Sample report

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The Kokoa Standard Evaluation
The Process

Access

Our experts in pedagogy and UX are provided with full access to the product and its relevant materials, such as lesson plans and teacher's guides.

Kokoa Evaluation Software

While our experts use the product, they analyse its pedagogical approach and usability with KOKOA evaluation software.

Outcome

The evaluation report is presented to the client during a video call, and the product will be granted the Kokoa Standard certificate If it meets the standards

All Kokoa certified products can be found on **www.kokoa.io**

ViLLE

ViLLE is a learning environment that includes a wide range of courses from a variety of subjects

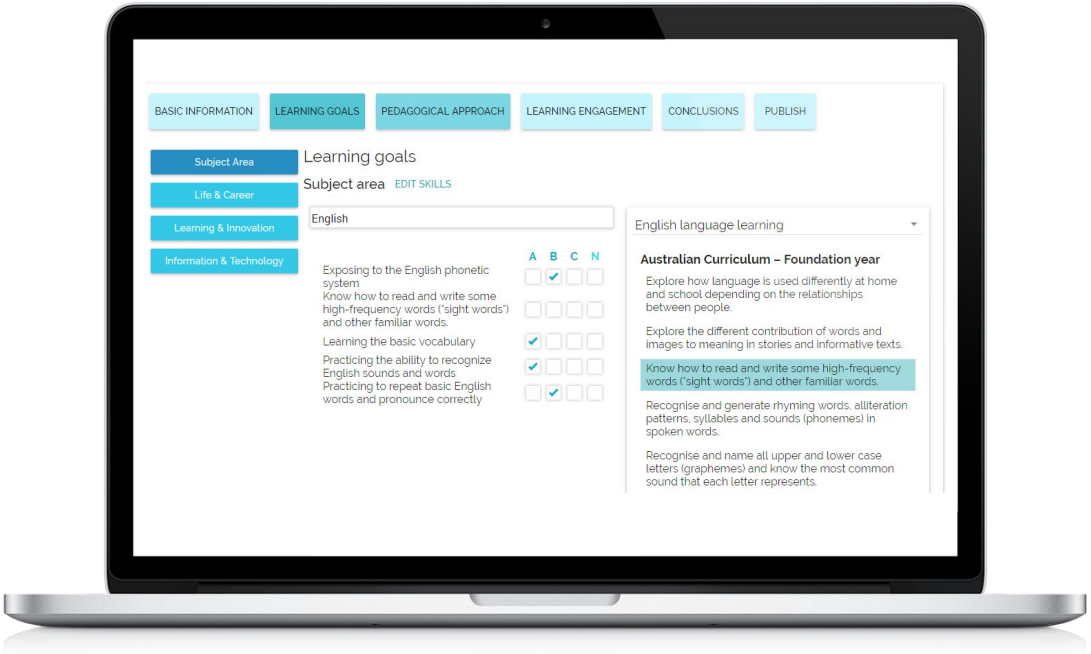
Learning Goals

Matching the learning goals

The evaluator maps the product's learning goals against a specific curriculum/curricula.

All supported skills are listed and classified as *didactic (A-level)* or *facilitative (B-level)* goals.

The Kokoa Tool has several hundred skills listed from various national curricula on a number of subjects (Languages, STEM, Arts, etc.)



A

Primary Goals

Content is instructional and didactic: These skills are constantly learnt in the core usage.

B

Secondary Goals

Content is partly instructional, partly facilitative: These skills are learnt in the core usage, but are not essentially and constantly stressed.

N

Non-Existing

Content does not exist: Learning these skills would be a meaningful part of the use of the solution but they are missing.

Subject Area

Multiple subject areas / Learning Management

A note about the learning goals mapping

ViLLE includes a wide range of courses for different subjects, targeted to different ages. A 3rd grade mathematics course was reviewed in this evaluation as an example of the course material in ViLLE, and the Subject Area Learning Goals are marked only for this course.

Subject area - Primary skills

Mathematics - Number – addition and subtraction - UK National Curriculum 2013 - Key stage 2 – year 4

1. Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. A
2. Estimate and use inverse operations to check answers to a calculation. A
3. Solve two-step addition and subtraction problems in contexts, deciding which operations and methods to use and why. A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Number – multiplication and division - UK National Curriculum 2013 - Key stage 2 – year 4

1. Solve problems involving multiplication and addition, as well as using the distributive law to multiply two digit numbers by one digit, integer scaling problems, and harder correspondence — A
2. Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. — A
3. Use place value and known and derived facts to multiply and divide mentally, in ways such as: multiplying by 0 and 1; dividing by 1 and; multiplying three together numbers. — A
4. Recognise and use factor pairs and commutativity in mental calculations. — A
5. Recall multiplication and division facts for multiplication tables up to 12 × 12. — N

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Number – fractions - UK National Curriculum 2013

- Key stage 2 – year 4

1. Using diagrams, recognise and show the families of common equivalent fractions. A
2. Add and subtract fractions with the same denominator. A
3. Recognise and write decimal equivalents of 1/4, 1/2, 3/4. A
4. Recognise and write decimal equivalents of any number of tenths or hundredths. A
5. Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths, and hundredths. A
6. Round decimals with one decimal place to the nearest whole number. A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Number – fractions - UK National Curriculum 2013

- Key stage 2 – year 4

7. Compare numbers with the same number of decimal places up to two decimal places. A

8. Solve simple measure and money problems involving fractions and decimals to two decimal places. A

9. Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. A

10. Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number. A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Number - number place and value - UK National Curriculum 2013 - Key stage 2 – year 4

1. Count in multiples of 6, 7, 9, 25, and 1000. A
2. Find 1000 more or less than a given number. A
3. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones). A
4. Order and compare numbers beyond 1000. A
5. Identify, represent and estimate numbers using different representations. A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Number - number place and value - UK National Curriculum 2013 - Key stage 2 – year 4

6. Round any number to the nearest 10, 100, or 1000. A

7. Solve number and practical problems that involve all of the above and with increasingly large positive numbers. A

8. Count backwards through zero to include negative numbers. N

9. Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value N

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Measurement - UK National Curriculum 2013

- Key stage 2 – year 4

1. Convert between different units of measure [for example, kilometre to metre; hour to minute]. A
2. Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. A
3. Find the area of rectilinear shapes by counting squares. A
4. Read, write, and convert time between analogue and digital, 12- and 24-hour clocks. A
5. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. A

