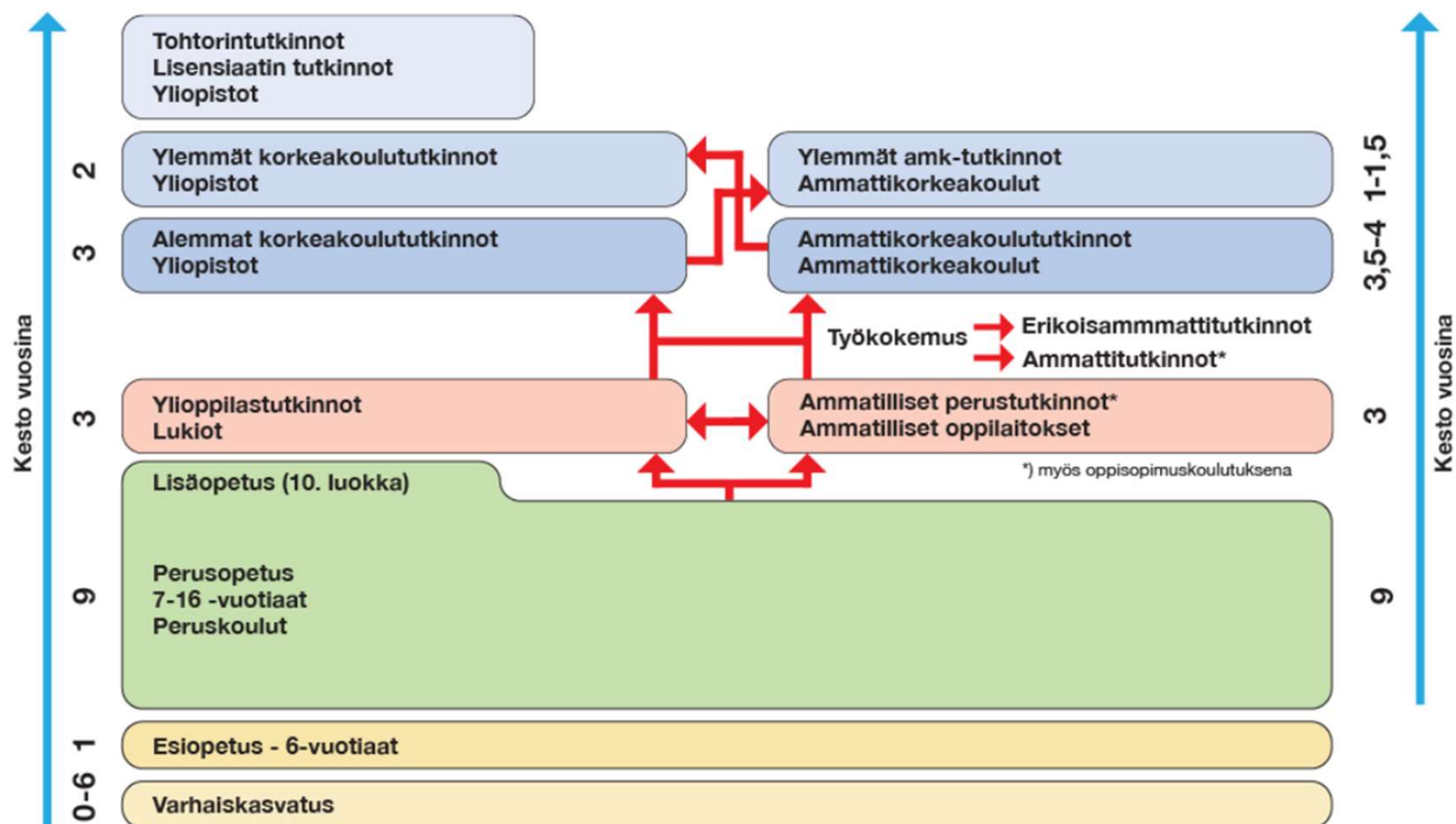




**Training Makes
Dreams Come True**

**Training Makes
Dreams Come True**

Suomen koulutusjärjestelmä





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Riveria in a nutshell

Owned by the municipalities of North-Karelia

Campuses in Joensuu, Kitee, Lieksa, Nurmes, Outokumpu, Valtimo

Students / year

19 000

Vocational qualification students/year: **10 000**

Student years: **5 600**

Vocational qualifications/year: **2 000**

Person-years: **700**

Operating income/year: **70M euros**



80 %



students find employment or continue studies after graduation.

90 % find employment in North-Karelia.

Some of Finland's most successful students in skills competitions

Excellent feedback from students and from working life.
Quality and safety award winner.

