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| Title: | An inquiry-based approach in large undergraduate labs: Learning, by doing it the “wrong” way |
| Authors: | Bachhawat, A.K. (/jspui/browse?type=author&value=Bachhawat%2C+A.K.)<br>Pandit, Shashi Bhushan (/jspui/browse?type=author&value=Pandit%2C+Shashi+Bhushan)<br>Banerjee, Indranil (/jspui/browse?type=author&value=Banerjee%2C+Indranil)<br>Anand, Shashi (/jspui/browse?type=author&value=Anand%2C+Shashi)<br>Sarkar, Roman (/jspui/browse?type=author&value=Sarkar%2C+Roman)<br>Mrigwani, Arpita (/jspui/browse?type=author&value=Mrigwani%2C+Arpita)<br>Mishra, Shravan Kumar (/jspui/browse?type=author&value=Mishra%2C+Shravan+Kumar) |
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| Abstract: | Undergraduate laboratory courses, owing to their larger sizes and shorter time slots, are often conducted in highly structured modes. However, this approach is known to interfere with students' engagement in the experiments. To enhance students' engagement, we propose an alternative mode of running laboratory courses by creating some “disorder” in a previously adopted structure. After performing an experiment in the right way, the students were asked to repeat the experiment but with a variation at certain steps leading to the experiment being done the “wrong” way. Although this approach led to fewer experiments being conducted in a semester, it significantly enhanced the students' involvement. This was also reflected in the students' feedback. The majority of students preferred repeating an experiment with a variant protocol than performing a new experiment. Although we have tested this inquiry-based approach only for an undergraduate laboratory course in molecular biology, we believe such an approach could also be extended to undergraduate laboratory courses of other subjects. |
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