



# Using an E-portfolio With Learning Analytics: The Perceptions of Teachers

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Promising Pedagogies in International Teacher Education

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# Introduction

## The importance of feedback

## The use of e-portfolios (Van der Schaaf, Stokking & Verloop, 2008; Bok et al., 2012)

## Benefits of e-portfolios

- Powerful tool for capturing student learning (Butler, 2006)
- Provides a seamless and holistic review process (Wray, 2007)
- The possibility to work in different environments (Wray, 2007)



## However...

### Challenges of the e-portfolios

- Implementation may be a complex process (Granberg, 2010)
- Need for the digital technology skills (Wray, 2007)
- Students need to be instructed and supported in the implementation of new technology (Woodward & Nanlohy, 2004)

### Learning analytics



# Context of this study

Republic of Estonia

Member of  
European Union

Fusion of Northern  
European and  
Eastern European  
cultures





## The context of the study

- The WatchMe project:  
<https://www.project-watchme.eu/>
- EPASS (*Electronic Portfolio and Assessment Support System*):  
<http://www.epass.eu/en/>



# The bases for the e-portfolio system

Professional roles	Tasks	Level 0	Level 1	Level 2	Level 3	Level 4	
Designer, supervisor and evaluator of learning activities (subject knowledge and supervisor of the learning process)	1. Sets learning goals for the lessons and knows the learning goals of the curriculum	The teacher does not set the learning goals for the lesson. He/she does not know the learning goals of the curriculum. He/she does not take into account the differences between students.	The teacher takes on the learning goals for the lesson from others and checks them. He/she does not take into account the differences between students.	The teacher takes on the learning goals for the lesson from others and checks them. He/she does not take into account the differences between students.	Formulates the learning goals for the lesson that are in accordance with the curriculum goals. He/she regards the differences between students.	Formulates the learning goals for the lesson that are in accordance with the curriculum goals. He/she regards the differences between students.	
	2. Chooses or designs appropriate learning materials and methods according to the learning goals	The teacher chooses learning materials and methods developed by others and does not take into account the learning goals for the lesson.	The teacher chooses learning materials and methods developed by others. He/she does not take into account the learning goals for the lesson.	The teacher chooses learning materials and methods developed by others and checks them. He/she does not take into account the learning goals for the lesson.	The teacher chooses learning materials and methods developed by others and checks them. He/she does not take into account the learning goals for the lesson.	The teacher chooses learning materials and methods developed by others, adapts them and checks them. He/she does not take into account the learning goals for the lesson.	The teacher chooses learning materials and methods developed by others, adapts them and checks them. He/she does not take into account the learning goals for the lesson.
	3. Plans the execution of learning activities	The teacher does not plan the lesson. He/she does not take into account the learning goals for the lesson.	The teacher plans a lesson that is not clearly structured. He/she does not take into account the learning goals for the lesson.	The teacher plans a lesson that is not clearly structured. He/she does not take into account the learning goals for the lesson.	The teacher plans a lesson that is not clearly structured. He/she does not take into account the learning goals for the lesson.	The teacher plans a lesson that is clearly structured. He/she does not take into account the learning goals for the lesson.	The teacher plans a lesson that is clearly structured. He/she does not take into account the learning goals for the lesson.
	4. Carries out the learning activities	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.	The teacher carries out the learning activities. He/she does not take into account the learning goals for the lesson.
	5. Evaluates the pupils' accomplishment of the learning goals and gives them feedback	The teacher does not evaluate the pupils' accomplishment of the learning goals and does not give them feedback.	The teacher evaluates the pupils' accomplishment of the learning goals and does not give them feedback.	The teacher evaluates the pupils' accomplishment of the learning goals and does not give them feedback.	The teacher evaluates the pupils' accomplishment of the learning goals and does not give them feedback.	The teacher evaluates the pupils' accomplishment of the learning goals and does not give them feedback.	The teacher evaluates the pupils' accomplishment of the learning goals and does not give them feedback.
Designer of the learning environment	6. Is interested in pupils as individuals and as a group, builds a supportive relationship	The teacher does not show any interest in his/her pupils as individuals and as a group. He/she does not build a supportive relationship.	The teacher shows little interest in his/her pupils as individuals and as a group. He/she does not build a supportive relationship.	The teacher shows little interest in his/her pupils as individuals and as a group. He/she does not build a supportive relationship.	The teacher shows interest in his/her pupils as individuals and as a group. He/she does not build a supportive relationship.	The teacher shows interest in his/her pupils as individuals and as a group. He/she does not build a supportive relationship.	
	7. Directs the communication processes in the group	The teacher does not direct the communication processes in the group.	The teacher directs the communication processes in the group.	The teacher directs the communication processes in the group.	The teacher directs the communication processes in the group.	The teacher directs the communication processes in the group.	
Supporter of the child's development	8. Supports the development of the pupils as persons	The teacher does not support the development of the pupils as persons.	The teacher supports the development of the pupils as persons.	The teacher supports the development of the pupils as persons.	The teacher supports the development of the pupils as persons.	The teacher supports the development of the pupils as persons.	
	9. Carries out tasks beyond the lesson and the subject	The teacher does not carry out tasks beyond the lesson and the subject.	The teacher carries out tasks beyond the lesson and the subject.	The teacher carries out tasks beyond the lesson and the subject.	The teacher carries out tasks beyond the lesson and the subject.	The teacher carries out tasks beyond the lesson and the subject.	
Member of the professional community	10. Collaborates with colleagues (including support specialists) and parents	The teacher does not collaborate with colleagues and parents.	The teacher collaborates with colleagues and parents.	The teacher collaborates with colleagues and parents.	The teacher collaborates with colleagues and parents.	The teacher collaborates with colleagues and parents.	
	11. Analyses and improves his/her professional activities and knowledge	The teacher does not analyse and improve his/her professional activities and knowledge.	The teacher analyses and improves his/her professional activities and knowledge.	The teacher analyses and improves his/her professional activities and knowledge.	The teacher analyses and improves his/her professional activities and knowledge.	The teacher analyses and improves his/her professional activities and knowledge.	
Manager of own professional development	12. Carries out research on teaching and learning	The teacher does not carry out research on teaching and learning.	The teacher carries out research on teaching and learning.	The teacher carries out research on teaching and learning.	The teacher carries out research on teaching and learning.	The teacher carries out research on teaching and learning.	



