

Shared Tasks as Tutorials

A Methodical Approach

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Motivation

Linking research and teaching is much desired in higher education. We studied the use of shared tasks for teaching to achieve this goal. Our courses on information retrieval for Bachelor and Master levels at two different German universities provided insight on the benefits and challenges of using shared tasks as tutorials.

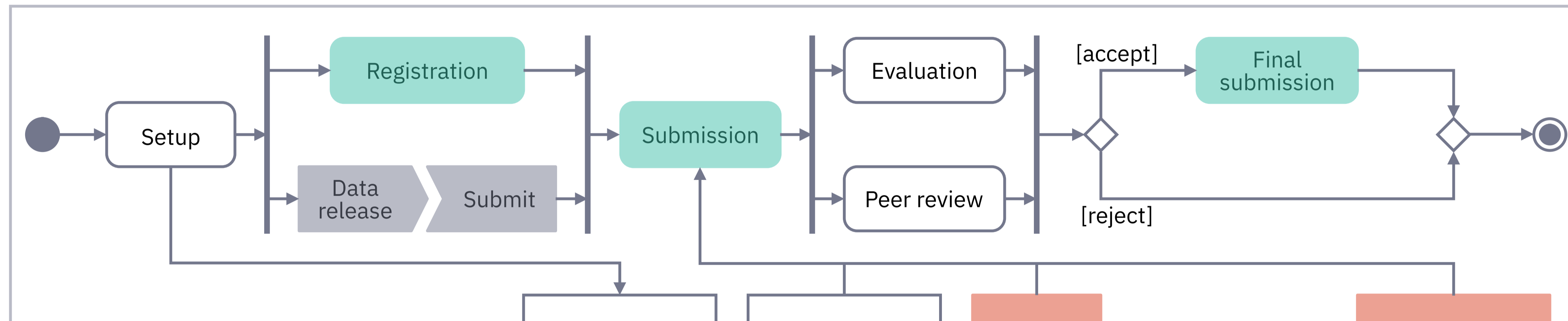
What is a shared task? A shared task is a friendly research competition in which solutions to a given challenging research problem are developed by independent teams and then comparatively evaluated.

Contribution

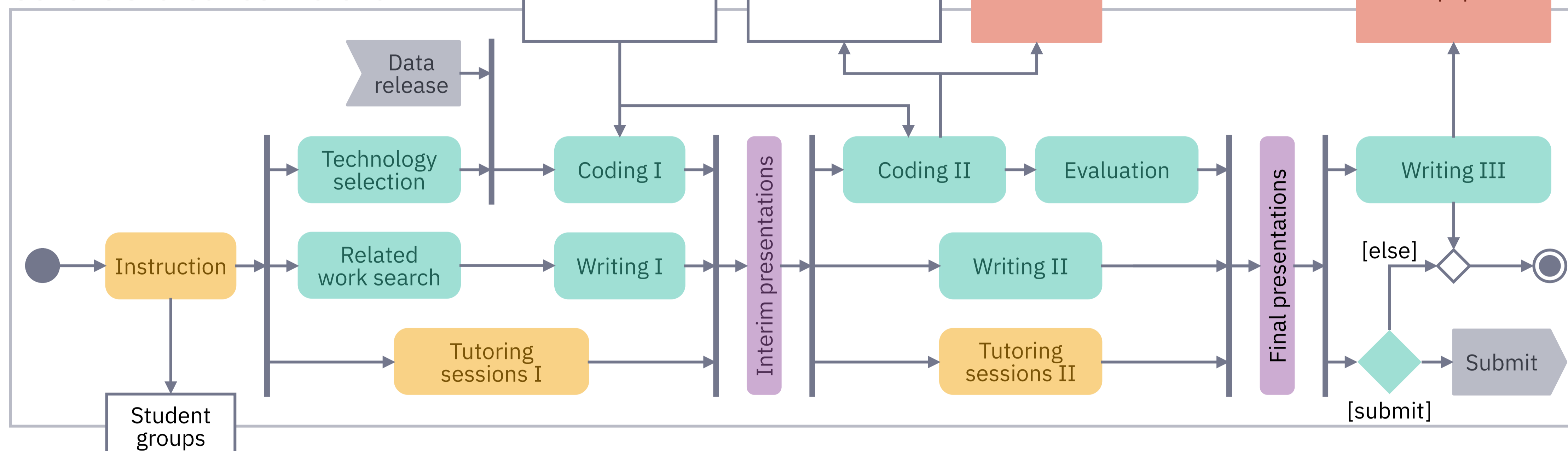
We present a didactically grounded integration of shared tasks in tutorials as a novel teaching method, discuss the implications for teaching, and share best practices. Our contributions are:

1. A semi-formal process model developed from our practical experience for tutorials that methodically integrate a shared task,
2. An overview of didactics of shared task-based teaching
3. A practical report based on ten IR courses at two universities with tutorials based on our method