10. Estimate, compare, and calculate different measures including money, in pounds and pence. N

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Subject area - Primary skills

Mathematics - Geometry – properties of shapes - UK National Curriculum 2013

- Key stage 2 – year 4

1. Identify acute and obtuse angles and compare and order angles up to two right angles by size. A
2. Identify lines of symmetry in 2-D shapes presented in different orientations. A
3. Complete a simple symmetric figure with respect to a specific line of symmetry. A
4. Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Life & Career

Wellbeing and Sustainable Development / Cross-Disciplinary Thinking / Cross Cultural Skills and Global Awareness / Work life skills and Entrepreneurship / Social Skills /

Life & Career skills

Cross-Disciplinary Thinking

1. Practicing to notice causal connections . . . . . A
2. Learning to build information on top of what was previously learned . . . . . A
3. Encouraging to build new information and visions . . . . . A
4. Learning to combine information to find new innovations . . . . . A
5. Practicing to notice links between subjects learned . . . . . A

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Life & Career skills

Work life skills and Entrepreneurship

1. Learning to plan and organize work processes . . . . . A
2. Practicing decision making . . . . . A
3. Practicing versatile ways of working . . . . . A
4. Practicing time management . . . . . A
5. Connecting subjects learned at school to skills needed at worklife . . . . . B
6. Realizing the connection between subjects learned in free time and their impact to skills needed in worklife . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Life & Career skills

Social Skills

1.	Practicing to argue clearly about one's own opinions and reasonings	A
2.	Enabling the growth of positive self-image	A
3.	Learning to listen to other people's opinions	B
4.	Learning decision-making, influencing, and accountability	B
5.	Practicing communication through different channels	B
9.	Practicing to give, get, and reflect feedback	B
10.	Practicing to work with others	N

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Life & Career skills

Cross Cultural Skills and Global Awareness

1. Encouraging to build new information and visions . . . . . A
2. Learning to understand people, surroundings, and phenomena around us . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Life & Career skills

Wellbeing and Sustainable Development

1. Learning to face failures and disappointments . . . . . B
2. Encouraging the growth of positive self-image . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Learning & Innovation

Creativity and Innovation / Learning to Learn / Critical Thinking & Problem Solving / Cognitive and thinking skills /

Learning & Innovation

Learning to Learn

1. Practicing persistent working ..... A
2. Practicing to find ways of working that are best for oneself ..... A
3. Practicing to take responsibility for one's own learning ..... A
4. Practicing to evaluate one's own learning ..... A
5. Learning to find the joy of learning and new challenges ..... A
6. Practicing to set one's own learning goals ..... B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Learning & Innovation

Critical Thinking & Problem Solving

1. Developing problem-solving skills . . . . . A
2. Practicing to create questions and make justifiable arguments based on observations . . . . . A
3. Practicing to plan and execute studies, make observations and measurements . . . . . A
4. Practicing strategic thinking . . . . . A
5. Learning to recognise and evaluate arguments and their reasonings . . . . . B
6. Practicing to notice causal connections . . . . . B
7. Practicing to look at things from different perspectives . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Learning & Innovation

Cognitive and thinking skills

1. Learning to notice causal connections — A
2. Practicing categorization and classification — A
3. Practicing memorizing skills — A
4. Practising visual recognition — A
5. Practicing fine motor skills — B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Learning & Innovation

Creativity and Innovation

1. Practicing creative thinking . . . . . B
2. Encouraging students to be innovative and express new ideas . . . . . B
3. Creating requirements for creative thinking . . . . . B
4. Practicing to use imagination to boost innovation . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Information & Technology

Media and Information Literacy / Multimodal Literacy / ICT Literacy /

ICT Literacy - Primary skills

ICT Literacy

1. Practicing logical reasoning, algorithms, and programming through making . . . . . A
2. Using technology resources for problem solving . . . . . A
3. Using technology as a part of the exploratory process . . . . . B
4. Building common knowledge of technological solutions and their meaning in everyday life . . . . . B
5. Using technology as a part of the explorative and creative process . . . . . B
6. Using technological resources for finding and applying information . . . . . B
7. Understanding and practicing safe and responsible uses of technology . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

ICT Literacy - Primary skills

Multimodal Literacy

1. Understanding and interpreting of matrices and diagrams . . . . . A
2. Learning to acquire, modify, and produce information in different forms . . . . . A
3. Practicing logical reasoning to understand and interpret information in different forms . . . . . A
4. Using technology as a part of the explorative and creative process . . . . . B
5. Practising to understand visual concepts and shapes, and to observe their qualities . . . . . B
6. Learning to understand and interpret diverse types of texts . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

ICT Literacy - Primary skills

Media and Information Literacy

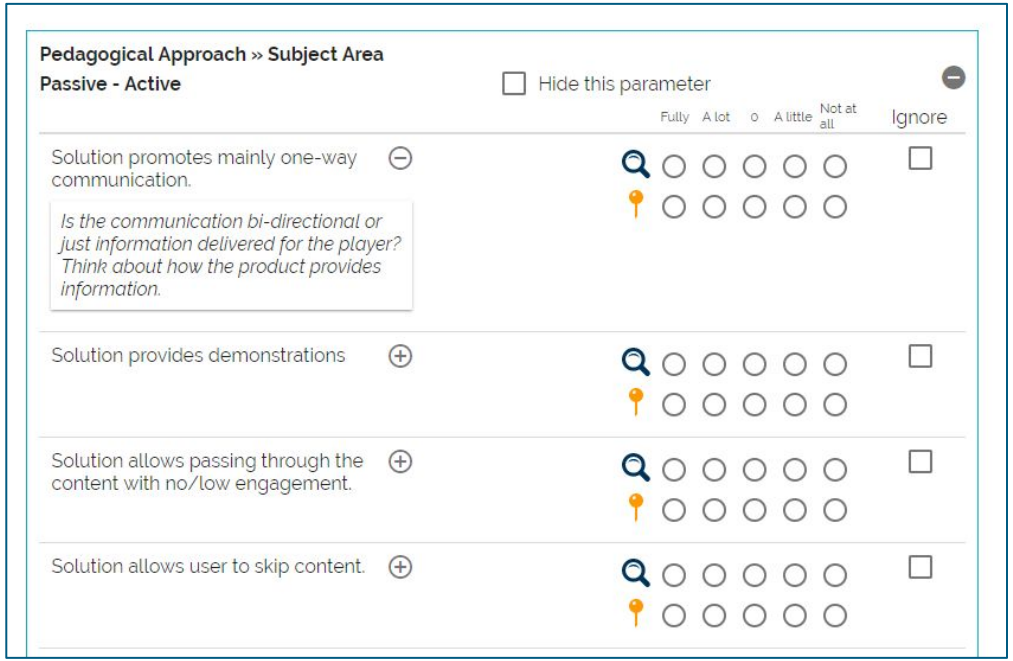
1. Practicing to use information independently and interactively . . . . . B
2. Practicing keyboard skills and touch typing . . . . . B

A = Primary goal: content is didactic

B = Secondary goal: content is facilitative

Pedagogical Approach

Assessing the pedagogy



The evaluator answers a set of statements to assess the product's pedagogical approach.

