



Digitalizing social practices

The 15th Nordic conference on basic literacy for adult immigrants.

Louise Tranekjær
Roskilde University
Louiset@ruc.dk



Digital language
learning games
can form a bridge
between language
teaching and
workplaces

Overview of presentation:

A bit of context – who am I and why did I end up as a language game developer?

The theoretical starting point – what do we know that tells us this might work?

The empirical foundation – what did I want to put in the game, and why?

Presentation of the game

Effect monitoring – method and results

Who am I and how did I end up as a game developer?

I have a cultural rather than a linguistic approach to language and language learning



I have carried out interactional research on second language learning and speaking contexts for 20 years



My overall research interest and motivation are processes of inclusion, exclusion and marginalization



I have always carried out research in collaboration with practitioners and external partners (language schools, companies, ministries, interest organisations)



I used to be a gamer myself and learned my basic English through playing adventure games

The theoretical
starting point
– what do we
know that tells
us this might
work?

A sociocultural point of departure in learning as motivated, situated and practice-oriented (Vygotsky, 1978; Van Lier, 2000; Wagner, 1996,2018; Gardner and Wagner, 2004)

An interaction approach to SLA (Firth & Wagner, 1997; Wagner, 1996; Gardner & Wagner, 2004) – A starting point in authentic interactions

Affordance og investment (Van Lier 2000)

Language learning and the physical materiality (Kraft 2019, Svennevig 2017, Ratia 2019, Tranekjær 2020)

Language learning 'in the wild' (Wagner, 2018; Eskildsen, 2018)

Language learning at work does not happen by itself – it requires language use, interaction and scaffolding (Strömmer 2016, Suni & Tammelin-Laine, 2020, Bramm & Kirilova 2019, Bramm 2020)

Three myths:

1. Migrants learn language automatically through employment
 2. Manual labor jobs require and involve no language at all
 3. Language teaching classes IN the workplace are better or different than at the language school
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Knowledge about motivation that motivated me

- Motivation for language learning increases when Professional training is combined with language training (Strömmer, 2017)
- Recognition is a prerequisite for motivation (Söderlundh & Keevallik 2022, Kraft 2019)
- The opportunity for translanguaging increases motivation
- Language learning has to make sense as part of life trajectory and situation (Pedersen 2021, 2022)

What do we know about Computer Assisted Language Learning (CALL)?

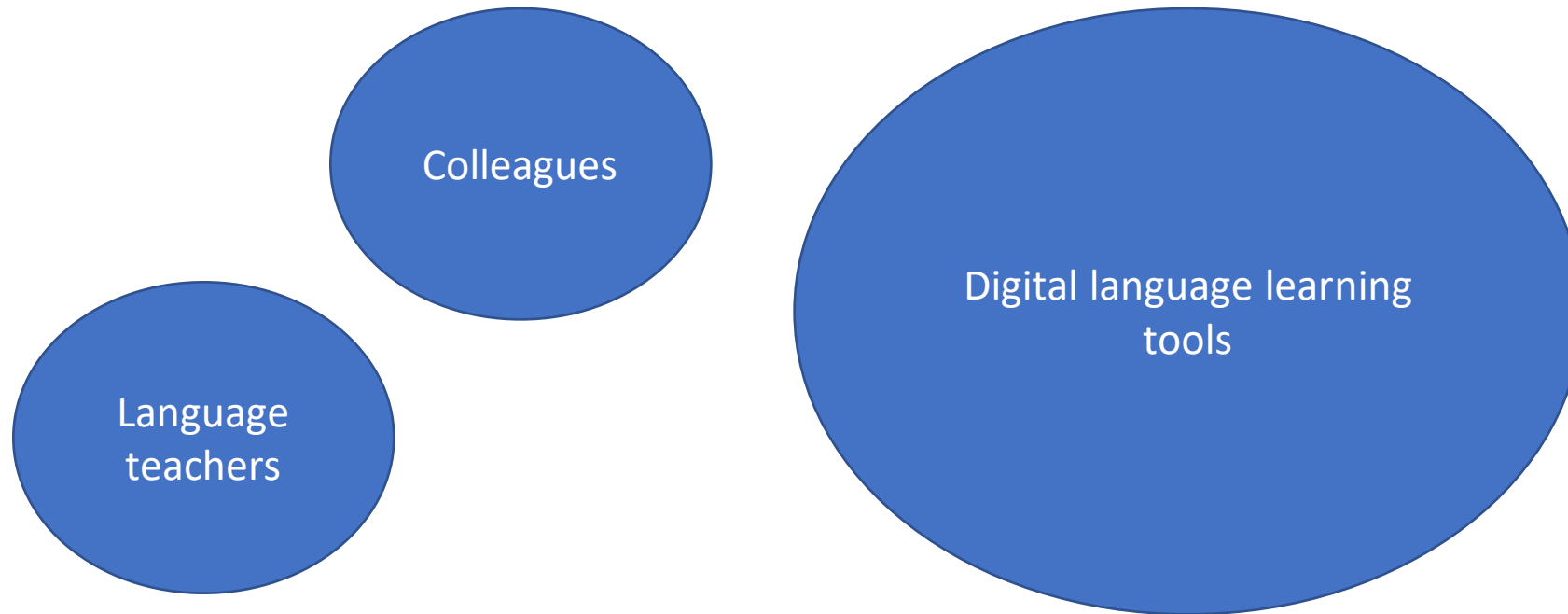
Digital language resources work because they secure motivation and investment, they are problem oriented, flexible and contextually relevant for the user (Garrett, 2009; Levy, 2009)

