Raising the Bar for Instructional Outcomes:

Toward Transformative Learning Experiences

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Abstract

Most instructional technologists understand that instruction aims to be effective, efficient, and appealing. These three quality indicators have proven useful in establishing desired outcomes. In this article we suggest an expanded set of indicators, with more attention to social impact, engagement, and the learner's experience. By broadening and deepening our expectations, we hope to encourage more research on instruction leading to powerful or transformative learning.

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Instructional design (ID) as a domain of practice is about designing good instruction – in

Reigeluth's (1983) terms, creating a program or product that is effective, efficient, and appealing.

Effective instruction meets established learning goals and objectives; *efficient* instruction does so

with minimal expenditure of resources, particularly time; and *appealing* instruction draws the

sustained attention and positive response of learners. This simple framework of instructional

outcomes, developed by M. David Merrill and colleagues in the 1970s (e.g., Reigeluth,

Bunderson, & Merrill, 1978; Reigeluth & Merrill, 1979), has proven resilient and valuable for

theorists and practitioners.

Another example of a respected, simple outcomes framework is Kirkpatrick's four levels-

of-impact model for training outcomes (1975, 1987). The basic notion is that outcomes can be

assessed at varying levels, from immediate reaction to objective knowledge assessment to

transfer and application in the job setting – and finally, in business terms, to contribution to the

bottom line through increased work productivity. Briefly comparing Reigeluth's three outcomes

with Kirkpatrick's levels, we see Kirkpatrick's first level relating closely to the "appeal"

construct, his middle levels suggesting the complexity of the effectiveness construct, and his

final level of on-the-job impact relating somewhat to Reigeluth's notion of efficiency.

Kirkpatrick's emphasis is more on job impact and less on detailing the nature of the learning.

In recent years, a critical review of educational practices complicates our notions of

instructional outcomes. Our purpose in this paper is to explore the limitations of traditional

frameworks and to propose a more comprehensive framework for thinking about instructional

outcomes. Our primary audience is the instructional designer – the person charged with

designing a quality lesson, unit, course, or module. We hope other educators would also benefit from further reflection on outcomes of instruction.

Thinking clearly about outcomes is important to instructional-design practice for reasons inherent in the domain itself. A key precept of designing good instruction is staking out clear aims and then designing means for achieving those aims. Or expressed less linearly: Using articulated goals to guide design, we develop a coherent system of goals, learning activities, and assessments. As we improve our scrutiny of outcomes and sharpen terms, we should be able to better define the meaning of quality instruction and in turn achieve higher levels of credibility and rigor. Unfortunately a lack of rigor can adversely affect how we are perceived as a profession. As David Merrill noted recently (Merrill & Wilson, 2007), everybody thinks they know what good instruction is, and everyone thinks they're an instructional designer – by virtue of their own experiences in innumerable classrooms and courses (cf. also Lortie, 1975). Before we can rise above this questioning of expertise, we need to sharpen our notions of intended outcomes for instruction.

Acknowledging the Complexity

Complicating the issue is the proliferation of mandated assessments and outcomes, and the myriad implicit outcomes expected of instructional settings. A typical instructional unit in a North American middle-school science classroom, to take an example, will have a number of fundamental goals and requirements attached to it, including:

- Meeting the learning objective of the unit – typically expressed in behavioral terms of knowledge and skill acquisition

- Addressing key science standards as dictated by state and federal legislation

- Preparing students for mandated assessments in science and core outcomes of literacy and numeracy

- Preparing students to succeed at the next curriculum level, which may use current outcomes as prerequisites

But then consider the complex nature of classrooms, and additional goals emerge, such as:

- Babysitting the kids – you can't dismiss the class just because today's learning objective was achieved

- Teaching middle-schoolers to be civilized and compliant learners within the school system

- Helping a mainstreamed special education student meet her IEP (individualized plan of study), diverging from the standard unit objectives

- Assisting an immigrant child avoid total confusion and isolation, and become integrated successfully into learning activities

- Finding a way to challenge the gifted student who already knows more about the unit than you do

- Strengthening a trusting relationship with a particular child in need

Considering the longer term, even more goals should be borne in mind, such as:

- Developing personal responsibility and study skills critical to success in high school, college, and adult life