RIVERIA

Forest Machine Training Center VALTIMO



RIVERIA.FI

Facilities of Valtimo



Machines

Simulators

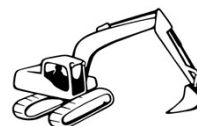


= 8 pcs

=20 pcs



= 20 pcs



= 5 pcs



= 4 pcs

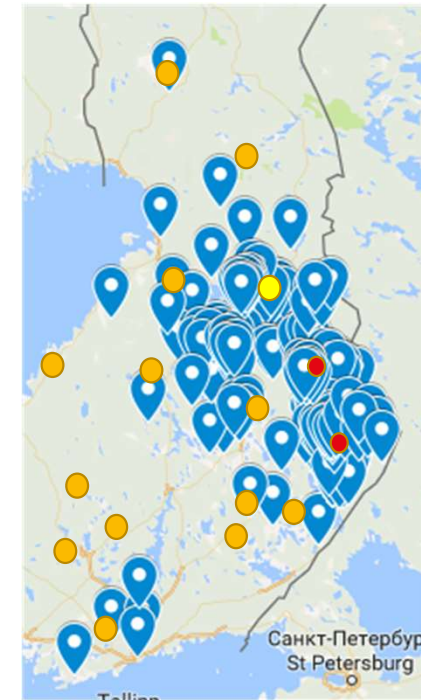
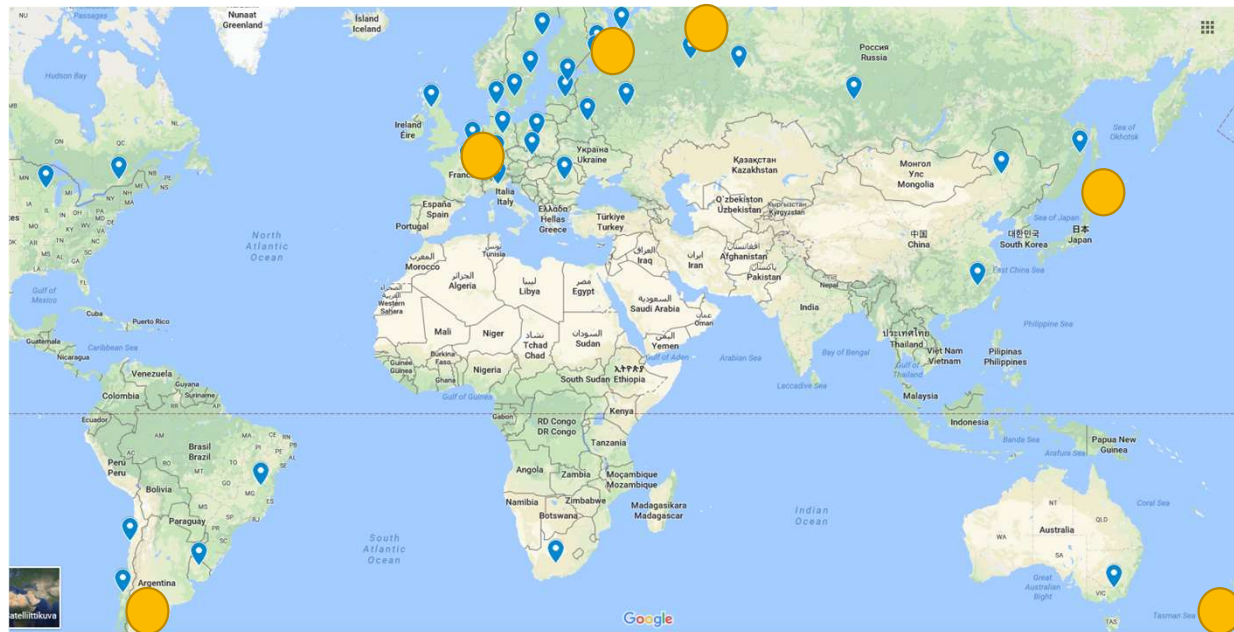
= 4 pcs



= 1 pcs

Forest and forest machine training in Riveria

- > Forest machine training is our passion at **Valtimo**
- > In Finland and all over the world

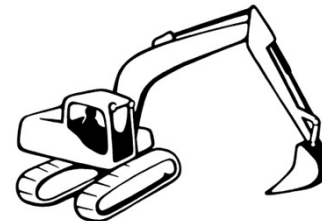
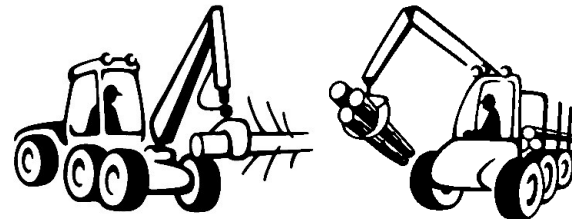


- Valtimo and Joensuu Riveria Forest machine school
- Active international relationship

Curriculum in Valtimo

Vocational qualifications (Youth and adult)

- Harvester operator
- Forwarder operator
- Excavator operator
- Mechanic
- Timber truck driver
- Lumberjack (manual worker)



Specialist and further vocational qualifications (Adult)

- Harvester pro operators
- Forwarder pro operators
- Pro Mechanic
- Supervisors



Model of phased teaching



Virtual simulators

Theory

Basic training in working models and machine management

Measurements and documentation are automatized

Master the basics



Training site

Static simulator for practicing crane operation

Maneuvering skills for the real forwarder

Measurements and documentation are automatic

Understanding of work



Logging site

Focusing on learning job design skills

Measuring competence and giving feedback still depends on the teacher

As a tool Drone

Dokumentation for Workseed

Learning for work



On the job training

Developing the skills

Productivity 2/3 of a professional

Giving feedback: Guide, Workseed, on-site visit Display

Skills evaluation

Efficiency, Productivity

What has happened 1991 -> 2024

- > Less money (1991 33 846 € -> 2024 14 000 € / student year) 41 % and it is going down
- > Machine 1991 (engine, hydraulic pump, generator, valves) -> 2024 + computers, sensors, can, 1991 493 000 €, 2024 400 000 € 81 %
- > Teacher 1991 4 400 €, 2024 4 400 € 100 %

cost-effectively

What we do 2024

- > We use less money
- > We do training more cost-effectively
- > We have less – 10 % teachers - more automation
- > We have simulators, digital learning environments, on the job learning
- > We do it better than ever

