VIRTUAL STUDYING AND TEACHING CHALLENGES STUDENTS AND TEACHERS

RESULTS AND EXPERIENCES FROM A PROJECT "TEACHER IN A VIRTUAL CLASSROOM"

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RESEARCH BACKGROUND

1. Characteristics which support effective and meaningful learning: e.g., authenticity, collaboration with peers, support for metacognition, engagement and task-related motivation; also for virtual teaching.
   (Herrington & Oliver, 2000; Herrington, Reeves & Oliver, 2014; Iiskala, Vauras, Lehtinen & Salonen, 2011; Järvelä, Renninger, 2014; Järvelä, Järvenoja, & Veermans, 2008; Paavola, Lakkala, Muukkonen, Kosonen & Karlgren, 2011; Rajala, Martin & Kumpulainen, 2016).
2. Virtuality as a new element in learning and teaching and the affordances of the learning environment and other digital tools: which activities are supported, which are impossible.
3. Teacher's role and competence in designing the course (Lakkala, Ilomäki, & Kosonen, 2009).

THE AIMS OF THE STUDY

1. What are upper secondary level students' and teachers' perceptions of virtual studying and teaching?
2. What are the specific characteristics of practices in virtual teaching and studying?
3. What kind of pedagogical practices emerged during virtual teaching?

CONTEXT

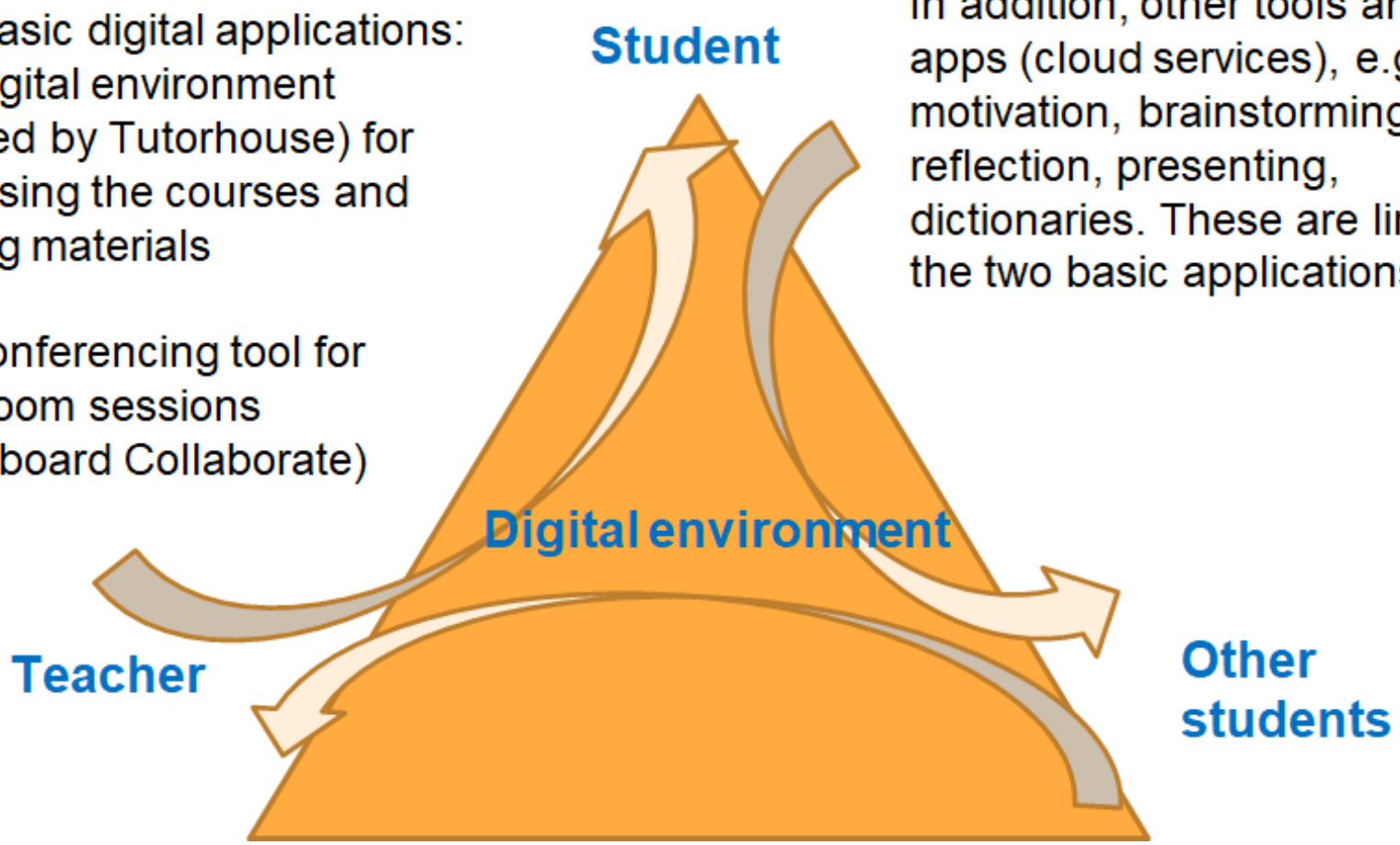
- Virtual upper secondary courses offered and organised by a private company. Teachers are employed by Tutorhouse and they are kind of ”permanent” teachers.
- Students choose the courses, sometimes e.g., a teacher or a principal suggests them.
- Schools and local school admin. accept and pay for the courses and (usually) organise the necessary technology for students.
- Majority of courses are open and free courses, and till now, mainly language courses (voluntary languages, often on advanced level)
- Also services for special cases: e.g., one school was renovated and students could participate in the virtual courses during that time, or a school does not temporarily have a qualified teacher.