The answers to the questions result in a numeric score on each parameter. The parameters are shown as contrary pair sliders.

The assessment is divided into four parameters:

1. Passive – Active
2. Rehearse – Construct
3. Linear – Non-linear
4. Individual – Collaborative

The set of questions and definitions have been developed by researchers from the Helsinki University.

Criterion definition

Passive / Active

Passive: Learner in an observant role

Active: Learning by doing

Individual / Collaborative

Individual: Learner is learning by themselves

Collaborative: Requires collaboration with other learners

Linear / Non-linear

Linear: Proceeding linearly through repetitive tasks

Non-linear: Supports free exploration and finding solutions in variable ways.

Rehearse / Construct

Rehearse: Practicing what was previously learned

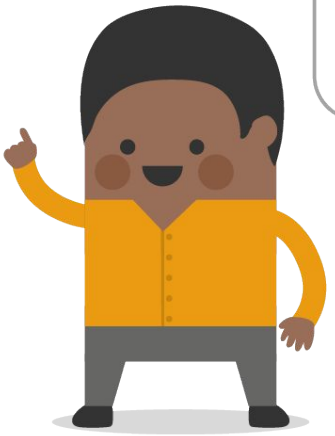
Construct: Learning and constructing new concepts

How to read the contrary pair analysis?

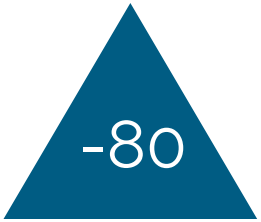
Individual — 76 — **Collaborative**

The magnifier tells where the product currently positions the learner, in the pedagogical dimension.

The pin shows where the product should position the learner according to the pedagogical principles.

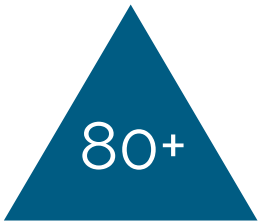


The Rating Scale



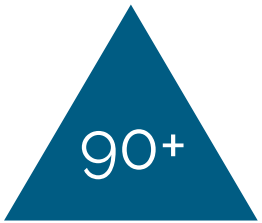
Fair

There are crucial issues with the pedagogical approach. Improvements are necessary in order to achieve high educational quality.



Good

The pedagogical approach is valid. However, many improvements could be made to improve this aspect of the learning experience.



Excellent

The pedagogical approach is innovative and meaningful. Some improvements could be made to improve this aspect of the learning experience.

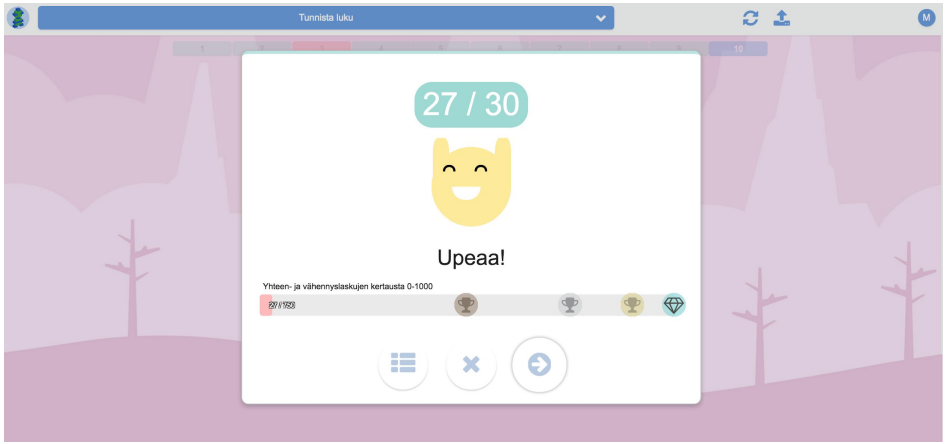
Outstanding

The product is exceptionally innovative and provides high educational value. The content is delivered in an extremely meaningful and engaging way.

Passive - Active: 95/100 = Outstanding

Passive — 95 — Active

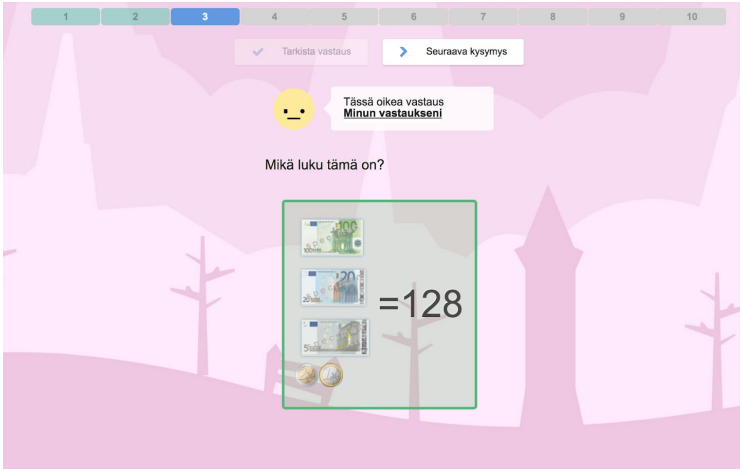
Strengths: VILLE offers an enormous amount of content and exercises that a teacher can use to curate a suitable package for their students. Students are in an active role in solving the tasks. ViLLE includes a wide range of tasks from multiple choice to open assignments, which the teacher can review. Pupils can try the same task several times and will be told if they get the task right or wrong.