Training is planned, executed and results are evaluated

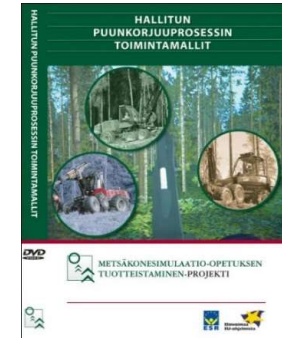
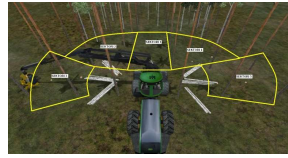
- > Goals
- > Planning the evaluation
- > Planning the path
- > Planning the training and studying
- > Training, teaching and studying
- > Feedback
- > Evaluation



Trainings to offer

- > Competence profiling and work model training for forest machine operators (for companies)
- > Consulting and expertise (for schools and trainers)
 - Organization and development of training
 - Work process / Teaching and Study process competence

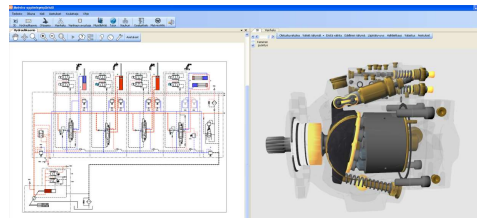
“Edu solution and Edu camp”



25.10.2024

References

- > Timber Skills seminars (international)
- > Working model (2 x thinning and 2 x clearcut) training for other forestry school's, supervisor's (mostly for foreign), professional operator's, contractor's
- > Partners (universities, research units, forest machine manufactures and dealers)
- > We have digitalized learning paths to automatize a feedback
- > Developed simulators and simulator learning environment (TimberSkills4 and Simtrainer)



- > Development services related to the establishment of an educational institution
- > Describing work and teaching processes
- > Designing inspiring and energy efficient learning environment
- > Curriculum design and updating
- > Competence based training and demonstration development
- > Teacher coaching, versatile teaching methods
- > Digitalization and online pedagogy inc. software, learning platforms, equipment
- > Simulator pedagogy and design of simulation exercises
- > Skills coaching and measurement
- > On the job training models, guaranty of the quality of teaching in working life
- > EduCamp for professionals and students

Digitization does not “automatically” improve training, but it will give good opportunity for that:

Properly utilized

digitization can give opportunity to arrange teaching better for learning issues:
faster, better, higher than before

“give more time to train and prepare”

Poorly utilized

digitization can take the attention away from the teaching and learning process, when technology “leads” the thinking of learning process

“makes a traffic jam in the band”

Digitization is a good tool but a bad host

Digitalized teaching and learning always requires a user interface - a learning environment

Learning environments

Online learning environments, virtual simulators, TV, videos, radio, machines, devices and their software

Study

Reading, doing, watching, listening, problem solving, exams, assignments, exercises

The preparation of digitalized teaching requires an in-depth knowledge of the author on the subject to be learned and the conditions for learning.

Learning environment 1.0

- > Bild up
 - Understanding of work
 - Common language, to teach
- > Make up

DEFINATIONS

Development process

Hallitun puunkorjuuprosessin käsitteet

- + 1. Puutavaran katkenta ja mittaus
- + 2. Hakkuukoneen hallinta-, ohjaus- ja mittausjärjestelmä
- + 3. Työmaatiedot
- + 4. Hakkuutapa
- + 5. Työmenetelmät
- 6. Työprosessin jäsenitys
 - [6.1. Työpiste](#)
 - [6.2. Työsektori](#)
 - [6.3. Etusektori](#)
 - [6.4. Sivusektori](#)
 - [6.5. Työskentelyalue](#)
 - [6.6. Katvealue](#)
 - [6.7. Ajoura](#)
 - [6.8. Hakkuu-ura](#)
 - [6.9. Katkontalinja](#)
 - [6.10. Hakkuurintama](#)
 - [6.11. Kaatopiste/-suunta](#)



Work model for harvester

- > Bild up understanding of teaching
- > Uniform the goals of learning

R&D , tested and measured models

Created a durable base for education

Working process

8. Kasvatshakkuu -työsektori... X +

simuba.pkky.fi/simuba/model/index.php?mid=421

METSÄKONEOPISKELU

Etusivu · Opetussuunnitelma · Käsitteet · **Toimintamallit** · Harjoitukset

Toimintamallit > 8. Kasvatshakkuu -työsektorimenetelmä harvennushakkuulla

Toimintamallit

- + [3. Siirtokuljetus](#)
- + [3 Koneellisen puunko](#)
- + [4. Työmaan aloitus, s](#)
- + [5. Poikittaishakkuutyö](#)
- + [6. Viuhkahakkuutyöm](#)
- + [7. Eteenpäin kaato -ty](#)
- [8. Kasvatshakkuu -t](#)
 - + [8. Työsektorimen](#)
 - + [8.2. Työsektorim](#)
 - + [8.3. Työpisteen v](#)
 - + [8.4. Ajouran hakl](#)
 - + [8.5. Oikea etusel](#)
 - + [8.6. Oikea sivuse](#)
 - + [8.7. Vasen etuse](#)
 - + [8.8. Vasen sivuse](#)
 - + [8.9. Siirtyminen t](#)
 - + [8.10. Hakkuutyör](#)

