

Boston Strikes Back: Sequential School Choice

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Abstract

We analyze a sequential preference submission game in centralized matching problems such as school choice. Our motivation is field settings where students submit their preferences over schools in an application website sequentially, while learning information about the submissions of students who have previously submitted (which is done, for example, in the Wake County Public School System, which is the 15th largest in the nation with nearly 160,000 students). Comparing the widely used Boston Mechanism (BM) to the celebrated student-proposing Deferred Acceptance (DA) mechanism, we show that sequential BM has equilibrium outcomes that improve efficiency relative to DA. In particular, under BM for any problem, there exists a subgame perfect Nash equilibrium (SPNE) outcome that (weakly) Pareto dominates the student optimal stable matching (SOSM). These gains occur because sequentiality serves as a coordination device. Given the common finding that it is difficult for agents to coordinate on good outcomes in certain settings, we test the model's predictions using a laboratory experiment. The results show that students are assigned to more preferred (under true preference) schools with sequential BM relative to sequential DA (i.e., sequential BM is more efficient than sequential DA). We conclude that sequential preference submission allows students to overcome the coordination problem that is inherent in school choice settings when preferences are correlated.