Dimensions of Educational Quality

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In today's political climate there is considerable talk about improving education by getting rid of poor teachers as a means of improving quality of our schools.

The method of determining effective and ineffective teachers that is being considered seriously in U.S. states and by the federal government is called a value-added model (VAM)[1]. The basic idea behind such a model is to use a statistical procedure to sort out more or less effective teachers based on their students' achievement test scores over several years. Aside from numerous methodological problems of VAMs that make their validity highly questionable[2], the basic logic of this approach is flawed. To use a metaphor, this would be like using the strategy for improving the quality of a restaurant by firing cooks who do not "add value" in terms of profitability.

To continue the metaphor, imagine that we are going to sit down to a meal in a restaurant. A more holistic evaluation of quality could consider 4 dimensions:

1. *Content* of food to be served (e.g., menu of courses; nutritional value of each course; dietary balance within or among courses; quality of ingredients),

2. *Context* of the restaurant in which meals will be eaten (e.g., comfort of seating; cleanliness of facilities; dining atmosphere; adequacy of food preparation area, food storage, and waste disposal),

3. *Process* of experiencing the dining event (actual preparation of meals by chefs or cooks; timeliness of courses served; customer consumption of food and drinking of beverages; service provided by waiters), and

4. *Outcomes* (e.g., satisfied diners, after-effects of meal—no food poisoning, gastritis, or nausea; waiter's tip; leftover food gone to waste; customer

[1] For a non-technical explanation of VAM, see: http://www.cgp.upenn.edu/ope_value.html#8 .
[2] VAMs are highly unstable from year to year, different models yield inconsistent predictions, teacher ratings are affected by the students assigned to them despite statistical attempts to control for prior student achievement and class composition, and such models cannot separate a variety of factors that could explain student achievement beyond their teacher's effectiveness (Newton, et al., 2010). Supplementing VAMs with observations of teachers' classrooms is further problematic. For example, Strong, Gargani & Hacifazlioglu (2011) conducted three experiments demonstrating that observers could not discriminate effective and ineffective teachers any better than at a chance level.

payment for meals; restaurant income sufficient to pay staff wages and benefits, buy food, pay for utilities and rent or mortgage; sufficient numbers of returning and new customers to stay in business).

All of these dimensions are important.

For example, it would be shortsighted to focus solely on the quality of chefs without consideration of the choices on the restaurant's menu and the quality of its dining environment. There are many reasons that customers might not come to the restaurant: they may not like the choices available on the menu due to omission of vegetarian or seafood entrées; they might not like the dining atmosphere in the restaurant because it is dirty, noisy, smoky, too warm, and the seats are uncomfortable; patrons could be dissatisfied with the service by waiters; and they could find that the meals are too expensive for their dining budget.

In short, we could have an excellent chef in this particular restaurant who can prepare excellent meals, but the customers could be dissatisfied with other aspects of the restaurant. So would it make sense to fire the chefs and blame them for customer dissatisfaction? This is not rational as a strategy for improvement.

Now, instead of considering dining in a restaurant, let us turn to education.

Would it make sense to get rid of teachers solely because their students are not meeting academic standards? Yet, this is the conversation going on in many state departments of education in the U.S. who are concerned about improving educational outcomes (Strauss, 2012).

Furthermore, if teachers' students do not meet state standards, state departments of education are developing a strategy for shutting down teacher education programs where the teachers are prepared. Once so-called ineffective teachers are identified through a value-added model, then the next step proposed would be to identify the programs where these ineffective teachers were educated. If "enough" of these teachers were coming from a particular teacher education program, then this would be sufficient grounds to shut down that program.

Surely, an incompetent chef who poorly prepares the meals could be a reason to fire him or her. But to shut down a school where the chef learned the art of cooking also seems irrational.

To continue this line of reasoning, we might want to consider the competence of the owner of the restaurant. Should the owner fire himself or herself?

Similarly, if teachers' students do not meet state standards, should we not also shut down the state department of education who licensed those teachers and the local school boards who hired them? Surely, a state department of education whose schools are failing to advance student achievement should be a sufficient reason to

fire the state department. By using the very same logic for getting rid of poor teachers, state departments and local school boards should all resign if they are not adding value either.

Then the U.S. federal government could take over local school districts. Since NCLB will guarantee that most of our schools will fail by 2014[3], the federal government should also relinquish control of the schools if it too does not add value. Perhaps we should then look to the governments of Singapore or Finland whose students are faring much better on standardized tests that do those in the U.S. They must be doing something right[4].

Perhaps this analogy will have exposed the shortsightedness of current discussions about improving our schools.

Let us now turn to a more holistic approach.

Four Dimensions of Educational Quality

The essence of education is intended, guided learning[5]. When students intend to learn and teachers attempt to guide student learning, then education is occurring. Education is not limited to schooling, but is taken very broadly.

The following dimensions of education can be assessed with respect to quality:

1. *Content*: goals of learning, design of teaching-learning activities, and resources to support those activities;

2. *Context*: environment for teaching and learning;

3. *Process*: what teachers and students do with the content in that context;

4. *Outcomes*: results of what students and teachers learn, sustainability, unanticipated side effects.

[3] Provisions of the *No Child Left Behind* law require that any school will be considered as failing where academic standards are not met by 100 percent of its students by 2014, and will be taken over. See http://www2.ed.gov/policy/elsec/leg/esea02/107-110.pdf .
[4] See Mourshed, Chijioke and Barber (2010).
[5] Steiner (1988), pp. 14-16.

