Incorporating Service-Learning Projects within the Civil and Environmental Engineering Capstone Design Course

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The civil and environmental engineering programs at the University of Vermont (UVM) incorporated systems thinking and a systems approach to engineering problem solving within their programs. A systems approach incorporates long-term social, environmental and economic factors within the context of the engineering problem solution and thus leads to sustainable engineering solutions. As a way of practicing the systems approach, service-learning (S-L) projects have been incorporated within the curricula, culminating with the senior capstone design course for the past eight years. Projects that focus on sustainable solutions are especially sought after and have included such projects as stormwater management and design, small hydroelectric, and historical preservation, among others. A variety of assessment methods have been used to gage student understanding and attitudes including student surveys, focus groups, and assessment of student projects. This presentation will include details on selecting and executing service-learning projects with some examples and their impact on student learning.

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