Harjoitukset

- + [AJOKONEOPETUS](#)
- + [Moduuli 1: Johdatus koneelliseen puunkorjukseen 1](#)
- + [Moduuli 2: Johdatus koneelliseen puunkorjukseen 2](#)
- + [Moduuli 3: Koneellisen puunkorjuun perusteet](#)
- + [Moduuli 4: Apteerauksen ohjauksen perusteet](#)
- + [TYÖSSÄOPPIMINEN](#)
- + [Moduuli 5: Siirtokuljetus](#)
- + [Moduuli 6: Huolto ja korjaus \(kesken\)](#)
- + [Moduuli 7: Elektronisten mittasaksien toiminta periaate](#)
- + [Moduuli 8: Mittalaitteen kalibrointi](#)
- + [Moduuli 9: Työmaan aloitus ja lopetus](#)
- + [Moduuli 10: Työmaan merkintä ja rajaukset](#)
- + [Moduuli 11: Varasto- ja varikkopaikan suunnittelu](#)
- + [Moduuli 12: Ajouraverkoston suunnittelu](#)
- + [Moduuli 13: Kasvatshakkuu -työsektorimenetelmä](#)
- + [Moduuli 14: Harvennusmallit](#)
- + [Moduuli 15: Päätehakkuun työmenetelmä](#)
- + [Moduuli 16: Puutavaran- ja hakkuujäljenlaatu \(kesken\)](#)
- + [Moduuli 17: Tiedonhallintaohjelmat \(kesken\)](#)
- + [Moduuli 18: Hydraulikkajärjestelmä \(kesken\)](#)
- + [Moduuli 19: Sähköjärjestelmä \(kesken\)](#)
- + [Moduuli 20: Hallinta-, ohjaus- ja mittausjärjestelmän a](#)
- + [Moduuli 21: Kalibrointi \(kesken\)](#)
- + [Moduuli 22: Vianetsintä ja yleiskunnostus \(kesken\)](#)
- + [Moduuli testi: testikäyttöön](#)



2008 - present

Learning environments 2.0

- > Theory
- > Model/Reference video
- > Scoring
 - Rising growth targets
 - Aim to get more in less time
- > Reports
- > Automatization

=> reducing the need for the teacher's immediate presence "give time for feedback and train the skills"

Development proces of teaching anf studying

- B1 Handling logs
- B2 Handling the bundles
- B3 Loading
- B4 Unloading a load
- C1 Felling a small tree
- C2 Sector work model
 - The work order
 - Stopping in a working area I
 - Stopping in a working area II
 - Unnumbered trees
 - Two species
 - Three species
- C3 Side felling work model (thinning)
- C4 Intermediate felling
- D1 Felling a big tree
- D2 Side felling work model (regeneration)
- D3 Forward felling work model
- D4 Regeneration harvesting

Operator - The work order

TimberSkills
Forest Machine Operator

Description Feedback Attachments Scoring

Material

JOHN DEERE

THE WORK ORDER

Background of the task
The sector work model is the basic work model used in thinning. It is best suited for first thinning and for sites with multitudinous, evenly spaced trees. The aim in this exercise is to learn the controlled and systematic work order in the working area according to the sector work model.

Task description (steps):

- Familiarise yourself with the theoretical part and reference execution, pay careful attention at all times.
 - the removal order of the trees,
 - the felling direction, and
 - the stack locations.
- Familiarise yourself with the training area in flight mode (Tab).
- Fell and process the trees in the working area in the numbered order.
 - One working area has already been completed as an example.
- Finish by showing the points (F5) and saving the image (F7).

Task target limits


- Distance covered by the boom: under 120 m
- Boom control: over 0.70
- Simultaneous boom movements: over 2.0
- Stack quality: over 0.85
- Number of trunks: 10

TOTAL AMOUNT OF POINTS: 5

Links to material:

- Sector work model
- The work order
- Neatness

[Video: The work order](#)




SimTrainer
Timber Truck Driver

Simulaattoriharjoitusraportti

04.04.2018
11:55:05

Tulos: Hyväksytyt

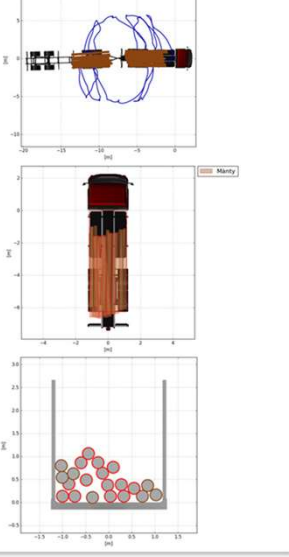
	Arvo	Pisteet
Ehtitykset		
Puonin kilometria	183.3m	100
Kokonaispisteet		100

Laiteraportti

Alku	
Kokonaisharjoitus	248
Alkuvaiheen harjoitus	244
Tuonoksa	004
Ompien kienojen välein	019
Hajotus	
Tuonoksa	0
Ehtitykset	
Puonin kilometria	183.3m
Suorituskykyä tilasto	
Tuonoksa	0.2%
Kokonaisharjoitus	2.2%
Kokonaisharjoitus	9.2%
Alkuvaiheen harjoitus	41.3%
5-tilasto	07.3%

Lastausraportti

Hajotus	
Puonin kilometria	36
Vuonoksa	0kg
Puonin kilometria	0kg
Puonin kilometria	0kg
Vuonoksa	29
Vuonoksa	1.1m



Joensuu // Kitee // Lieksa // Nurmes // Outo

Learning process vs. work process

What is needed
What is the target
What to develop
How to develop
Develop the skills