- Infusing democratic values of respect for individuals, shared decision-making, and inclusion of diverse perspectives

- Guarding against the mindless perpetuation of privilege and class through school tracking, surface-level diagnostics, and unfair resource allocation

- Helping students find the inherent passion and joy attached to scientific forms of reasoning and discovery – which in turn may lead to career choices

This same exercise could be done at nearly any level or setting, with very similar results. For example, in a new-hire training event for sales professionals in a large corporate enterprise the fundamental goals are to convey sufficient product knowledge and develop marketing skills necessary to be successful on the job. But at the same time, such an event is meant to acculturate new employees into the organization—to instill cultural values and pride that will motivate workers to perform in desired ways and at the desired level. Because the organization is likely to strive for workplace diversity, the training will be designed for people with widely varying social and educational backgrounds, helping them develop the skills and values needed to function as a team.

The point is, lessons and modules will inevitably focus on a few key outcomes, but the true needs and goals of instruction are nuanced and complex:

- Instruction has many goals or intended outcomes, some explicit and others implicit, but all are important to the functioning of the instructional system

- Modern classrooms – particularly those adopting learner-centered teaching methods – accommodate multiple clusters of activity, including much self-directed and small-group activity that leads to varied learning outcomes.

- Learners themselves are hugely diverse and varied in their needs, in turn affecting the instructional outcomes that may be appropriate for them. Increasingly learners demand greater accommodation to their learning needs and preferences (see de Castell & Jenson, 2004).

Many readers, acknowledging the complexity of real-life instructional settings, are likely asking at this point: But how do we prioritize, how do we manage the complexity? How can we acknowledge all the nuances without being paralyzed by the complexity of the situation? These questions are key to any framework of instructional outcomes, and touch on core issues of how we evaluate instruction – what is good instruction, fundamentally?

<p style="text-align:center">Effectiveness – Good Enough?</p>

Consider again the three classic descriptors of instruction: effective, efficient, and appealing. The construct of effectiveness considers *what* and *how much* – and *on what level* – the material was learned. Effective instruction "must be measured in relation to the goals and objectives of the instruction" (Reigeluth & Merrill, 1979, p. 21). Ultimately effectiveness depends on the quality of those goals and objectives. But what if the goals are under-analyzed or poorly articulated – or incomplete, as they always are at least to some extent? What if they are inadequate or even damaging in some way? Who evaluates the goals?

There should be a way to determine instructional quality independent of predetermined goals. We suggest a simple expansion of Reigeluth's framework by adding a fourth descriptor:

> *Good* instruction – leads learners to valued ends (valued by society, the sponsoring institution, and the individual learner) while minimizing any negative impacts

> 'Good' here is a synonym for *socially just and valuable* – instruction that, taken as a whole, has healthy consequences. Instruction as an intervention can thus be seen as a tool for accomplishing a valued end. All interventions – tools, technologies, programs, etc. – have both positive and negative impacts, some foreseen and some a surprise. These can be expressed as consequences, impacts, outcomes, or as costs and benefits. By focusing on *good* instruction, we are acknowledging:

- *The limits of analysis*. We can't analyze, capture, and predetermine all consequences of an intervention.

- *The multiplicity of goals*. Instruction always carries with it many unstated goals, some of which are considered only during delivery, if at all.

- *The diversity of learners*. In the end, instruction is largely about individual growth, requiring individual criteria for success.

We suggest that educators take a *pragmatic* approach to evaluation. Determining the worth of a thing should not be constrained by the stated goals of its initial design; rather, an evaluation should be open to all observed impacts – planned and emergent, positive and negative, short and long term.

But how do we know to look for unanticipated impacts when by definition we *aren't* looking for them? And what is the calculus for combining competing values and impacts, to determine if instruction is "good" or "bad"? Isn't that presumptuous, to even use normative, good/bad language to speak of something so ineffable and complex? We respond with the following points:

- *Some separation between stated goals and observed outcomes is healthy and desirable*. Stated goals can have a powerful blinding effect, blocking from view consideration of other factors that can have potentially large impacts. Instruction should be judged not simply on achievement of stated goals, but on a somewhat independent scale of impacts. For this reason Scriven (1972) promoted the idea of "goal-free" evaluation – intentionally blinding evaluators to official project goals in favor of observed impacts and outcomes.