DIGITAL ENVIRONMENT

Virtual lessons with a teacher. Students anywhere. All communication through a digital environment and tools.

Two basic digital applications:
1) a digital environment (created by Tutorhouse) for organising the courses and sharing materials

2) a conferencing tool for classroom sessions (Blackboard Collaborate)



In addition, other tools and apps (cloud services), e.g. for motivation, brainstorming, reflection, presenting, dictionaries. These are linked to the two basic applications.

METHODS AND DATA

An explorative study; a development approach. Probably three separate cases because of three different types of students:
(1) a pioneer group (2017),
(2) a group of students from one upper secondary (2018; the school was renovated),
(3) a longitudinal data of students participating in virtual courses 2018-2019

Mixed methods approach:

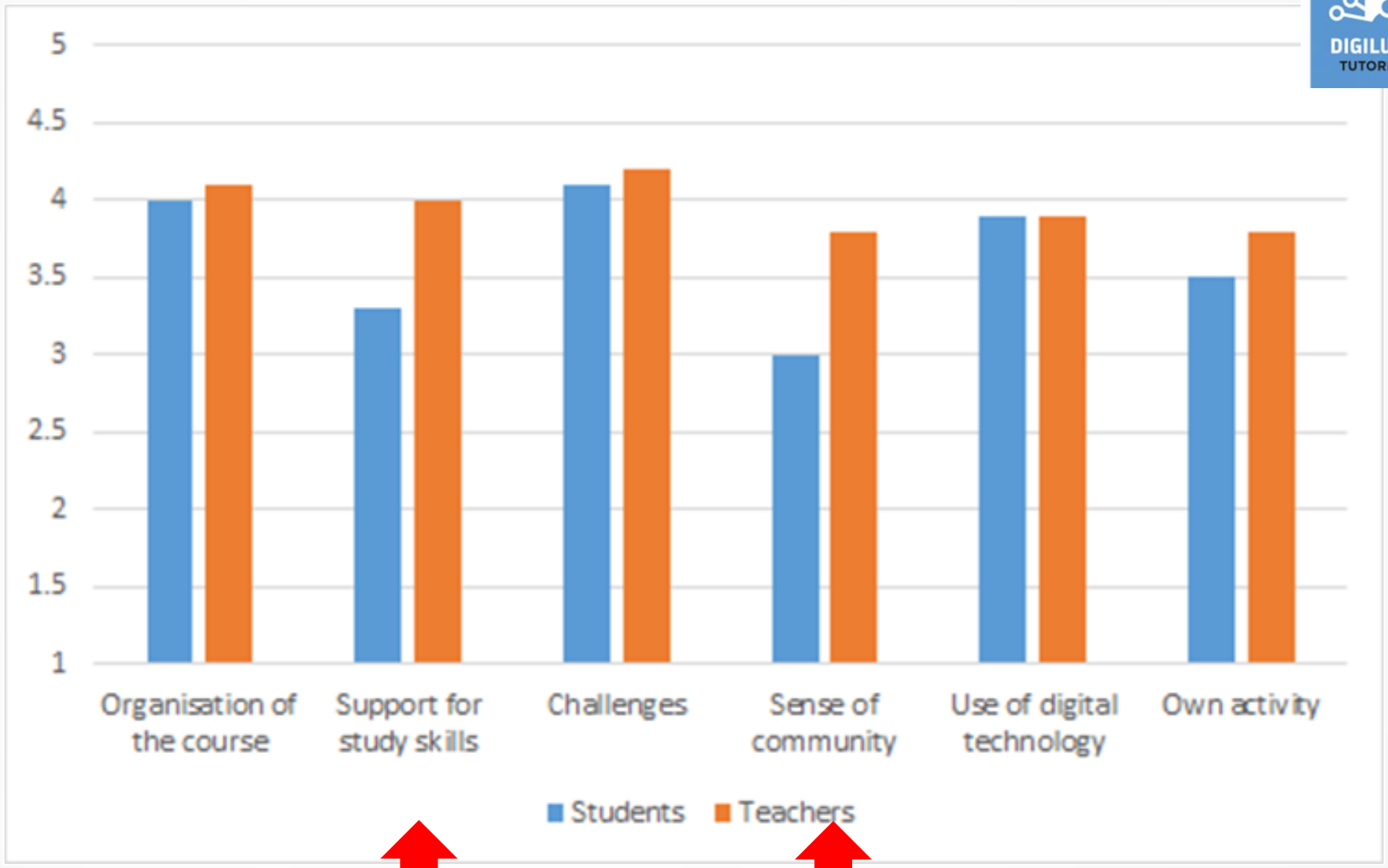
- A questionnaire to students and teachers concerning virtual studying and teaching; filled after a course, 2017-2019. Three different data sets.
- Observations of lessons and related interviews 2018 (7 teachers).
- Final interviews 2019 (5 teachers)