# The automated feedback module

### Kasutaja andmed

Ühtegi fotot pole saadaval

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Eriala: UT Teacher education  
Meiliaadress: pihel.hunt@ut.ee  
Telefoninumber:  
Kõik manused: 0MB / 50MB

Muuda informatsiooni

### Minu rollid

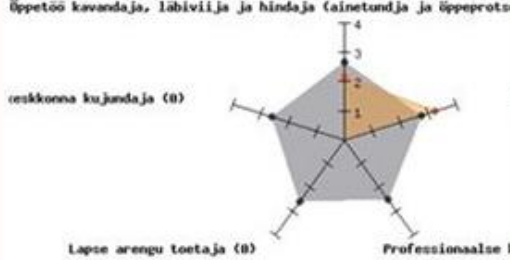
Aasta: 1  
Semester: 1

Õppetöö kavandaja, läbiviija ja hindaja (ainetundja ja õppeprotsessi juht)

Õppematerjalide koostaja (0)

Lapse arengu toetaja (0)

Professionaalse kollektiivi liige (0)



veel

### Just In Time feedback

<< Tagasi

#### Valib või töötab välja sobivad õppematerjalid ning -meetodid lähtuvalt õppe-eesmärkidest

Selle tegevuse juures on veel arenguruumi. Oma tulemuse parandamiseks peaksid sa saavutama selle tegevuse järgmise taseme.

Sa oled tasemel 0 (ebapiisav) tegevuses valid välja õppematerjalid ja -meetodid, mis on kooskõlas tunni õppe-eesmärkidega ja õpilaste eripäradega. Järgmise taseme saavutamiseks peaksid sa: "Kui sa valid eelnevalt teiste poolt väljatöötatud õppematerjalid ja -meetodid kontrolli, et need oleksid kooskõlas tunni õppe-eesmärkidega. Sinu valitud materjalid ja meetodid olid ühekülgsed ja suunatud klassile kui tervikule."