Understanding "work planning - cycle"
Energy efficiency - productivity
Integrity "of the work performance"
Automation "backbone"
Applying expertise

theory – task – practice program – analyzation – feedback

aim - practice – videoing – report – self evaluation - understanding

The skills required at work require a lot of hours in the right circumstances
The better the bases are created in the beginning, the better will be expectation for the development

Utilizing information

> Reports/data

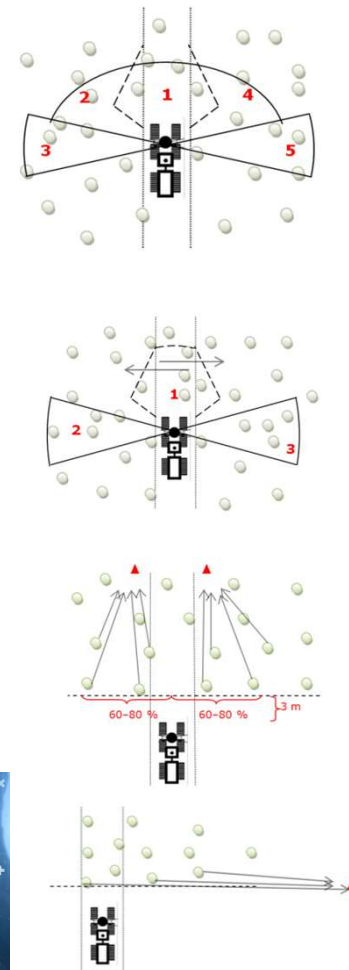
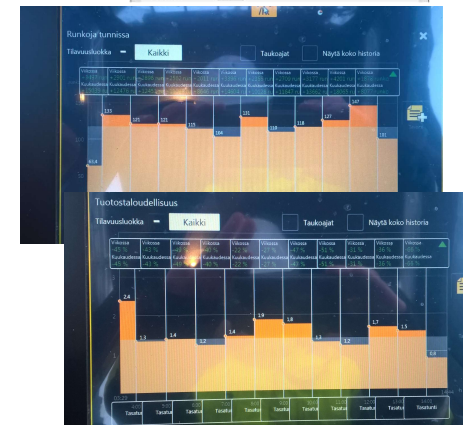
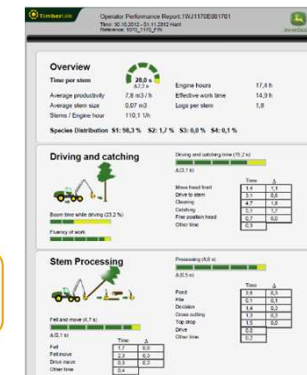
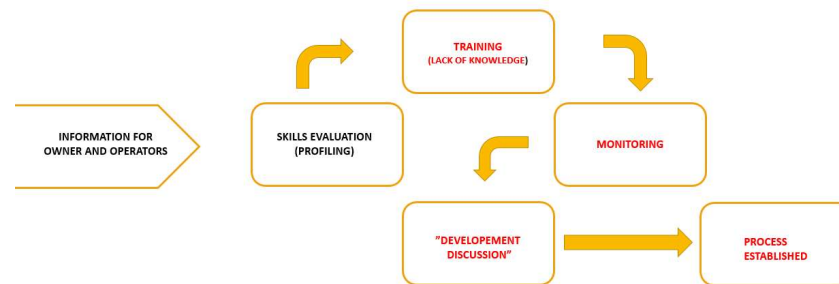
- Production
- Efficiency
- Fleet
- Machine reports

> Videos

- Of working

> Enables profiling and work model training

CONTINUOUS DEVELOPING PROCESS





Mobilisation

- > Ohjuri for Distant guidance
- > Workseed for
Collecting the material for skills evaluation

The screenshot shows the Workseed application interface. At the top, there are navigation tabs: 'Tapahtumat', 'Tutkinnon osat', and 'Taidot'. Below this is a search bar and filters for 'Kaikki tilat', 'Kaikki tutkinnon osat', 'Kaikki tyypit', and 'Kaikki opettajat'. The main area displays a grid of employee profiles, each with a name, a date (e.g., '7 Jouluku (Perjantai) 18:00'), and a 'Raportti' button. A summary card in the foreground shows '5. Näyttö materiaalin keruu' and 'Katetut arviointikohteet' with a circular progress indicator showing 12 out of 16 items.

Kuva- ja äänyhteys



- Tallennus kuvaavaan kännykkään
- Itsearvioinnin tueksi
 - Kerätään aineistoa ennalta määriteltäviin tehtäviin
 - Työprosessin ohjauksen tilanteissa, joissa etäyhteys ei ole mahdollinen

Väliaikainen tallennus

- Ohjauksen kohdennus
- Ohjauksen tarpeen määrittelyn tuki

Reaaliaikainen kuva

- Ohjaus
- Arvioinnin perusteet



Suoritetietojen tallennus Workseed (Amov. tietokanta)

- Editoitu, jäsennetty ja järjestetty aineisto
- Opiskelun tavoitteiden seuranta
- Arviointiaineiston dokumentointi

The screenshot shows a YouTube video player. The video title is '1. Hakkuun suoritus'. The video content shows a forest scene with a machine operating. The player interface includes a search bar, a play button, and a progress bar.

Reorganization of forwarder training

1	2	3	4	5	6	7	8	9	10		11
FBE	FBE	FBE	FBE	FBE	2-sift work / on the job training					Material	Evaluation

Static simulators are not just devices



Automation of teaching,
helped by reports

➔ More time to do guidance and
feedback

They are a well-designed entity as part of a managed teaching process.