Some Examples

When evaluating the 1st dimension of educational quality, we can evaluate the worthwhileness of *goals* of education according to their epistemic, moral and aesthetic value. After all, one of the most basic questions is: What should be the purpose of education?[6] Very little current discussion appears to be on the goals. What if we are expecting students to achieve the wrong goals?

Similarly, we can consider the *learning tasks* that students are expected to do, how they are sequenced, and whether they are authentic tasks.[7] In other words, what is likely to help students achieve desired goals?

In the 1st dimension we can further evaluate curriculum resources that are made available to students and teachers. For example, the quality of textbooks used in schools should be evaluated. If the textbooks are poor, this would be analogous to a chef in a restaurant who has poor ingredients to work with when preparing meals, and a narrow range of ingredients to use, including lack of ingredients that are associated with a balanced healthy diet.

When considering the 2nd dimension, we can evaluate the environment in which students and their teachers are working. For example, if students feel unsafe, the roof is leaking, windows are broken, and technology is not working, then how can we expect much quality teaching and learning?

When considering the 3rd dimension, we could evaluate the presence or absence of first principles of instruction known to promote learning. We could evaluate student engagement in learning tasks and their success in doing them.[8]

When considering the 4th dimension of educational quality, we can evaluate cognitive, conative and affective learning outcomes as kinds of student achievement:

- Cognition of *that* is knowing of truth.
- Cognition of *how-to* is doing which is worthwhile.
- Cognition of *that-one* is knowing of uniques which are authentic—i.e., grounded in the culture.

- Conation is seeking of truth.
- Conation is seeking of goodness.
- Conation is seeking of beauty.

[6] See Steiner (1981).
[7] See van Merriënboer and Kirschner (2007).
[8] See Merrill (2002) and Frick, et al. (2010).

- Emotion is feeling of order.
- Emotion is feeling of accomplishment.
- Emotion is feeling of unique universals.

In the discussion here, my major contention is that there are many important things that are part of educational quality, not just the quality of those whom we call teachers. For further reading about what constitutes worthwhile education, see Frick (2012).

How Do We Justify Criteria Used in Determining Educational Quality?

If we are going to determine quality, we must have *justifiable criteria* for making such judgments. Hence, philosophical argument is paramount for such justification.

Philosophical argument does not rely on what *is*, but rather what *ought to be*.

Philosophical argument should not rely solely on empirical evidence, for to do so would be to commit the *naturalistic fallacy*. For example, it does not make sense to argue that murder of human beings is morally right, based on the fact that murders are occurring. The ultimate criteria for making such judgments must be based on initial principles that are justified by means other than empirical evidence.

As an example of such criteria for evaluating the quality of education, we could consider the values of *truth*, *goodness* and *beauty*. These fundamental values are derived from rational arguments of Plato, the Greek philosopher.[9]

While religious faith may be a source of fundamental values and can be consistent with those justified rationally, not all religions are in agreement. History is replete with wars and antagonism among followers of different religions.

We seek principles here that any rational being could arrive at—principles that are universal. Followers of different religions should be able to accept these principles as legitimate.

We all should want justice and peace. We should all want the good life.

Summary

While having good teachers is important for quality education, they are only part of what should be considered. The quality of education will not be improved unless we focus on multiple dimensions of education: content, context, process and outcomes.

[9] For example, see *The Republic* (Plato, 350 BC).

References

Frick, T. (2012). The theory of totally integrated education (TIE). Bloomington, IN: Monograph in Four Parts. Retrieved February 14, 2012, from http://educology.indiana.edu/Frick/TIEtheory.pdf .

Frick, T., Chadha, R., Watson and Zlatkovska, E. (2010). Improving Course Evaluations to Improve Instruction and Complex Learning in Higher Education. *Educational Technology Research and Development*, *58*(2), 115-136.

Mourshed, M., Chijioke, C. & Barber, M. (2010). How the world's most improved school systems keep getting better. London: McKinsey & Co. Retrieved July 22, 2010, from: http://ssomckinsey.darbyfilms.com/reports/schools/How-the-Worlds-Most-Improved-School-Systems-Keep-Getting-Better_Download-version_Final.pdf

Merrill, M. D. (2002). First principles of instruction. *Educational Technology Research and Development, 50*(3), 43–59.

Newton, X., Darling-Hammond, L., Haertel, E., & Thomas, E. (2010). Value-added modeling of teacher effectiveness: An exploration of stability across models and contexts. *Educational Policy Analysis Archives, 18* (23). Retrieved February 14, 2012, from http://epaa.asu.edu/ojs/article/view/810 .

Plato (350 BC). *The republic* (Translated by B. Jowett). Cambridge, MA: The Internet Classics Archive. Retrieved Feb. 9, 2012, from http://classics.mit.edu/Plato/republic.html .

Steiner, E. (1988). *Methodology of theory building.* Sydney: Educology Research Associates.

Steiner, E. (1981). *Educology of the free.* New York, New York: Philosophical Library.

Strauss, V. (2012). How the war on teachers is changing the profession. Washington, DC: The Washington Post. Retrieved February 14, 2012, from http://www.washingtonpost.com/blogs/answer-sheet/post/how-the-war-on-teachers-is-changing-the-profession/2012/01/27/gIQAbKyLWQ_blog.html .

Strong, M., Gargani, J. & Hacifazlioglu, Ö. (2011). How do we know a successful teacher when we see one? Experiments in the identification of effective teachers. *Journal of Teacher Education, 62*(4), 367-382.

van Merriënboer, J. & Kirschner, P. (2007). *Ten steps to complex learning: A systematic approach to four-component instructional design*. Hillsdale, NJ: Lawrence Erlbaum Associates.