# The visualisation module

TOOLID

SISETTA

STATISTIKA


PROFIL

MENU EPASS

EPASS

Kasutaja Hiljutised muutused

Kasutaja



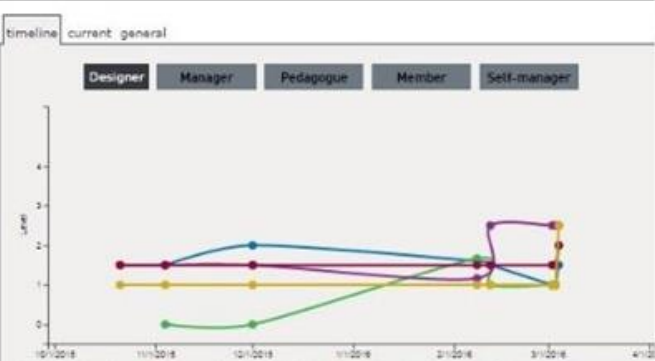
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 Opetajakoostis: UT Opetajakoostis  
 Meil: demo@ut.ee  
 Telefoninumber: -  
 Keskmine: 0.01MB / 50MB

EPASS

**Visualizations**

Timeline: current general

Designer
Manager
Pedagogue
Member
Self-manager



Task	Indicator
Task 1. Püstitab õppe-eesmärgid ainetundidele ning teab ainekava õppe-eesmärgidest	Vaata 2 Tegevuse indikaatorid
Task 2. Valib või töötab välja sobivad õppematerjalid ning -meetodid lähtuvalt õppe-eesmärgidest	Vaata 1 Tegevuse indikaatorid
Task 3. Planeerib õppetöö läbiviimist	Vaata 2 Tegevuse indikaatorid
Task 4. Viib läbi õppetöö	Vaata 2 Tegevuse indikaatorid
Task 5. Hindeb õppe-eesmärgide saavutamist ning annab õpilastele tagasisidet	Vaata 2 Tegevuse indikaatorid

**Just in Time feedback**

Hindeb õppe-eesmärgide saavutamist ning annab õpilastele tagasisidet

Kõik selle tegevuse näitajad on hinnatud piisavaks (aste 2). Oma tulemuse parandamiseks peaksid sa saavutama selle tegevuse järgmise taseme.

Saavutus edaspidiseks

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Sinu juhendaja isegi tegevuste sulle tegevuse kohta.

Juhendaja tagasiside

---

Valib või töötab välja sobivad õppematerjalid ning -meetodid lähtuvalt õppe-eesmärgidest

Kõik selle tegevuse näitajad on hinnatud piisavaks (aste 2). Oma tulemuse parandamiseks peaksid sa saavutama selle tegevuse järgmise taseme.

Saavutus edaspidiseks

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Hiljutised muutused

Hiljutised muutused puuduvad





## The aim of the study

The aim of this study is to explore the perceptions of teachers who used the e-portfolio that is enriched with learning analytics applications.



## Method

- 7 pre-service and 13 in-service teachers
- Age between 22 and 58 years ( $M=38.8$ ,  $SD=9.7$ )
- Only one participant has prior experiences with e-portfolios
- Questionnaire on 5-point Likert scale (adapted from Venkatesh, Morris, Davis & Davis, 2003):
  - **Job-fit** (the extent to which an individual believes that using a technology can enhance the performance of his or her job)
  - **Complexity** (the degree to which a system is perceived as relatively difficult to understand and use)
- Focus group interviews



# Teachers' perceptions about the e-portfolio

Job-fit ( $M=3.9$ ,  $N=15$ ,  $SD=0.6$ )

- The evaluations are rather positive
- Good overview of the criteria

Complexity ( $M=3.7$ ,  $N=20$ ,  $SD=0.9$ )

- Modern, user-friendly and comprehensible
- Decrease in paper
- Feedback in one system
- Some suggestions about the design
- Implementation of the e-portfolio