Available games for language learning: Croquelandia (Sykes, Oskoz, Thorne, 2008), ZON (Lai, Ni, & Zhao, 2013) → not workplace oriented!

Available learning platforms for health care, cleaning etc. → Not gamebased, not language learning oriented, not aimed at beginners or learners with little schooling.

Lehtimaja, Virtanen og Suni (2021)

The potential of the authentic language learning environment (the workplace) can only be fulfilled in combination with planned language activities and support.



Different language learners are motivated differently

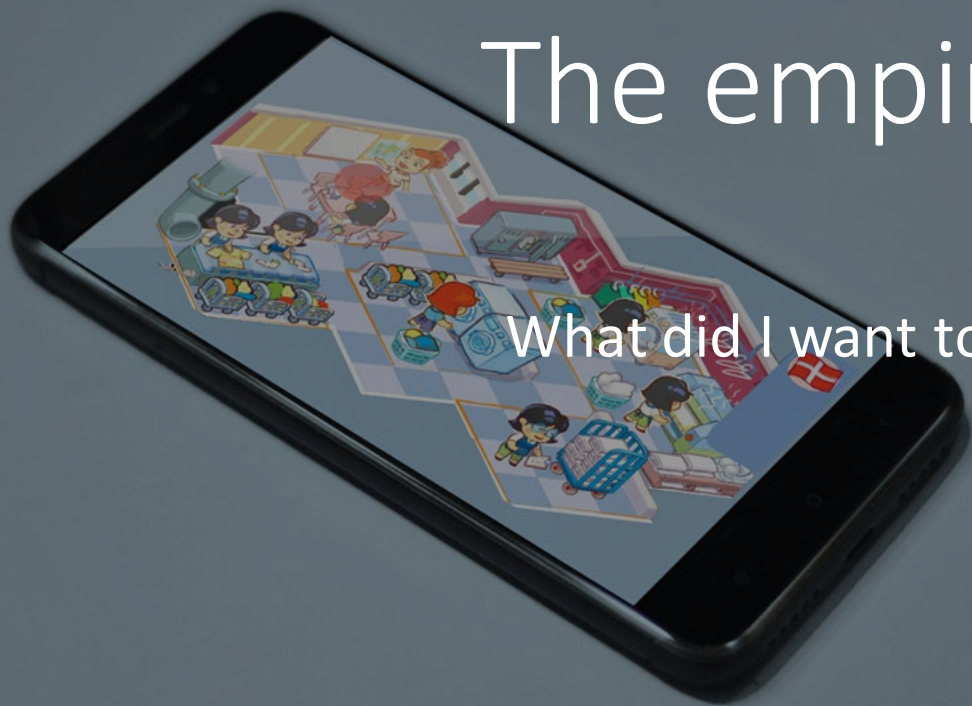
- Level of schooling and literacy
- Work situation and life situation
- Psychological and emotional barriers
- Learning styles and preferences (some prefer books, some prefer exercises, some are creative, some are digitally interested and/or adept)

A digital learning game is useful for some – as a starting point, a supplement or an alternative to ordinary language teaching



The empirical foundation

What did I want to put into the game, and why?