INDIVIDUAL AND SPORADIC FINDINGS

QUESTIONNAIRE STATEMENTS: SOLUTION OF SIX FACTORS

1. Organisation of the course, 7 statements, e.g., *I knew well what was intended to do.*
2. Support for study skills, 5 statements, e.g., *I learned to evaluate my study skills.*
3. Challenges, 5 statements, e.g., *The level of challenges in the assignments was good.*
4. Own activity, 5 statements, e.g., *I was more active than in an ordinary classroom*
5. Sense of community, 3 statements, e.g., *The teacher helped us to know each other better*
6. Use of digital technology, 5 statements, e.g., *Digital technology supported group work*

STUDENTS' AND TEACHERS' PERCEPTIONS OF THE COURSES (GROUP 3)



STUDENTS' ANSWERS IN OPEN QUESTIONS (GROUPS 2 AND 3)

GROUP 2 (40 students)

Positive or impressive (95)

Way of studying (46 / 48,4%): well-working and natural (10), easy (9), effective (6), pleasant (5), flexible (4), peaceful (4),

Teaching practices 31 / 32,6%): good and encouraging teacher (12), good teaching methods (4), scaffolding and guidance (5), good tasks

Benefits (6 / 6,3%): possibility to study (5

Sense of community (10 / 10,5%): interaction (6), small groups (3), group tasks (1)

Digitechnology (2 / 2,1%): well-functioning (2)

GROUP 3 (75 students)

Positive or impressive(159)

Way of studying (67 / 42,1%): relaxed (11), flexible (10), easy (9), pleasant (9 effective (9), peaceful (7), positive experience(6)

Teaching practices (50 / 31,4%): good and encouraging teacher (13), course in general (8), good teaching methods (7), scaffolding and guidance (5), timetable (5), good tasks (4)

Benefits (30 / 18,9%): possibility to study (15), new learning (8), courage (4), experience of way of studying (3)

Sense of community (10 / 6,3%): interaction (7), group tasks (2), small groups (1)

Digitechnology (2 / 1,3%): well-functioning (2)

STUDENTS' ANSWERS IN OPEN QUESTIONS (GROUPS 2 AND 3)

GROUP 2 (40 students)

Challenging or disturbing (36)

Way of studying (1 / 2,8%): demands self-regulation (1)

Teaching practices t (3 / 8,3%): bad teaching methods (3)

Challenges (13 / 36,1%): too much home work (10), challenging content (2), hard lessons (1)

Sense of community(11 / 30,6%): group tasks (3), social distance (5), too dense interaction (3)

Digitechnology (8 / 22,2%): technical problems (4), the use of technology(4)

GROUP 3 (75 students)

Challenging or disturbing(87)

Way of studying (25, 28,7%): use of own time (20), demands self-regulation(5)

Teaching practices (17, 19,5 bad teaching methods ((9), time (after school day) (8)

Challenges (17, 19,5%): too fast progress (7), challenging content (6), hard lessons (4)

Sense of community (11, 12,6%): group tasks (6), social distance (4), too dense interaction (1)

Digitechnology (17, 19,5%): technical problems (16), the use of technology(1)

WOULD YOU RECOMMEND TO STUDY IN A VIRTUAL CLASSROOM?

