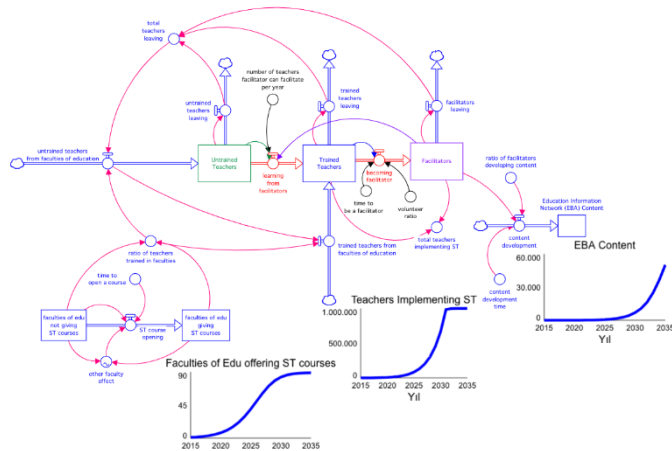


**Abstract**

Although the Systems Thinking approach in education is not new worldwide, implementations in K12 education are very recent in Turkey. We present the first Systems Thinking course incorporated in a MA program in Learning Sciences. Our research aims to investigate the effectiveness of the developed Systems Thinking course curriculum on problem definition and analysis..

**Introduction**

Systems Thinking Society is working for the infusion of systems thinking approach into the people of Turkey starting from K-12 education by incorporating this approach into the curriculum of K-12 education in schools and faculties of education in universities.



**Methodology**

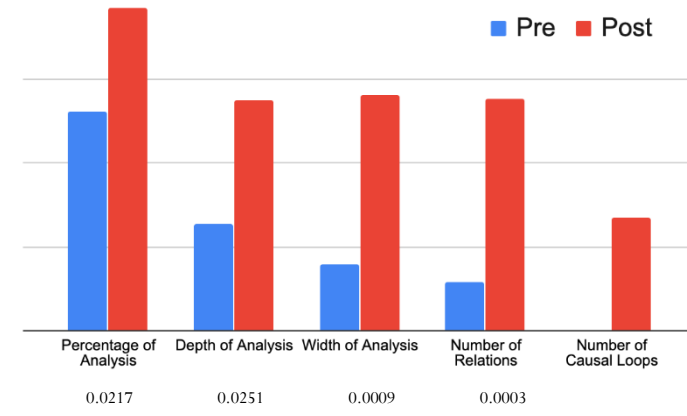
The study was conducted in a non-profit private university in Istanbul/Turkey in 2018-2019 summer semester. A total of 12 MA students in Learning Sciences were involved in the study. MA students were also actively teaching in various grade levels ranging from preschool to secondary school.

Lesson	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
1	Welcome	HW1 evaluation	HW2 evaluation	HW3 evaluation	HW4 evaluation	HW5 evaluation	HW6 evaluation	HW7 evaluation	HW8 evaluation	HW9 evaluation
2	Identify, Analyze, Solve	What a System? Simple, complicated, complex, static and dynamic systems.	Behavior Over Time Graph (Theory and Examples)	Causal Loop Diagrams (Theory and Examples)	Archetypes	Dynamic Behavior	World Climate Game	Experience Sharing session	Story Deconstruction	Project Preparations
3	Introduction of Course Program	An Outlook of Systems Thinking	Jobsheet Visual - Theory	Stock-Flow Diagram (Theory and Examples)	Ladder of Inference (Theory and Examples)	Group Model Building	Simple Numeric Models	Experience Sharing Session	Project Presentations	
4	Systems Thinking Games	Jobsheet Visual - Examples	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation	Identify, Analyze, Solve Post-test	
Reading 1	Reading 2	Reading 3	Reading 4	Reading 5	Reading 6	Reading 7	Reading 8	Reading 9	Reading 10	

Questions asked in the beginning and end of the course:

- Identify an ongoing problem that you think important (personal, local, global). Write the problem in a few sentences:
- Analyze the problem with available information. Propose a solution if any.

**Results**



A paired, two-tailed t-Test is computed on student's pre and post test results

**Conclusion**

The assessment showed that the participants demonstrated statistically significant improvements in the analysis of a given problem. Stock flow diagram was the most used tool in the analysis. It was followed by the causal loop diagram. We can conclude that the use of ST/SD tools is effective in the improvement of analysis skills.

We are aiming to prototype an effective and viable course to be delivered in faculties of education in Turkey