Passive - Active: 95/100 = Outstanding

Passive 95 Active

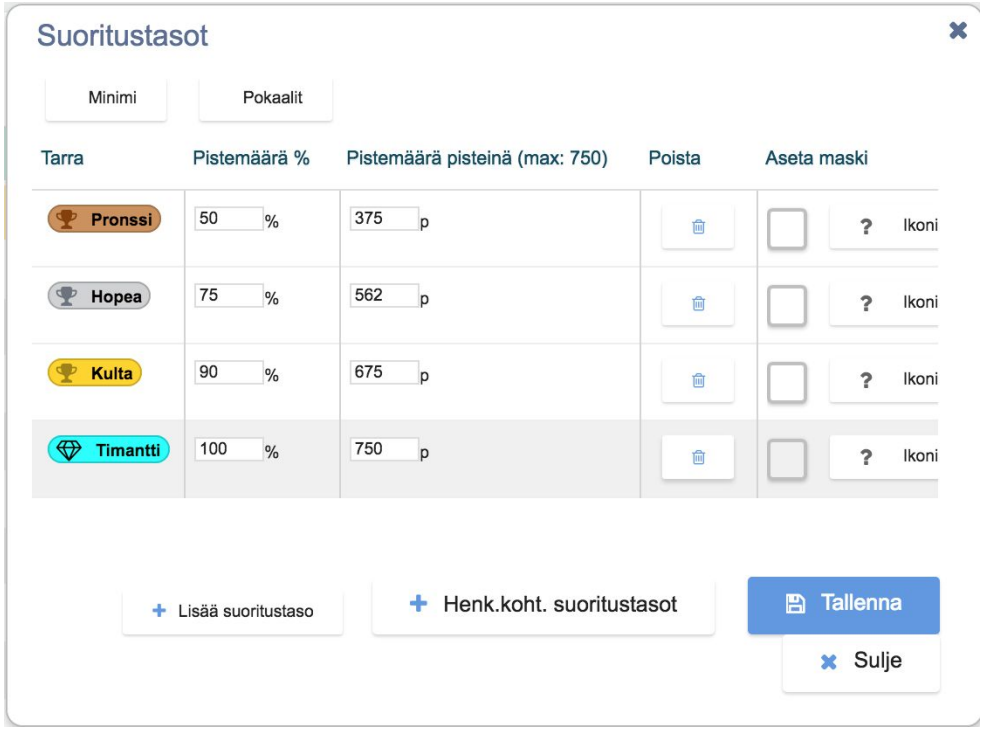
Development areas: The teacher can set up the tasks in a way that lets the students choose which tasks they will perform. However, learning could be supported more smoothly if students were able to set goals and learning paths more prominently by themselves. Pupils collect points from the tasks, but they are not very motivating. The rewarding systems could be developed to be more versatile. The feedback could also be more versatile since, in many tasks, students do not see their own false answer from the same view as the feedback, so they needs to switch between two different views. It would also be important to tell what went wrong in the task and how to solve it, not just delivering the right answer.



Rehearse - Construct: 91/100 = Excellent

Rehearse — 91 — Construct

Strengths: ViLLE complements teaching in classrooms and acts as a direct continuation of textbooks. It is easy to adopt, regardless of the teacher's previous digital skills. Especially in the case of mathematics content, the teacher first goes through the content with the student, and VILLE provides a large number of exercises for support and practicing. However, the teacher can tailor the content to suit different student groups or individual pupils. Students can also choose the level of difficulty in some tasks.



Rehearse - Construct: 91/100 = Excellent

Development areas: Would it be possible to develop the product reward system to be more motivating? At the moment, it is quite simple and doesn't offer many levels of goals. The system could also explain more clearly what the learner has learned. For example, "You can now assemble the number 10 in six different ways." It would also be good if students could define their own learning goals and the rewards would be linked to them. In this case, the possibility of self-assessment could also be tied to the reward. It can be done in a very simple manner, but it would teach students important skills and give the teacher the knowledge of what students feel is challenging for them and where they need more support.

Linear - Non-linear: 97/100 = Outstanding

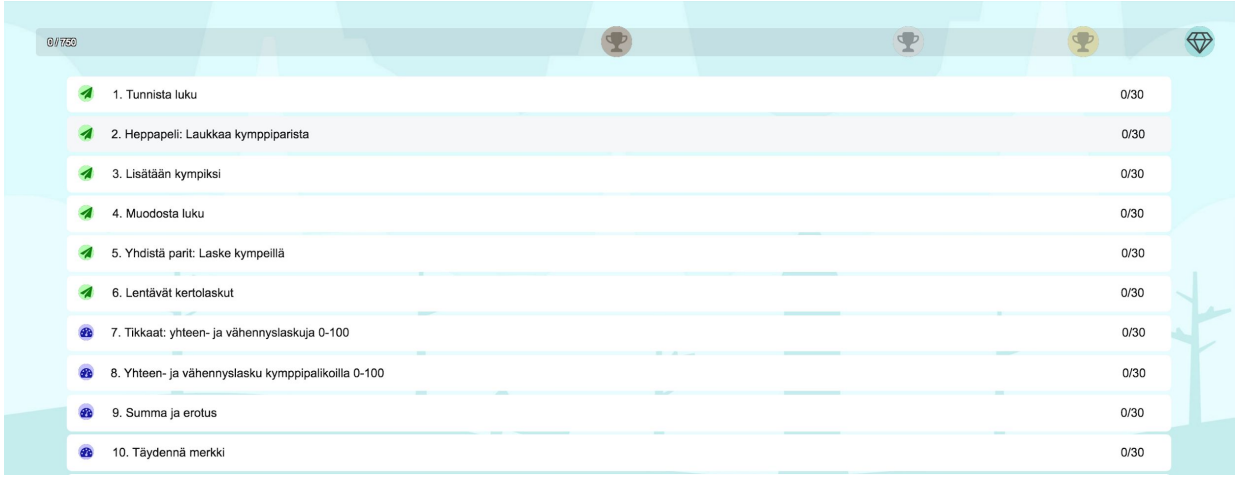
Linear — 97 — Non-linear

Strengths: A teacher can freely determine what content is visible to students. However, within the lesson, the students themselves can decide the order in which the tasks are performed and have the opportunity to do the same task as many times as they want. Students will also be able to choose the level of difficulty in some tasks. ViLLE offers comprehensive analytics for the teacher, which makes it easy to follow the students' work and progress. The solution adapts nicely to users in the field of multidimensional learning.