Measured and proofed skills "on the school yard"

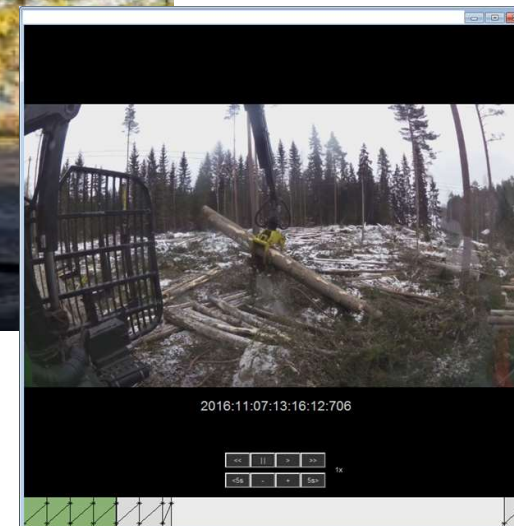
Planning
Measuring
Reports
Feedback



Move empty
Pick logs from ground
Move logs to load
Position logs

Time	Δ
5,3	0,6
1,8	-1,9
7,1	1,3
2,3	-1,0

Controlled loading cycles



Time	Δ
2016.11.07.16.26.209	14.819000
2016.11.07.11.14.07.740	14.025000
2016.11.07.14.30.57.543	14.060000
2016.11.07.20.45.26.261	14.090000
2016.11.07.14.15.41.507	14.120000
2016.11.07.15.03.26.814	14.150000
2016.11.08.04.47.41.653	14.180000
2016.11.08.05.16.02.928	14.210000
2016.11.07.14.52.20.768	14.240000
2016.11.07.15.02.02.028	14.270000
2016.11.07.09.59.37.609	14.300000
2016.11.07.13.34.09.862	14.330000
2016.11.07.11.22.26.613	14.360000
2016.11.07.10.18.00.862	14.390000
2016.11.07.14.14.56.601	14.420000
2016.11.07.12.53.20.716	14.450000
2016.11.08.05.22.26.694	14.480000
2016.11.08.04.53.40.848	14.510000
2016.11.07.15.21.42.291	14.540000
2016.11.07.14.33.16.115	14.570000
2016.11.07.11.11.14.855	14.600000
2016.11.07.09.52.21.106	14.630000
2016.11.07.14.16.07.025	14.660000
2016.11.07.16.18.14.113	14.690000

Loading cycle

"Operating" (1. move empty) and (2. pick up the logs from ground)

Addressing



Mapping



Targeting



Routing

"Operating" (3. Move logs to load) and (4. Position logs)