Answer	Group 1 %	Group 2 %	Group 3 %
Yes	56.1	58.9	60.2
Conditionally	35.1	35.9	28.2
No	5.3	2.6	3.8
No clear answer / no answer	3.5	2.6	7.7
Total	**100**	**100**	**99.9**

TEACHERS' AND GROUP 3 STUDENTS' PERCEPTIONS OF THE SPECIFIC CHARACTERISTICS IN VIRTUAL STUDYING

1. No major differences compared to f2f classrooms
2. Possibility to support geographical equity (A general satisfaction to this possibility)
3. A noteworthy way of studying (Better than lonesome web-based learning; works well; nice)
4. Effects on learning (Students learn something better, e.g., speaking a foreign language because for the teacher it is easier to follow individual students; Eliminates something to learn; challenging but effective)
5. Students' motivation and self-initiative needed

PEDAGOGICAL PRACTICES EMERGED DURING VIRTUAL TEACHING EXPERIENCES

1. Teacher's own attitude changed (More relaxed and flexible; more experiments)
2. Explicit planning and organising increased (Also adopted in ordinary teaching)
3. Classroom practices changed
    1. Same topics but in new ways
    2. Virtual meetings for discussions, individual tasks (writing etc.) as home assignments
    3. More use of digital tools.
    4. Time for social discussion in the beginning of a lesson
    5. Games to lessons
    6. Peer assessments to lessons
    7. More assignments to be done during a week

DISCUSSION AND CONCLUSIONS 1

- Virtual teaching offers a new possibility to increase learning possibilities in exceptional situations and in several subjects.
- In general, various student groups were satisfied with the experiences of participating in a virtual course and they were ready to recommend it also to others.
- Technology was not the issue – it worked well and students did not have difficulties.
- Pedagogical issues:
  - Collaboration and forming the sense of community need to be supported better – these are a challenge for virtual teaching.
  - Teachers invented and developed several small and creative pedagogical practices during these two years and improved their competence of teaching virtually.

DISCUSSION AND CONCLUSIONS 2

- Methodological issues:
  - The results of three student groups need to be analysed more in depth; the positive results of Group 3 cannot be generalised to the two other groups. However, the positive results can be used to improve virtual teaching arrangements and practices.
  - We did not investigate pedagogical practices because the process of teaching was new to teachers. However, there were some signs of difficulties to apply “advanced” pedagogical ideas. This need to be investigated more.

THANK YOU!

For more information:

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REFERENCES

- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development, 48*(3), 23–48.
- Herrington, J., Reeves, T. C., & Oliver, R. (2014). Authentic learning environments. In J.M. Spector, M. David Merrill, J. Elen & M. J. Bishop (Eds.), *Handbook of Research on Educational Communications and Technology* (pp. 401–412). New York, NY: Springer Science+Business Media. doi:10.1007/978-1-4614-3185-5_32.
- Iiskala, T., Vauras, M., Lehtinen, E. & Salonen, P. (2011). Socially shared metacognition of dyads of pupils in collaborative mathematical problem-solving processes. *Learning and Instruction, 21*, 379–393.
- Järvelä, S. & Renninger, K. A. (2014). Designing for learning: Interest, motivation, and engagement. *Cambridge Handbook Of The Learning Sciences*. 668–685. http://works.swarthmore.edu/fac-education/122
- Järvelä, S., Järvenoja, H. & Veermans, M. (2008). Understanding dynamics of motivation in socially shared learning. *International Journal of Educational Research*, *47*, 1, 122-135.
- Lakkala, M., Ilomäki, L., & Kosonen, K. (2010). From instructional design to setting up pedagogical infrastructures: Designing technology-enhanced knowledge creation. In B. Ertl (Ed.), *Technologies and Practices for Constructing Knowledge in Online Environments: Advancements in Learning* (pp. 169–185). Hershey, PA: Information Science Reference.
- Paavola, S., Lakkala, M., Muukkonen, H., Kosonen, K., & Karlgren, K. (2011). The roles and uses of design principles for developing the trialogical approach on learning. *Research in Learning Technology, 19*(3), 233–246.doi:10.1080/21567069.2011.624171
- Rajala, A., Martin, J. & Kumpulainen, K. (2016). Agency and learning: Researching agency in educational interactions. *Learning, Culture and Social Interaction, 10.* doi:10, 1–3.1016/j.lcsi.2016.07.001