What is 'spild' (waste)? –

90 i må meget meget gerne komme med nogle gode ideer eller
91 forslag til (.) hvad vi sku gøre og hvad vi ku rykke
92 og også (.) kommer spild måske også lidt ind

((TL looks to agenda and points to word))

94 EM1: hva (?? ??)

95 PPP: (0.6)

96 TL: spild det er hvis du gør noget der ikke er nødvendigt

97 PPP: (0.9)

98 TL: hvis du for eksempel skal have en pose m- med strømper

((TL points in front of herself))

99

100 PPP: (0.4)

101 TL: så du hele tiden skal flytte de der vogne der står [foran]

((TL makes moving motion))

102

103 EM2: [åh ja]

104 TL: i [stedet] for at du bare kunne gå hen og tage [dem]

105 EM2: [ja] [meget godt]

106 TL: altså det (.) det er så nogen [s- småting]

107 EM2: [ja xxx]



It's these small [things]
[ja xxx]

90 i må meget meget gerne komme med nogle gode ideer eller
91 forslag til (.) hvad vi sku gøre og hvad vi ku rykke
92 og også (.) kommer spild måske også lidt ind

Invitation for participants to come up with ideas for 'waste reduction'.

93 ((TL looks to agenda and points to word))

94 You are very very welcome to come up with good ideas or
95 Proposals of what we should do and what we should move
96 And also waste comes in here

EM1 shows a lack of understanding

97 EM1: hva (?? ??)

98 PPP: (0.6)

99 TL: spild det er hvis du gør noget der ikke er nødvendigt
waste is when you do something that is not necessary

100 PPP: (0.9)

101 TL: hvis du for eksempel skal have en pose m- med strømper
If you for example need a bag of stockings

((TL points in front of herself))

TL interprets the word 'spild' to be the problem source and provides word explanation followed by exemplification

102 PPP: (0.4)

103 TL: så du hele tiden skal flytte de der vogne der står [foran]
so you constantly have to move the trolleys standing in front

((TL makes moving motion))

EM2 shows understanding

104

105 EM2: [åh ja]

106 TL: i [stedet] for at du bare kunne gå hen og tage [dem]
in stead of you just going to take them

107 EM2: [ja]

[meget godt]
very good

Evaluation showing understanding and support

108 TL: altså det (.) det er så nogen [s- småting]
it is small things

109 EM2: [ja xxx]

What is the point of this example?

The team meeting is a situation where language problems appear and a potential for language learning arises

Word explanation is not enough, there is a need for gesture, exemplification and visual stimuli

Work place knowledge is a platform and resource for language learning. SPILD
---concrete example of work situation

Language learning is fundamentally situated and embedded in social practice

Language learning for migrants in the workplace requires learning words in close relation to workplace culture

Creating an immersive, digital environment from a physical reality

So what aspects of this reality did I try to get in the game?

5 different aspects of workplace language/culture

- Signs and instructions
- Locations and work stations
- Actions and workplace tasks
- Incidents and problems
- Workplace culture and norms



Signs, objects and instructions



Locations and work stations



Actions and work tasks



Episodes and problems





Presentation of the game



WORK/D PLAYS



From research at work to game development





Status and content

A mobile based game targeting different industries

Two prototypes, one for laundry and one for cleaning.

Funding from NCFE og Styrelsen for Integration og International Rekruttering (SIRI)


Immersive map-based with work stations and work functions

Language learning is integrated with concrete workplace tasks and situations, familiar to user

Minigames with an emphasis on vocabulary (nouns, verbs, prepositions), instructions and simple speech acts and repetitions

Audio og visual supplemented by writing

Translations and repetitions



DEMO: <https://workdplays.dk/demo/>

Laundry game MAP VIEW



Map view – cleaning game.

General point of departure - the cafeteria and the team leader



MAP VIEW



Each location has a name corresponding to authentic environment



The cafeteria and the team leader is point of entry and transition



Translanguaging



The changing room – an opportunity for more generic training of words (colours, clothes, hair etc.)





HOVED

FRISURE:



HÅRFARVE:



HAT:



HAT FARVE:



ØJENFARVE:



