

Abstract Submitted
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Learner understanding of energy degradation¹ ABIGAIL DAANE, STAMATIS VOKOS, RACHEL SCHERR, Seattle Pacific University — Learners' everyday ideas about energy often involve energy being “used up” or “wasted.” In physics, the concept of energy degradation can connect those ideas to the principle of energy conservation. Learners' spontaneous discussions about aspects of energy degradation have motivated us to introduce new learning goals into our K-12 teacher professional development courses. One of our goals is for teachers to recognize that since energy degradation is associated with the movement of some quantity towards equilibrium, the identification of energy as degraded or free depends on the choice of the objects involved. Teacher discussions of a particular energy scenario (about a wind-powered heating system) led to productive conversations about the nature of energy degradation and its possible dependence on the choice of what to include in the scenario.

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