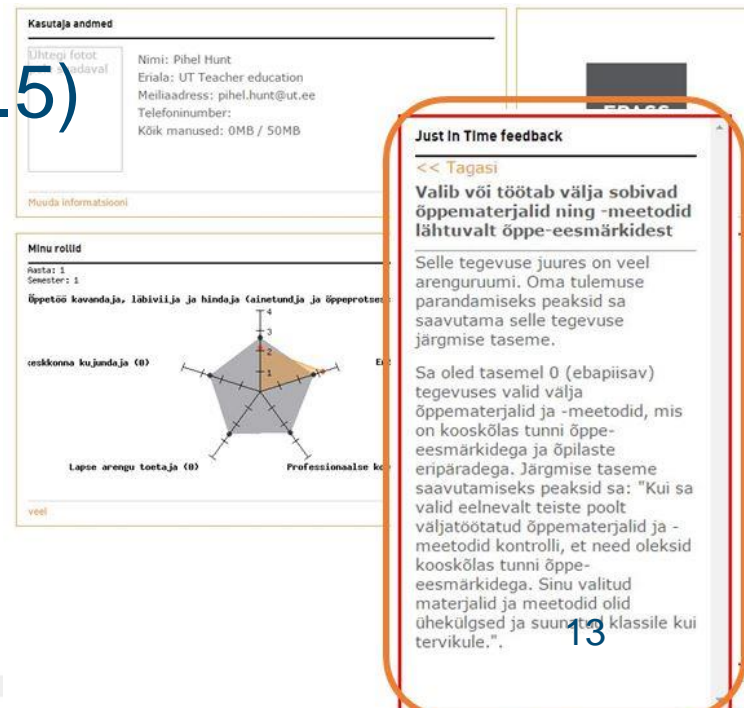
# Teachers' perceptions about the automated feedback module

Job-fit (M=4.0, N=17, SD=0.6)

- Supports the development of the professional activities

Complexity (M=3.8, N= 17, SD=0.5)

- Perceptions were contradictory



**Kasutaja andmed**

Ühtegi fotot ei ole üles laetud

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Kõik manused: 0MB / 50MB

[Muuda informatsiooni](#)

**Minu rollid**

Rastal: 1  
Semester: 1

Õpetöö kovandaja, läbiviija ja hindaja (ainetundja ja õppeprotsessi juhendaja) (0)

Õppematerjalide koostaja (0)

Lapse arengu toetaja (0)

Professionaalne kolleeg (0)

veel

**Just In Time feedback**

[<< Tagasi](#)

**Valib või töötab välja sobivad õppematerjalid ning -meetodid lähtuvalt õppe-eesmärkidest**

Selle tegevuse juures on veel arenguruumi. Oma tulemuse parandamiseks peaksid sa saavutama selle tegevuse järgmise taseme.

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13



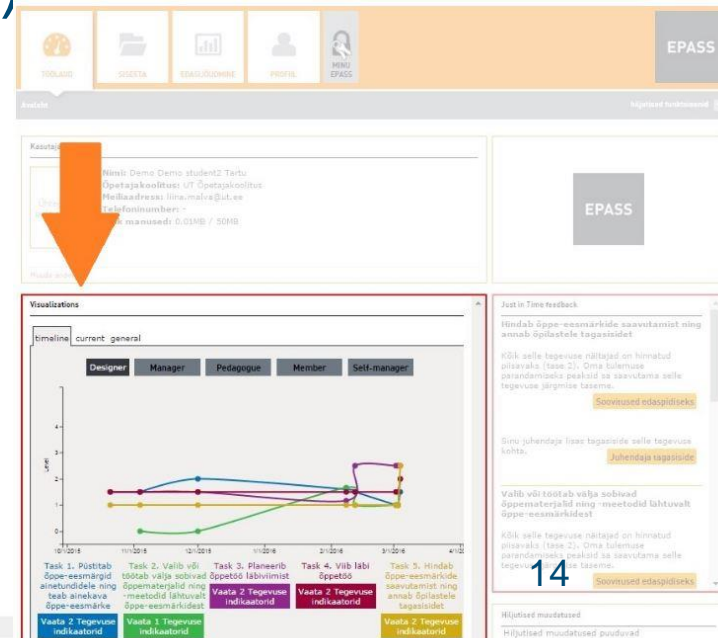
# Teachers' perceptions about the visualisation module

Job-fit ( $M=3.9$ ,  $N=17$ ,  $SD=0.7$ )

- Supports the development of the professional activities

Complexity ( $M=4.0$ ,  $N=17$ ,  $SD=0.6$ )

- Scores should be visualised per subject
- Some components were difficult to understand





## To conclude

- The e-portfolio enriched with learning analytics supports teachers' professional development
- The e-portfolio system was easy to use
- Implementation is a complex process



# Thank you!

## Questions, comments?

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<http://www.project-watchme.eu/>





# References

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