.) Additionally, it is very important that the team members show commitment. This serves as a motivation for everyone involved.

Furthermore, it is essential to trust each other and to know that the tasks will be carried out. Another “lessons learned” is, that communication is the most important factor in projects. WhatsApp is a great tool for small groups to stay in contact, however, it is inevitable to meet in person to proceed with tasks. Regular communication and contact are essential to have an overview of the progress of the project and helps with planning. When it comes to projects, time is always a rare resource. Our experience suggests planning in the beginning of a project helps to get things done in time. It is also an advantage to have a person taking care of the progress and of deadlines. As perfect as a project schedule seems, projects never stick to the plan. Either deadlines are postponed, or tasks are left undone. Although we postponed deadlines and tasks, we were able to submit the product in time.

7. References

Hussein, B. (2018). The Road to Success: Narratives and Insights from Real-Life Projects, Fagbokforlaget.

8. Peer-review report of Group 33

A) *Based on your evaluation (as a group) please indicate the strengths and weaknesses of the final product.*

Strengths

The idea of the digital learning aid is innovative and up-to-date. Additionally, it combines different ways of learning: watching, reading and listening, which increases the efficiency of learning and remembering. Furthermore, the distribution and access of the learning aid to the learners can be easily provided. The quality of the product is excellent. The different topics of project management (referring to the type of the learning aid) can be learned/watched on different devices (mobile phone, laptop) and this makes this product even more valuable for students as it is possible to study wherever they are. Additional learning material is possible. An additional advantage is that this type of studying does not consume a lot of time. Finally, the presentation with the combination of Kahoot is a very good idea how to advertise the learning aid and to get feedback for it immediately.

Weaknesses

The video may include a lot of information (reading and listening), however, there is no studying without input material. As an extra, there could have been an introduction to the learning aid.

B) *Please evaluate the degree of your support to the following statement (group-based evaluation):*

| | | | | | |
|---------------|---|----------|----------------------------|-------|----------------|
| | The product we reviewed is of high quality and we recommend it to be used as learning aid in project management | | | | |
| Scale | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
| Your response | | | | | |

C) On a scale from 0 to 10. **What grade would you recommend for this product?**