

# Essays on Teaching Excellence

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## Deep/Surface Approaches To Learning In Higher Education: A Research Update

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Perhaps no articles published in *The National Teaching & Learning FORUM* in its twenty year history have had as much impact as the pieces on “deep/surface approaches” to learning in 1995. The articles reported on 25 years of educational research begun in Sweden by Ference Marton and Roger Säljö in the 1970s and furthered especially by Noel Entwistle and Paul Ramsden in the UK and Australia. This research wasn’t unknown in the United States, but it had been eclipsed by a focus on a psychological understanding of learning styles and the sense of a need for teaching to cater to a spectrum of innate personality types tied to preferred ways of learning – “visual learners,” “auditory learners,” *et al.*

Instead of looking at and trying to adjust to differences, the deep/surface researchers concentrated on observing commonalities. How did actual students actually study and what were the environmental cues that prompted them to take the approach (“deep” or “surface”) they chose? This research and renewed awareness of it here have had a powerful influence on thinking about teaching and learning in higher education in the United States especially with regard to assessment. Why? Because the research has found that students’ *intention* in studying/learning relates strongly to their perceptions of *what* they will be assessed on and *how* they will be assessed.

Probably the most influential finding of the original experiments, the researchers say, was what they describe as an “obvious aspect of learning virtually ignored by earlier research.” And that was the fact that many students did not get the point of what they were reading “simply because they were not looking for it.” Why were students not looking for the point? Because their perception of the learning environment (the class, the course) did not suggest to them that they could or that they would be assessed on their understanding of it. Generally, students were gathering the facts on which they expected to be tested. They did not differentiate between facts and meaning and certainly did not feel empowered to see themselves as makers of meaning; hence, their relation to learning remained on the surface of understanding, never burrowing very deep into its pleasures, dangers or ambiguities.

The “deep/surface approaches” research connects with the insights of “learning styles” research at the crossroads of *how* students go about studying/learning. The “hows” vary: some students do depend more strongly on visualization for understanding than other students and so on. But student perceptions of the learning environment set their intention and their intention determines the vigor with which they apply their usual or preferred heuristics. In short, if students perceive that a course will be a Jack Webb (*Dragnet*) investigation where “just the facts” matter, that’s what they’ll go for. If they perceive that the course constitutes an investigation into the meaning or meanings the facts make possible, they’ll dig deep for that (or drop the course).

American, psychologically oriented treatments of learning styles tend to speak of four or five different styles, sometimes tied to introversion or extroversion or to preferences for visual versus auditory modalities or the like. The deep/surface researchers speak instead of two fundamental learning strategies students take — “*comprehension learning*” and “*operations learning*.” On the one hand “*holists*” (those following a comprehension strategy) engage a topic by forming a general picture of the whole which they use to guide them as they study the subject even as study inevitably requires modifying the initial picture. “*Serialists*” (concerned with operations) work more comfortably by constructing their understanding step-by-step by concentrating on an accurate grasp of details.

But just as on most streets traffic moves in two directions, learning sometimes requires one approach and at other times, another approach. Full understanding depends upon an alternation between the comprehension/holist and operations/serialist orientation as students look at facts in detail, follow their patterns of interconnectedness and relate these to larger ideas and concepts. Research indicates that this alternation, this interplay between approaches characterizes a deep approach to study and that there are three “sub-scales” directly involved in the process – ‘relating ideas,’ ‘use of evidence’ and ‘interest in ideas.’ Moreover, research finds a deep approach closely related to a conception of ‘learning as transforming.’ Students not open to the possibility that their learning will change them seem more likely to take a surface approach to their studies

Research following the paths cut by the original “deep/surface” work has continued over the last 14 years with a number of findings that expand insights into the nature of the learning environments students encounter. The need to accommodate and adapt to disciplinary modes of thinking as part of forming a deep or surface approach to studying within the discipline is one of those findings. For example, while students have individual preferences in the way they learn – seeing versus hearing, etc – specific areas of study, specific disciplines, also often have ways of thinking embedded in them that are fundamental to forming understanding in those areas, and students must be led to see this without, again, being misled into believing that understanding lies merely in grasping the facts. At the same time, research also finds a deep approach associated with an ‘intrinsic orientation to the subject’; so students with a stronger native interest in art will have to work harder in calculus to find their way to a deep approach than those with a native interest in math.

Some of the findings in this research area sound at first like things wise parents and teachers have known for a long time. For example, Noel Entwistle wrote in a paper delivered at a conference on teaching and learning research in Canada last spring: “reaching a deep understanding also depends on the amount and quality of the effort put into learning.” But “effort” here has more to do with the strategies applied to study and the organization of the effort than with hours spent on the task or the intensity of the student’s worry about

it. Still, much of the research does come down from the airy reaches of psychology to the homely realities of how real students actually behave. Thus it comes as no surprise that students who reflect a deep approach to their studies are also the students who take greater responsibility for their own learning (self-regulation) and not only continually monitor their own studying, but put forth a more organized effort in it.

Sadly, research has found that it appears to be much easier to move students away from a surface approach to learning than toward a deep approach. As Entwistle also reported, “A deep approach starts, as always, with an intention to work out the meaning for oneself.” What can teachers do to set the stage? A thoroughly thought-out, consistent design of the learning environment constitutes a first step. “Deep approaches depend on designing *teaching, assignments, and assessment* that act *synergistically* to support student learning and understanding,” Entwistle continues, “and that *synergy* is crucial because even one important aspect ‘out of sync’ . . . can impede learning.” Such a design says to students from the outset that learning as understanding remains the primary goal and repeats this message through the way in which its assignments and assessments are linked. Assessments that reward the mere recall of factual knowledge will not encourage deep learning unless accompanied by ones that assess students’ ability to demonstrate understanding of its value by using it. Having every element of the environment reward reflection (and its natural offspring, understanding, as defined concretely in each specific learning project) strongly encourages students to fully perceive and embrace the larger goal of deep learning rather than simple surface achievement. And student perceptions of the environment perhaps as much as any other factor determine the kind and quality of the learning achieved. Entwistle admits: “it is not so much the teaching–learning environment we provide that affects the learning approaches of individual learners, as their *perceptions* of it.” Whatever our success in influencing students overall, individuals will always remain individuals and some will never get it, as teachers have always known.

Still, looking back, while it may have been easier for faculty to just ‘cover the material,’ it was never more exciting or more valuable to the student than going for depth.

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