Linear - Non-linear: 97/100 = Outstanding

Linear 97 Non-linear

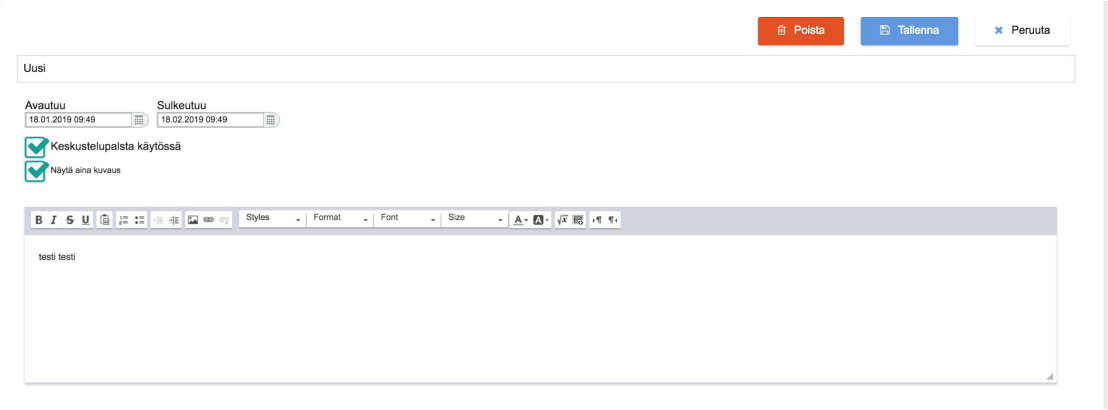
Development areas: Under mathematics, a large part of the tasks have only one right answer, and when it is found, it is often not meaningful to do the task again. Would it be possible to offer some additional open-ended challenges and problem-solving tasks, especially for those students for whom basic tasks are easy? At the moment, the teacher has the responsibility to provide creative tasks. It would also be worth exploring how students could tailor their own learning paths.



Individual - Collaborative: 92/100 = Excellent

Individual 92 Collaborative

Strengths: Progress in ViLLE is individual and depends on the performance of each student. Performing tasks does not require communication with other students, but it is possible for several students to perform the tasks together using the same device. It is also possible to open a discussion board for the students when creating an exam in ViLLE.



Individual - Collaborative: 92/100 = Excellent

Development areas: Can the teacher set some kind of challenges for the students to solve and collect points as a class or in small groups? This way, the learning experience could include a positive element of competition, and teamwork skills will be practiced. Opportunities for collaboration could also involve creative skills or problem

Learning Engagement

The Six Aspects of Learning Engagement

Autonomy

The user feels that their actions in the product are based on their own decisions, free of external pressure.

Competence

The user can feel capable and effective in their actions rather than incompetent or ineffective.

Relatedness

The user feels that in the product, there is meaningful contact with people who care about them rather than feeling lonely and neglected. Users can also feel connection with fictional characters and events in the product.

Respect

The user feels that they are considered as a capable and desired actor rather than one whose opinions and experiences are neglected.

Stimulation

Feeling that the product offers plenty of enjoyment and pleasure rather than a feeling of boredom and understimulation.

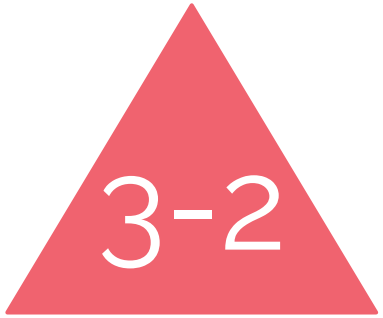
Safety

Feeling that the product is a safe environment for having fun and trying out things rather than feeling uncertain of the consequences or being threatened by other users.

The Rating Scale

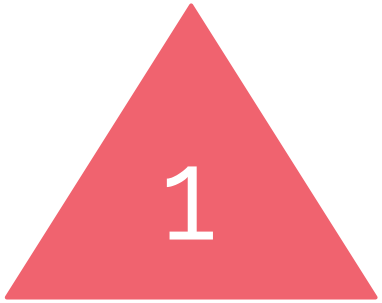
Well supported

There are several well executed features which support this aspect of learning engagement.



Supported

The product considers this aspect of learning engagement. Some improvements could be made in order to improve the support.



Not Supported

There are issues with the learning engagement in this area.

Autonomy Score: 3.3/5 = Supported

The players' actions in the product are based on their own decisions rather than external pressure to choose a certain action.

Main strengths	Score
1. It is easy to understand the aim of using the product.	4.5
2. The product sets limitations for use; when and where to use it, and the limitations feel unnecessary or annoying.	5

Students are free to choose the order of the tasks within the lessons and have the ability to influence the level of difficulty in some tasks. The same learning goals can be practiced in a variety of tasks.

Autonomy Score: 3.3/5 = Supported

The players' actions in the product are based on their own decisions rather than external pressure to choose a certain action.

Main development areas	Score
1. The user can create their own goals for the use.	2.5
2. It is possible to use creativity to express yourself when using the product.	2

The motivation and rewards offered by ViLLE have been built very lightly and may not be interesting to all students. But developing them to be more versatile could increase the students' motivation and enthusiasm. For example, the student could be shown what kind of activities they perform poorly on, and based on that the system, tasks could be suggested to help them practice more.

Competence Score: 3.9/5 = Supported

Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective

Main strengths	Score
1. Navigation in the product is easy and intuitive.	4.5
2. The challenges and tasks in the product feel optimal for the targeted users	4.5
3. The first time experience is encouraging, and it is easy to learn to use the product	4

Students have some influence on the level of difficulty ,and the teacher can tailor the content to suit each student or group. From the student's point of view, the product is quite easy to use and navigate. Student feedback is appropriate and functional.

Competence Score: 3.9/5 = Supported

Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective

Main development areas		Score
1.	It is possible to feel successful and proud of myself when I am using the product.	3.5
2.	Experienced and advanced users can find more challenge in the product.	3.5

ViLLE offers an enormous amount of content, but it may be difficult for a teacher to perceive the scope of a product, as the content is hidden and it requires some effort to view all of it. Could the different areas be more visible, and the teacher navigation made clearer? The interface doesn't scale correctly on mobile devices when performing tasks (tested on iPhone 7).

Relatedness Score: 3/5 = Supported

The product supports meaningful contact with people who care about your actions rather than feeling that the contact is one-sided or meaningless. The user can feel connection with fictional characters and events in the product.