The cleaning room



The sorting game





Effect monitoring

Testing and results



40 different words from the game was tested

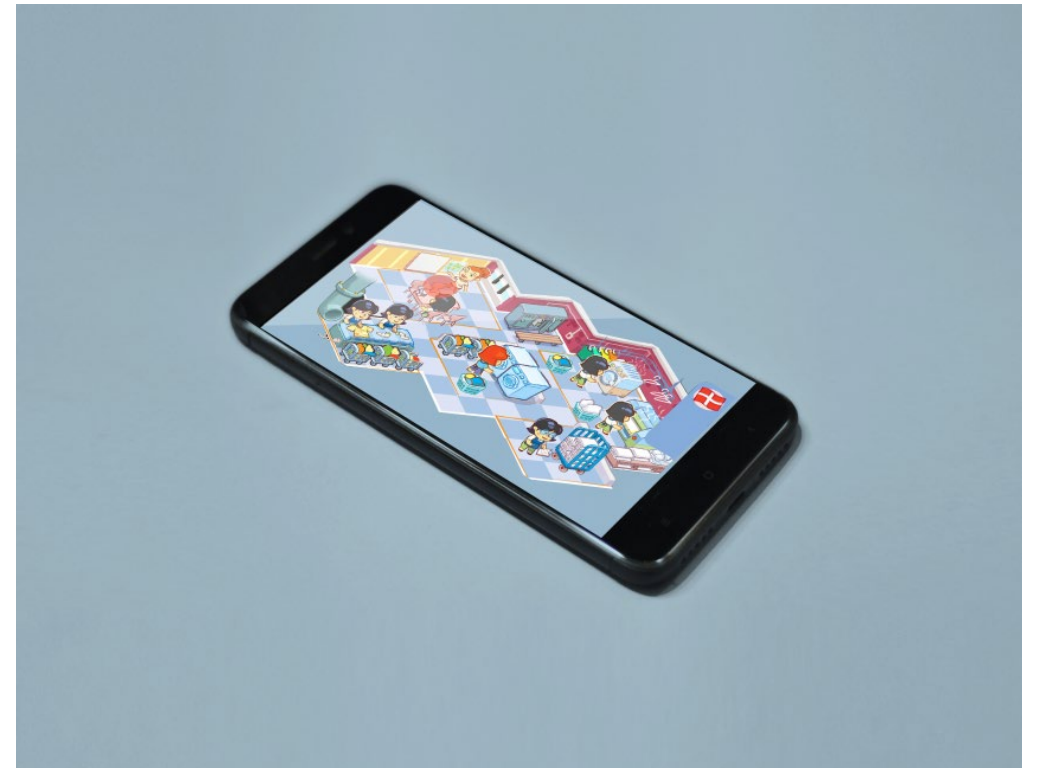
Clothes, colours, cleaning products and cleaning actions

20 employees were tested in total: 10 i Måløv, 5 i Kalundborg og 5 in Roskilde



Overall findings

- The game had an effect on everybody testing it (except one)
- The significance of being seen, acknowledged and taken seriously
- Different approach to working digitally and playing games
- Playing as an approach to learning was, for some unusual
- Different outcome for beginners and more skilled language learners



Testing approach

- Information about game and monitoring project in 3 different cleaning sites
- Language screening by certified language teacher and placement with the Danish language module system
- Pre- and post-testing of in-game vocabulary using test developed especially for this monitoring
- Gaming kick-off session where employees were given access to game
- Minimum 4 hours of gaming time over a period of 2 months

Pretest og post-test results

Percent error initial test: between 10% and 67%,
28 % in average

Percent in final test: Between 0% and 50%, average
12%.



Kalundborg

Navn	Fejlprocent 27/10- 2022	Fejlprocent 25/1 - 2023	Gennemsnitlig Rigtighedsprocent 27/10 - 2022	Gennemsnitlig Rigtighedsprocent 25/1 - 2023
	25	15	75	85
	30	20	70	80
	10	12,5	90	87,5
	20	5	80	95
	15	10	85	90
Gennemsnit	20	12,5	80	92



Måløv

Navn	Fejlprocent t. 3/11- 2022	Fejlprocent 31/1 - 2023	Gennemsnitlig Rigtighedsprocent 3/11-2022	Gennemsnitlig Rigtighedsprocent 31/1 - 2023
	17	5	83	95
	60	5	40	95
	12,5	5	87,5	95
	27,5	5	72,5	95
	17,5	0	82,5	100
	22,5	5	77,5	95
	20	5	80	95
	20	0	80	100
	12,5	10	87,5	90
	12,5	0	87,5	100
Gennemsnit	22,5	4,5	77,5	95,5



Prætest og post-test results

Largest effect on beginner level learners, DU1 and DU2 modul 1-2 level, some of whom had been in the country over 10 years

Most significant effect: from 60 % mistakes to 5 % mistakes

(DU2, modul 1, Rumania, 2 years i DK)



Conclusion

WorkdPlays is based on an approach to language and language learning as a situated social practice.

In this way, it is different from many other digital platforms and resources, as these are typically based on a text-book and language system approach.

The simulated workplace context presents a possible bridge between classroom-based language learning and the work-life challenges and needs of language learners

Digital language learning games can provide an alternative, a supplement or a starting point for second language learners, in particular beginners and illiterate learners.