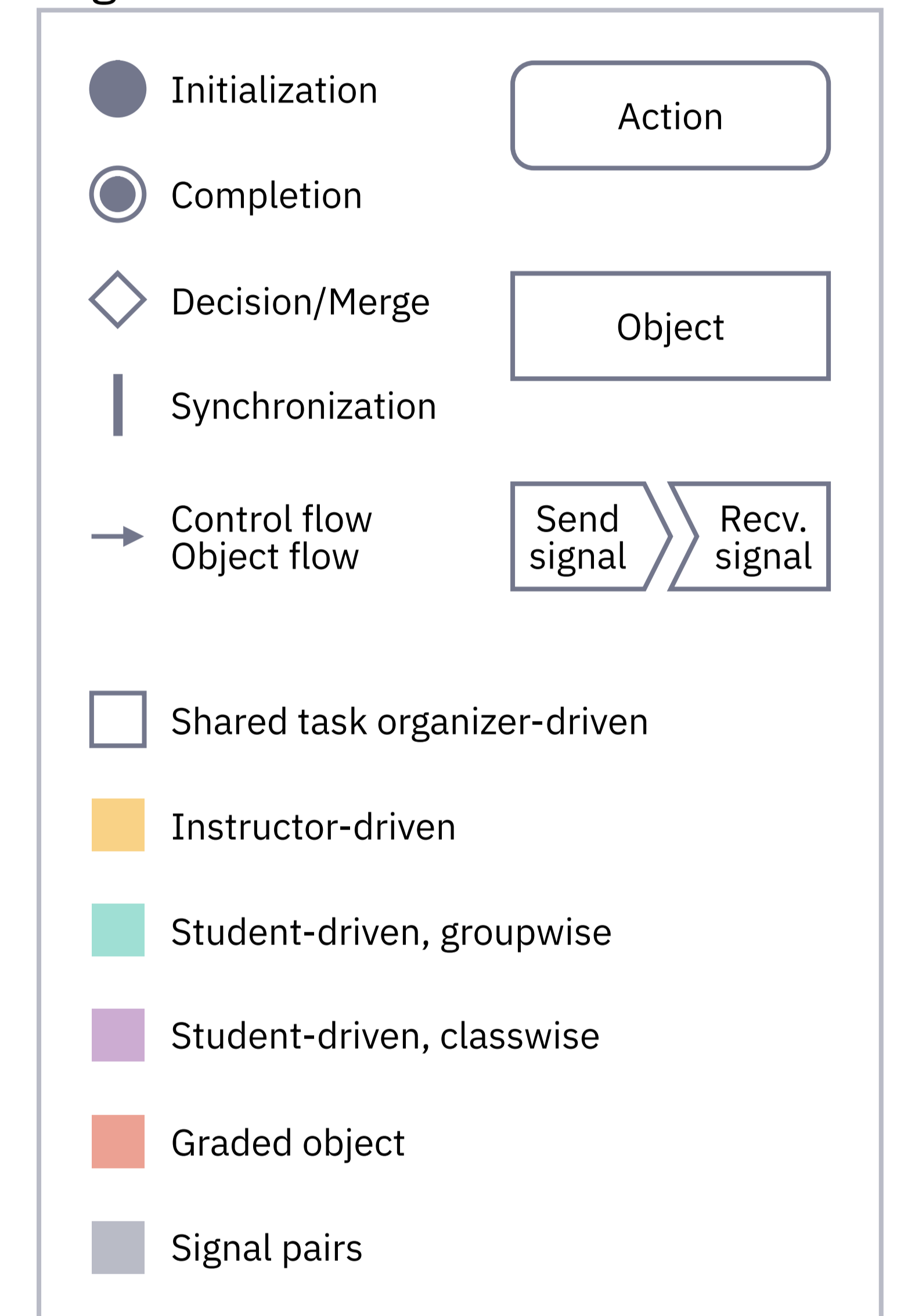
Generic Shared Task Event



Generic Shared Task Tutorial



Legend



Student Feedback

Evaluation was conducted using questionnaires, before and after introducing shared tasks into the teaching concept. On average, students gave shared-task-based courses better evaluation than traditional courses. The additional complexity of shared tasks as teaching tool did not result in problems w.r.t pace, scope, effort and structure of the courses. Free-text feedback was highly positive and satisfaction was high. Communicating the concept of shared tasks needs improvement though, as consistency and transparency of course contents were rated worse in comparison.

Item	Scale	w/o Sh. Task	w. Sh. Task
Pace	too slow (1) - too fast (5)	3.2	3.1
Scope	too narrow (1) - too broad (5)	3.4	3.2
Effort	too little (1) - too much (5)	3.3	3.3
Structure	very bad (1) - very good (5)	4.3	4.4
Consistency	very bad (1) - very good (5)	4.4	4.2
Transparency	very bad (1) - very good (5)	4.5	4.3
Satisfaction	low (1) - high (5)	4.27	4.33

Student Participation

In our study a total of 256 students from different courses of study took the information retrieval shared task tutorials at two different universities. 26 of 42 student groups submitted their software to Touché@CLEF. Additionally, three more universities used shared tasks in their courses within and beyond information retrieval.

Lessons Learned From Teaching

- Shared task and term timeline can be out of sync—avoid waiting.
- Students programming skills and knowledge is heterogeneous—compose groups to distribute knowledge and skills.
- Teach in person or online—provide videos for lectures, communicate via conference tools, Discord, and email.
- Students experience scientific practice—they may consider a career in research.
- Solutions to multi-domain shared tasks could benefit from interdisciplinary teams.
- Extend shared task platforms and tools to ease teaching effort and increase number of students in the future.

Overall: shared tasks are a highly effective teaching tool!