Main strengths	Score
1. The product uses language that makes you feel welcome and cared for.	4.5
2. The product supports communication with other people and there is are good reasons to communicate .	3.5

The product is clear and easy to use from the student's point of view, and there are no obstacles for the use. The look is simple and focused on learning, making it feel neutral for most users.

Relatedness Score: 3/5 = Supported

The product supports meaningful contact with people who care about your actions rather than feeling that the contact is one-sided or meaningless. The user can feel connection with fictional characters and events in the product.

Main development areas	Score
1. The story or fictional world present in the product motivates learning	2
2. The visuals and characters in the product are suitable for targeted users.	2.5

The look of the product may not seem modern and appealing to all users. It is also not optimized for mobile devices. It would be worthwhile to invest in the visuals and rewarding possibilities if the goal is to bring the product to the international market. The interface is now very school-like, which may alienate students who are not interested in the subject.

Respect Score: 4/5 = Well supported

Feeling that the product takes the user into account as a capable and desired actor rather than feeling that the user's opinions and experiences are neglected.

Main strengths	Score
1. The product is suitable for both inexperienced and experienced users. Players can eg. skip tutorials or choose wanted difficulty levels	4.5
2. The product doesn't have bugs which cause errors or crashing.	4.5

The product is suitable for a wide variety of users, as its layout is very simple. It doesn't have background stories or characters, so it's not clearly for example younger users. The product works smoothly.

Respect Score: 4/5 = Well supported

Feeling that the product takes the user into account as a capable and desired actor rather than feeling that the user's opinions and experiences are neglected.

Main development areas	Score
1. The product gives clear feedback on all your actions	3.5

The feedback provided by ViLLE to the students after the assignments could be more diverse and support finding the right answer, and not just telling if you did the task right or wrong and what the right answer was. In addition, some tasks require the user to navigate between two views to see their own answer and the correct answer.

Stimulation Score: 3.5/5 = Supported

Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and unstimulated by the product.

Main strengths	Score
1. The product's challenge level is optimal for the targeted users, or it can be chosen	4.5
2. The user doesn't unnecessarily need to repeat things which they have already learned	3.5

The product has extensive content, so the teacher can choose tasks for the level of difficulty of their students. Students can also choose what tasks on the lessons they will perform and in what order.

Stimulation Score: 3.5/5 = Supported

Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and unstimulated by the product.

Main development areas	Score
1. The product's graphics, sounds and other elements support the narrative and user experience in a meaningful way and are pleasant.	2.5

The visual appearance of the product is very simple and could be more expressive, making it more motivating and inspiring for the students.

Safety Score: 4.1/5 = Well supported

Feeling that the product is a safe environment for having fun and trying out things rather than feeling uncertain of the consequences or being threatened by other users

Main strengths	Score
1. The product doesn't include content or advertising that could be harmful for the targeted users	5
2. If the user shares content - their work, their comments or anything else - it is always clear who has access to the shared content.	5
3. The user cannot make irreversible errors. Points that lead to restarting the use or re-doing things without a considerable effort should not be possible	5

The product is safe to use and there seems to be no security issues. Student's' answers are only shared with the teacher and no other students have access to them. Data is automatically saved, so you can't lose answers and achievements.

Safety Score: 4.1/5 = Well supported

Feeling that the product is a safe environment for having fun and trying out things rather than feeling uncertain of the consequences or being threatened by other users

Main development areas	Score
1. Making errors is beneficial. Everytime you make an error, you learn something from it.	3

When a student makes a mistake, it would be good to give more feedback and guide the student towards the right answer but without giving it directly.

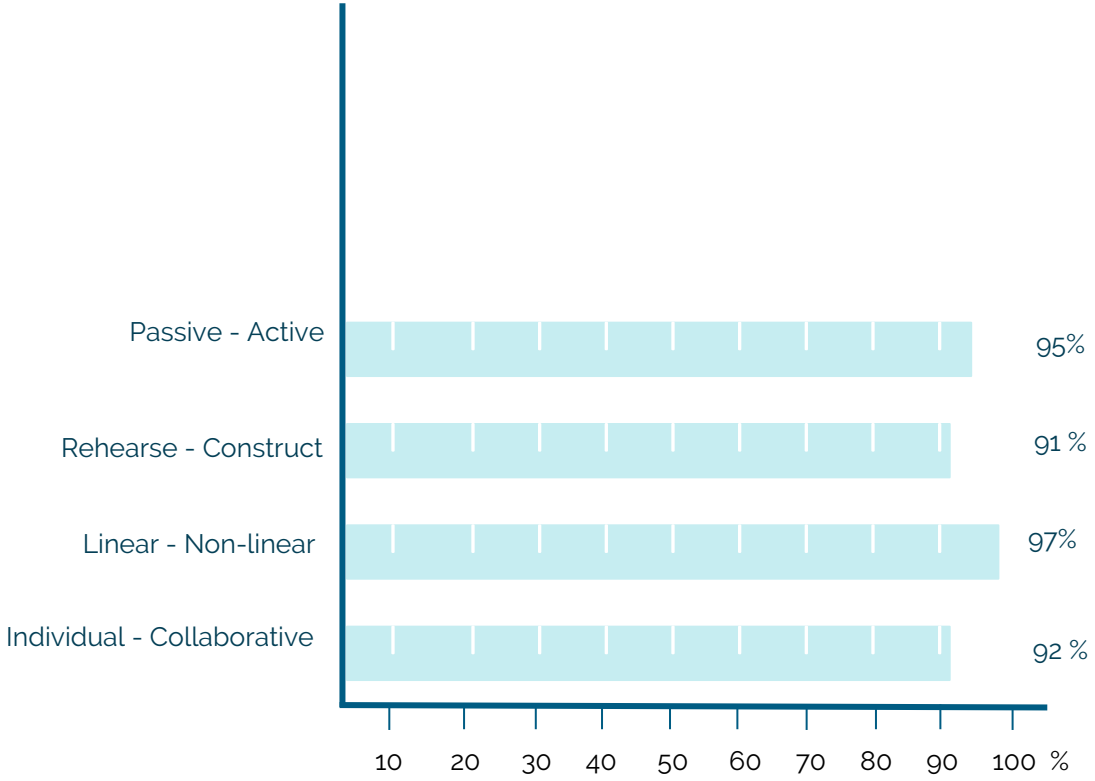
Results

Pedagogical Approach

Combined scores of pedagogical dimensions:

- UK Curriculum: 30 skills
- Life & Career: 25 skills
- Learning & Innovation: 22 skills
- Information & Technology: 15 skills

The score explains how the product performs when considering different pedagogical dimensions. According to the analysis, the main development needs are **learning experience more constructive** and adding elements of **collaboration.**



ViLLE
High Educational Quality Aspects

1. ViLLE offers extensive content in mathematics, Finnish language, programming and many other subjects from preschool to high school.
2. The courses have clear learning goals
3. The tasks are versatile and the teacher can easily tailor the content and level of difficulty of the tasks to suit different student groups and pupils.
4. The teacher can see a comprehensive analysis of pupils' progress and performance.
5. The product is easy to set up and works properly

Pedagogical Approach 94 %

Learning Engagement 3.7

According to Kokoa Education Standard evaluation, ViLLE represents high educational quality and is proven to promote learning efficiently.

