Swimming hall, the Nobel prize and phase transitions: Mapping students' associations through Wikipedia Speedrun

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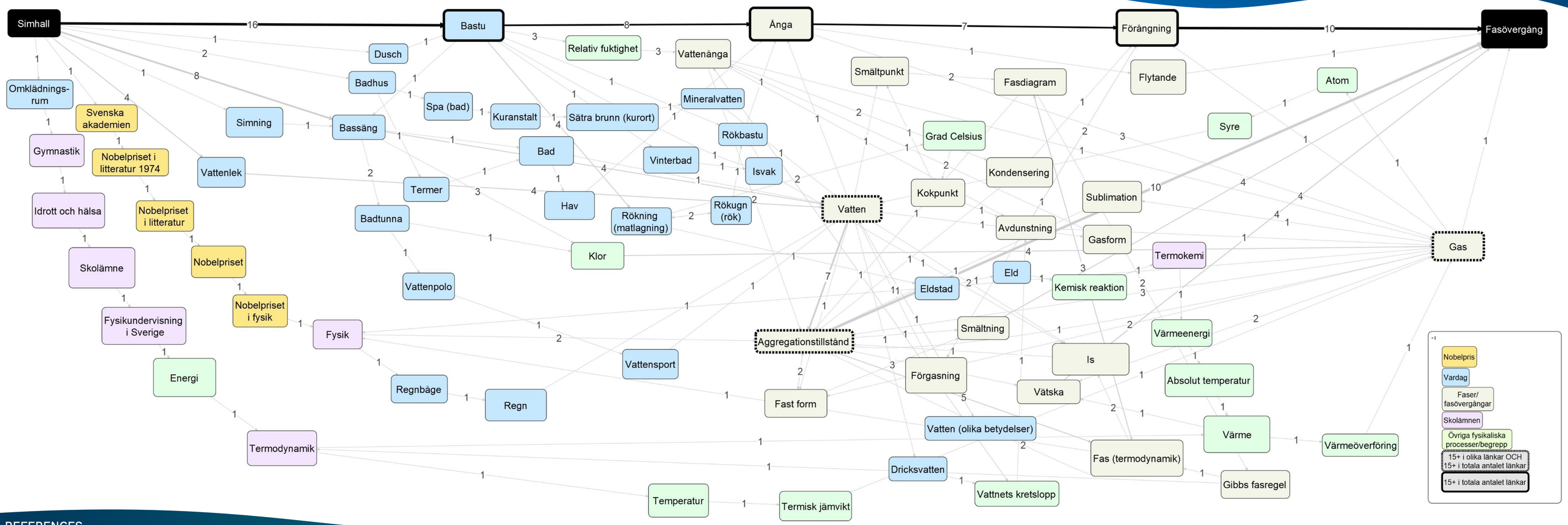
BACKGROUND

Understanding students' ***conceptual associations*** and their organization is crucial for effective teaching (Redish, 2014; Chi et al., 1981). While traditional methods like ***concept mapping*** (Koponen & Nousiainen, 2018) can reveal these associations, our study explores an alternative approach by examining students' spontaneous reactions and associations to information presented in Wikipedia articles. This allows for a more controlled investigation of students' paths of association, similar to a primed *spreading activation* (Anderson, 1983).

METHODOLOGY

We studied high school physics students playing ***Wikipedia Speedrun*** - a game where participants navigate from one Wikipedia article to a target article using the fewest possible clicks. This approach allows us to trace students' associative moves from a familiar concept to a more abstract physics concept. In our study, each speedrun starts with a familiar article and ends with a physics-relevant article to explore how students associate from something familiar to something more physics-specific. Out of 40 high school physics students who participated in this part of the study, 36 completed the speedrun. This particular speedrun started with 'Simhall' (swimming hall) and ended with 'Fasövergång' (phase transition).



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