

Title: Learning about Social Learning in MOOCs: From Statistical Analysis to Generative Model

Paper Link: <https://ieeexplore.ieee.org/document/6851916>

1 Summary

1.1 Motivation/purpose/aims/hypothesis

This research understands the dynamics of discussion forums in MOOCs to improve social learning and delves into addressing the issues of sharp decline in participation over time and information overload from too many threads

1.2 Contribution

Large-scale statistical analysis of forum data from 73 Coursera courses. Identified factors associated with forum participation and decline. Proposed generative model to explain information overload and guide design of algorithms. Developed algorithms for topic extraction and thread relevance ranking

1.3 Methodology

Crawled and analyzed data from Coursera forums. Used regression models to analyze participation. Designed classifiers and compared performance. Formulated generative model to explain classifier performance. Extracted topics with keyword algorithm and ranked threads by relevance

1.4 Conclusion

Staff participation increases volume but does not reduce decline rate. Too many concurrent threads reduces attention per thread. Generative model explains classifier performance and guides algorithm design. Topic extraction and thread ranking algorithms demonstrated effectiveness

2 Limitations

2.1 First Limitation/Critique

The paper statistically analyzes factors associated with forum participation decline, but does not study the impact of interventions to reduce this decline. For example, increased teacher participation is correlated with higher volume but does not affect decline rate. However, the paper does not test whether other types of interventions could mitigate the declines

2.2 Second Limitation/Critique

The paper demonstrates the improved performance of the proposed relevance ranking algorithm over baselines via human evaluation on a sample of threads. However, the scale of this evaluation is limited to 10 courses. More extensive testing on larger samples could strengthen the evidence.

3. Synthesis

The paper provides a comprehensive analysis of MOOC forum dynamics and information overload issues. The generative modeling approach is effective in guiding the design of algorithms. Further work could focus on using these insights to devise and test interventions to improve forum participation.