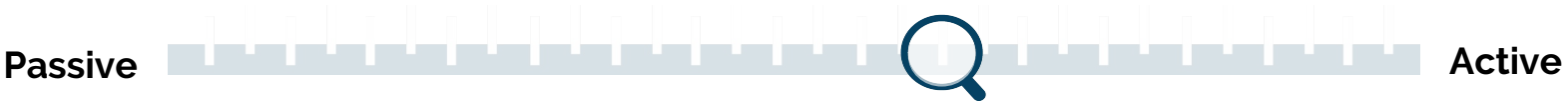
Background

*Expert Evaluation of **what** the solution teaches and **how** it teaches*

Pedagogical approach - Passive / Active

Regarding the role of the student, we characterize the learning solution as promoting learning that is situated somewhere on the scale between *passive* and *active*. As key components determining the characteristics of the solution on this scale, we use *accountability, behavioural engagement, and emotional engagement.*

Agency	**Behavioural engagement**	**Emotional engagement**
Autonomy	*Interactivity*	*Activating motivation*
Self-regulation	*Engagement*	*Sustaining motivation*
Intentionality	*Scaffolding*	*Feed forward*



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Pedagogical approach - Rehearse / Construct

Regarding the learning activities, we characterize the learning solution as promoting learning that is situated somewhere on the scale between rehearse and construct. As key components determining the characteristics of the solution on this scale, we use *sparking of interest*, *building of knowledge*, and *reflection of learned*.

Interest	**Knowledge building**	**Reflection**
Activating interest	*Defining goals*	*Reflection*
Mapping prior knowledge	*Applying existing knowledge (adaptation/ assimilation)*	*Decision-making*
Customisation	*Knowledge creation*	*Difficulty optimisation*

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Pedagogical approach - Individual / Collaborative

Regarding the learning activities, we characterize the learning solution as promoting learning that is situated somewhere on the scale between individual and collaborative. As key components determining the characteristics of the solution on this scale, we use *interaction, responsibility* and *regulation*.

Interaction	**Responsibility**	**Regulation**
Interaction	*Accountability*	*Self / co-regulation*
Fostering collaboration	*Peer support*	*Personal / shared learning goals*
Content sharing	*Information sharing*	*Independency / co-dependency*

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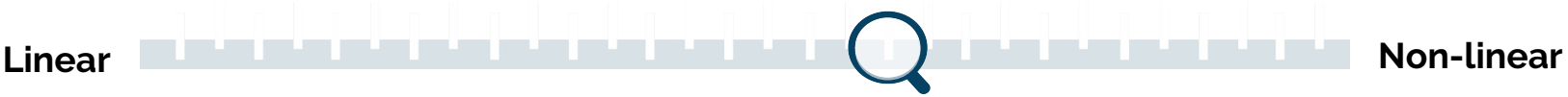
Pedagogical approach - Linear / Non-linear

Regarding the learning process, we characterize the learning solution as promoting learning that is situated somewhere on the scale between linear and non-linear. As key components determining the characteristics of the solution on this scale, we use *procession* and *predictability*.

Process	**Predictability**
User progression	*Predictability of outcomes*
UX optimisation	*UX limitations*



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Assessing User Happiness

The user experience evaluation is conducted from the perspective of user happiness. The evaluation assesses how fun and engaging a product is to use, and it is suitable for entertainment games, learning games and utility apps.

The evaluation uses a list of heuristics which focus on the activities the users are able to do with the product and how these interactions make the users feel. It considers the general usability of the products but looks behind issues which are not essential for the experience. Therefore, this type of evaluation is also suitable for proof of concept state prototypes and ideas.

The evaluation report serves as a tool for the design and development team. It shows what the features that support the user happiness the best are and how they do it. It will also point out things that hinder the happiness and ways the experience could be improved.

Sources: The aspects of user happiness are adapted from Hassenzahl, Marc et all: Designing Moments of Meaning and Pleasure. Experience Design and Happiness. International Journal of Design Vol. 7 No. 3 2013

Autonomy	*The user's actions in the product are based on their own decisions rather than external pressure to choose a certain action.*
1. The user can create their own goals for the use of the product.	4. The product sets limitations for use; when and where. And the limitations feel unnecessary or annoying.
2. The product motivates the user as well	5. It is possible to make choices, and the different choices have clearly different and meaningful outcomes.
3. It is easy to understand the goal of using the product.	6. It is possible to use creativity to express yourself when using the product.

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
Nielsen, Jacob. (1994a). Enhancing the explanatory power of usability heuristics.

Competence	*Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective*
1. The product rewards the user in a meaningful way and according to the challenge.	5. Progression on the product depends on succeeding on things relevant for learning.
2. The product gives you enough information to use it efficiently.	6. The first time experience is encouraging and it is easy to learn to use the product.
3. Navigation in the product is easy and intuitive.	7. It is possible to feel successful and proud of oneself when using the product.
4. The challenges and tasks in the product feel optimal for the targeted users.	Experienced and advanced users can find more challenge in the product..

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
Nielsen, Jacob. (1994a). Enhancing the explanatory power of usability heuristics.

Relatedness	*In the product, there is meaningful contact with people who care about your actions rather than feeling that the contact is one-sided or meaningless. The user can feel connection with fictional characters and events in the product.*
1. The story or fictional world present in the product motivates learning	4. The product supports social interaction, such as multiplay or sharing of content with other people
2. The product uses language which makes you feel welcome and cared for.	5. The product provides examples or motivation to learn the skill it tries to teach.
3. The visuals and characters in the product are suitable for targeted users.	6. The product supports communication with other people and there are a number of good reasons to communicate

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
Nielsen, Jacob. (1994a). Enhancing the explanatory power of usability heuristics.