Routing



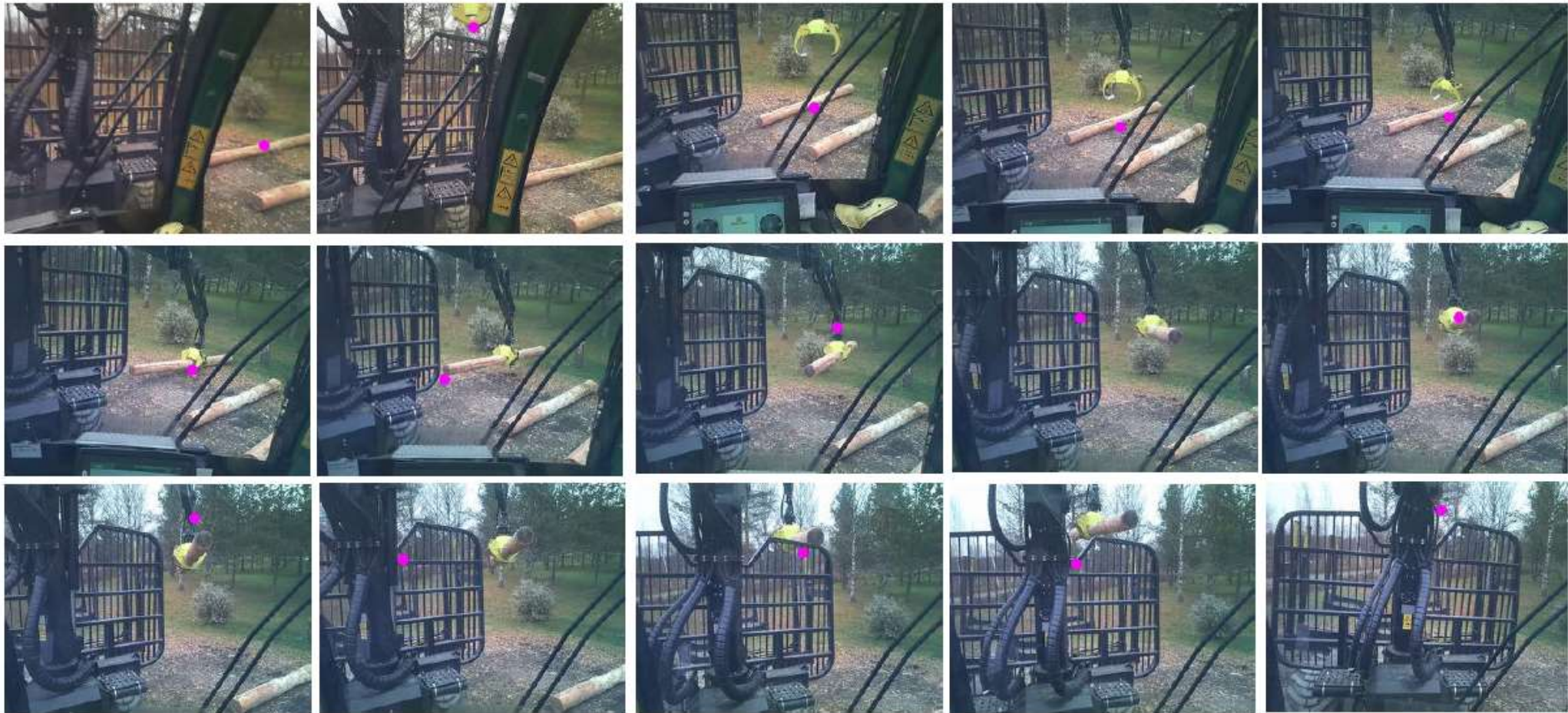
Targeting

Move empty
Pick logs from ground
Move logs to load
Position logs

	Time	Δ
Move empty	5,3	0,6
Pick logs from ground	1,8	-1,9
Move logs to load	7,1	1,3
Position logs	2,3	-1,0

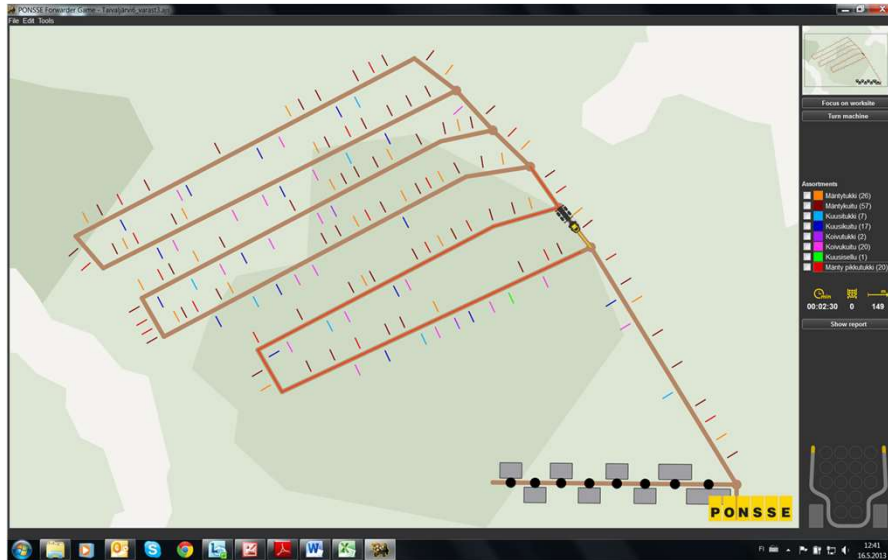
RIVERIA

Measured loading cycle “eye tracking”

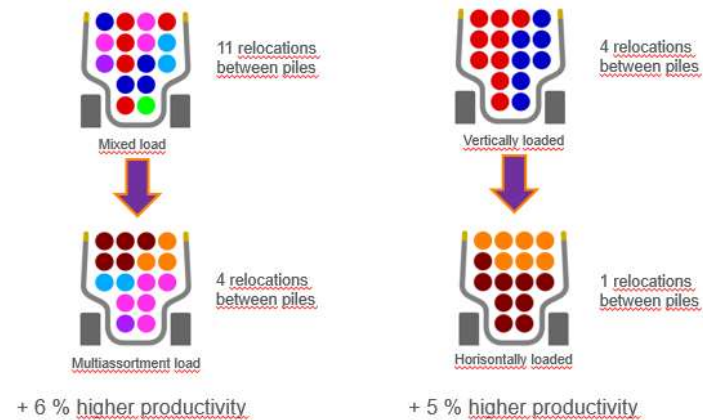




Planning, load gathering, management of storage "on the logging site"



