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Learning Through Noticing: Theory and Experimental Evidence in Farming[*]

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Abstract

Existing learning models suggest that the availability and informativeness of data determine the pace of learning. However, in learning to use a technology, there are often a staggering number of potentially important input dimensions. People with limited attention must choose which dimensions to attend to and subsequently learn about from available data. We use this model of "learning through noticing" to shed light on stylized facts about technology adoption and use. We show how agents with a great deal of experience may persistently be off the production frontier, simply because they failed to notice important features of the data that they possess. The model also allows for predictions on when these learning failures are likely to occur. We test some of these predictions in a field experiment with seaweed farmers. The survey data reveal that these farmers do not attend to pod size, a particular input dimension. Experimental trials suggest that farmers are particularly far from optimizing this dimension. Furthermore, consistent with the model, we find that simply having access to the experimental data does not induce learning. Instead, behavioral changes occur only after the farmers are presented with summaries that highlight previously unattended-to relationships in the data.

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