Respect	*Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective*
1. The product gives clear feedback on all your actions	4. The product is suitable for both inexperienced and experienced users. Players can, for example,. skip tutorials or choose their desired difficulty levels
2. The product doesn't make assumptions on player's age, gender, race, or origin.	5. The product doesn't have bugs which cause errors or crashing.
3. The product doesn't include discriminative narrative or enforce unnecessary stereotypes.	

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
Nielsen, Jacob. (1994a). Enhancing the explanatory power of usability heuristics.

Stimulation	*Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and unstimulated by the product.*
1. The product encourages further exploration	4. The user doesn't need to unnecessarily repeat things which they have already learned
2. The product's challenge level is optimal for the targeted users, or it can be chosen	5. The product's graphics, sounds, and other elements support the narrative and user experience in a meaningful way and are pleasant.

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
Nielsen, Jacob. (1994a). Enhancing the explanatory power of usability heuristics.

Safety	*Feeling that the product is a safe environment for having fun and trying out things rather than feeling uncertain of the consequences or being threatened by other users.*
1. Making errors is beneficial. Every time you make an error, you learn something from it.	4. The user does not lose any hard-won rewards or results if they do something wrong.
2. There is a way to report and possibly block misbehaving users.	5. If the user shares content - their work, their comments, or anything else - it is always clear who has access to the shared content.
3. The product doesn't include content or advertising which would be harmful to the targeted users.	6. The user cannot make irreversible errors. Points that lead to restarting the product or re-doing things without a considerable effort should not be possible.

Sources: The heuristics are adapted from the following sources:
Korhonen, Hannu & M. I. Koivisto, Elina. (2006). Playability heuristics for mobile games.
Inostroza, Rodolfo et all (2012). Usability Heuristics for Touchscreen-based Mobile Devices.
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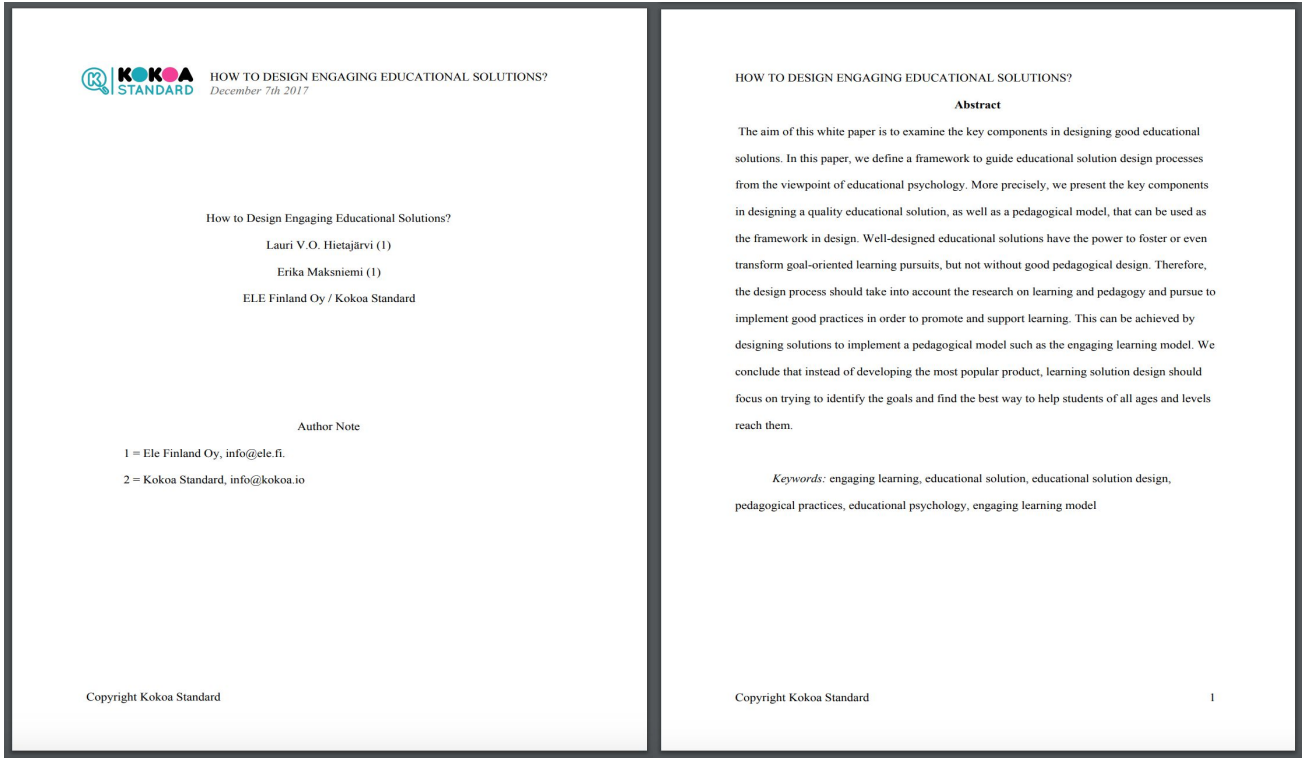
Theoretical background

The white paper article describes the theoretical background of the evaluation.



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HOW TO DESIGN ENGAGING EDUCATIONAL SOLUTIONS?

December 7th 2017

How to Design Engaging Educational Solutions?

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HOW TO DESIGN ENGAGING EDUCATIONAL SOLUTIONS?

Abstract

The aim of this white paper is to examine the key components in designing good educational solutions. In this paper, we define a framework to guide educational solution design processes from the viewpoint of educational psychology. More precisely, we present the key components in designing a quality educational solution, as well as a pedagogical model, that can be used as the framework in design. Well-designed educational solutions have the power to foster or even transform goal-oriented learning pursuits, but not without good pedagogical design. Therefore, the design process should take into account the research on learning and pedagogy and pursue to implement good practices in order to promote and support learning. This can be achieved by designing solutions to implement a pedagogical model such as the engaging learning model. We conclude that instead of developing the most popular product, learning solution design should focus on trying to identify the goals and find the best way to help students of all ages and levels reach them.

Keywords: engaging learning, educational solution, educational solution design, pedagogical practices, educational psychology, engaging learning model

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