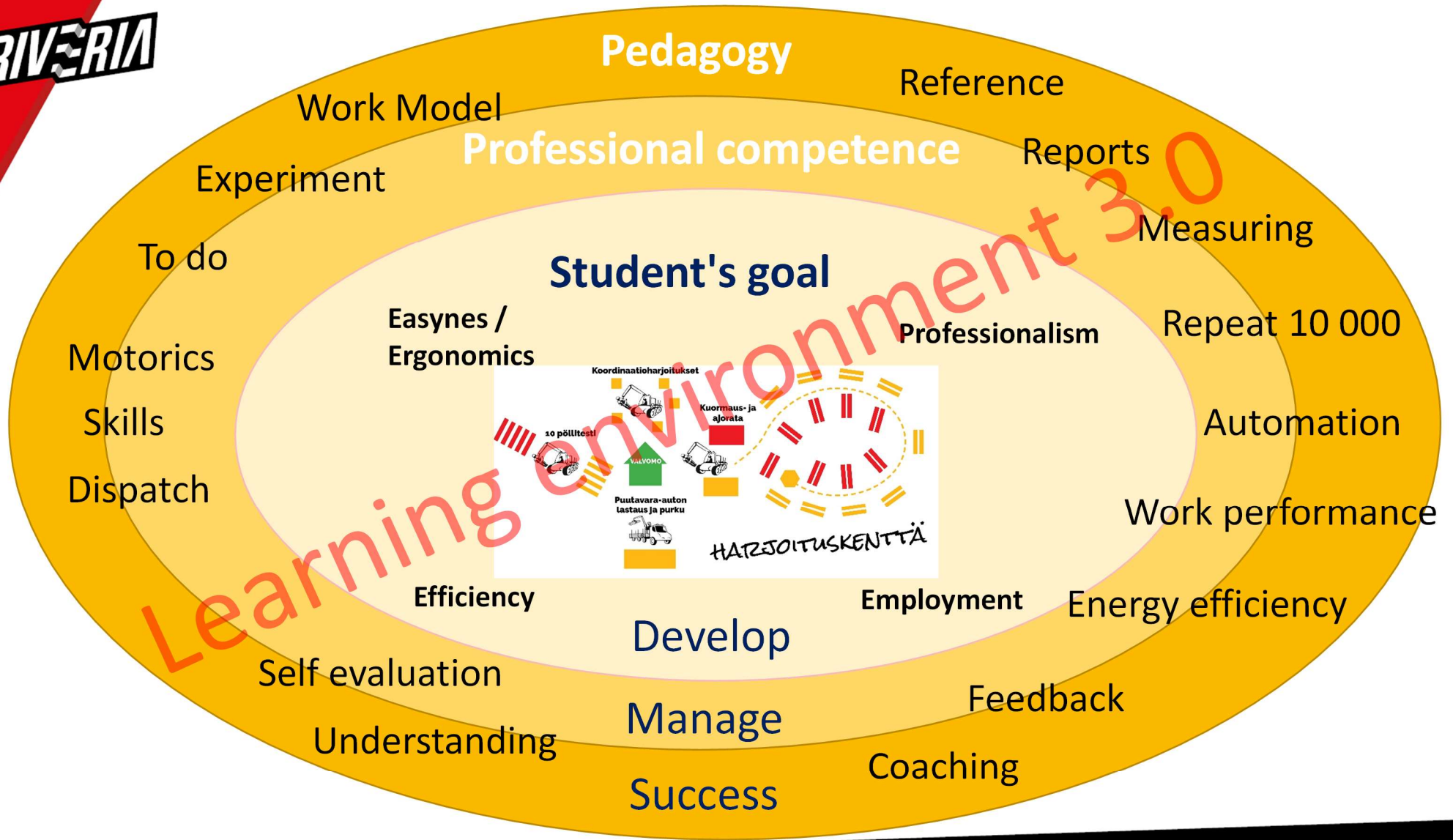
Results

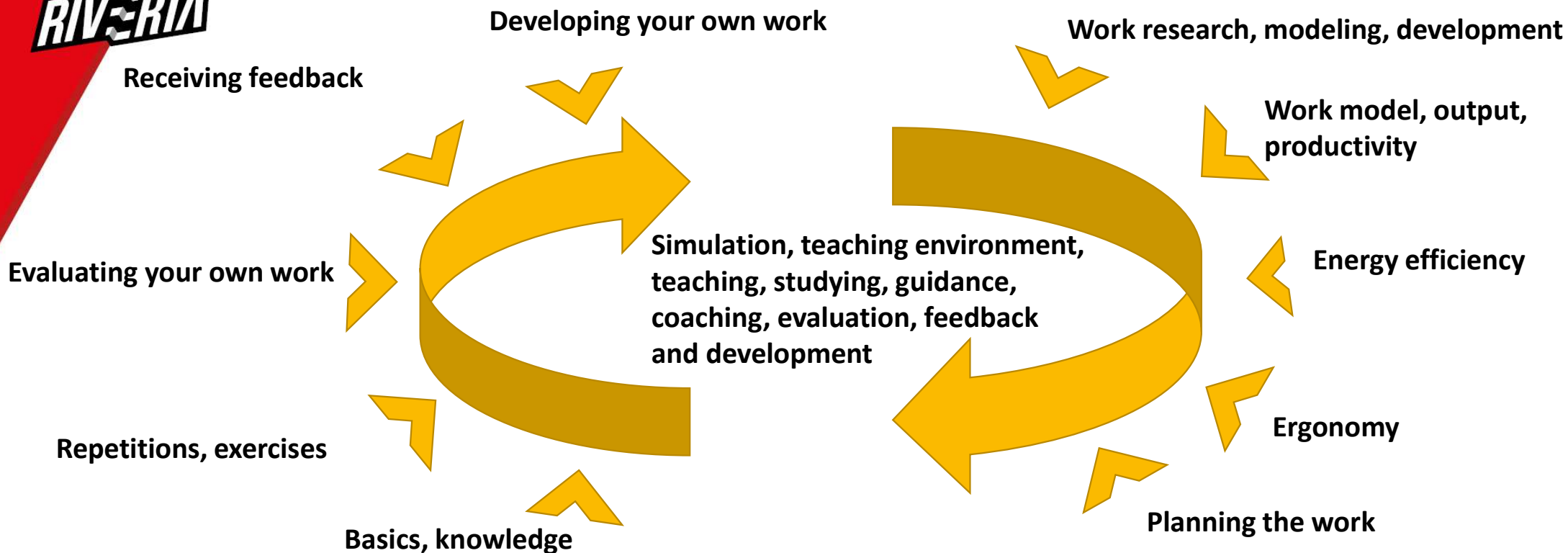


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Professional competence





Knowledge of the

Learning process

understanding and developing

Work process

understanding and developing

A close-up photograph of a boat's side. A white sign with black text is mounted on a dark grey or black hull. The text on the sign reads "Training Makes Dreams Come True". A blue rope with yellow diagonal stripes is draped over the left side of the sign. The background shows the water of the Yukon River.

**Training Makes
Dreams Come True**

2028 Yukon territory, Yukon River



Sleep well - learn more!

We do – we develop training

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Thank you for your attention

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