- *Judging goodness is a holistic appraisal, requiring systemic thinking and qualitative understanding*. An evaluation of instruction needs to be open to any and all forms of

evidence or support, particularly of impacts and outcomes, but also of processes and mechanisms.

- *Evaluation of instructional outcomes should be an inclusive conversation*. Ideally, all interested parties should have a voice and a place at the table as outcomes are prioritized and evaluated. This may include exceptional or marginalized learners; workers expected to apply skills and perform on the job; and clients or consumers of a company's products and services. At a minimum, these varied interests should be carefully considered when establishing criteria and demonstrating value.

- *Instruction needs to be evaluated in the context of larger societal and system needs*. A course may succeed in conveying a fairly standard set of technical outcomes, but perpetuate inequities among certain learners, fail to meet other needed outcomes, or close students' minds to future learning experiences. A high-school AP calculus course may, for example, average high scores on the year-end exam. But if 90% of Hispanics in the school are denied access to the course, we have a problem. Or if 90% of the boys pass the exam with only 50% of the girls – another problem. And if the only way most students can succeed is by dropping extracurricular activities or quitting a needed job, we have to question the value of course success.

- *Real-world instructional design is not a rigid, step-by-step procedure that begins with fully defined goals and never deviates from predetermined models.* Complex environments and learning needs need to be matched with flexible procedures for design. We also need reminders that design activity happens prior, during, and following delivery. Instructors are not just implementers of prior design decisions, but participate in

the ongoing adjustments needed to meet the human needs of participants, and assure the quality of outcomes.

We appreciate designers' reluctance to adopt good/bad terminology. Use of the terms can be seen as a sign of arrogance or naïveté. We see a need, however, for *more* evaluation and reflection at a holistic, truly evaluative level. *Too often the goals of ID-developed courses lack ambition and perspective.* They may satisfy technical aims but fail in important social, political, or community ways. Often they work from an impoverished model of knowledge or expertise, leaving learners unprepared to fully integrate new practices into their lives. Or through subtle forms of coercion, they may not leave room for learners to make real choices and "own" the learning experience.

Like all professionals, instructional designers must establish normative standards of practice and create models and frameworks to guide that practice. We need to own up to this imperative, rather than hide behind technical frameworks whose net effect is to suggest that value judgments and decisions are beyond our reach. We need to squarely face the complex sociopolitical structures in which our designs exist.

Deeper Learning Impacts

In the preceding section, we expanded the notion of effectiveness by adding instructional *goodness* to account for outcomes that meet values-based considerations. In this section, we revisit *effectiveness* and *appeal*, and suggest paths to deeper learning impacts.

Increasingly, it seems, examples of outstanding instruction are hard to find. The rarity of high-quality instruction can be damaging, given the strong pressures to produce mediocre instructional products based on templates and preexisting content. If instructional designers are merely hired to quickly convert content from technical manuals by applying templates and rules,

the reputation of the profession could be at stake. Articulating the features of truly outstanding

instruction is a good step in combating this tendency toward mediocrity.

David Wong (Wong & Jenrisksen, no date) invokes the notion of the "living dead" in

describing the impact of much public education in the United States – high-school students

walking like zombies from class to class, not really alive, but still walking. If instruction can

foster such a frightening response, we may need to look for ways to resuscitate these students

and redeem their poor lost souls!

Gordon Rowland (Rowland & DiVasto, 2001; Rowland, Hetherington, & Raasch, 2002;

Rowland, Lederhouse, & Satterfield, 2004) and Brent Wilson (Wilson, Switzer, Parrish, & the

IDEAL Research Lab, 2006) have worked with colleagues to articulate constructs of powerful or

transformative learning experiences, resulting from deeply engaging instruction that learners

consider pivotal or highly impacting in their lives. Wilson et al. (2006) define transformative

learning experience using three indicators:

- *Lasting impression*. The learner holds in memory details about the learning experience.
- *Part of the person's self-narrative*. The learner references the learning experience within

  a narrative about themselves or their relation to a subject matter of importance to them.
- *Behavioral impact*. The learner can point to specific changes in their lives as a result of

  the learning experience.

This deeper form of learning impact moves far beyond *appeal*, and involves the person's

whole identity and response, including affect, emotion, and will (cf. Reeves, 2006 and Wong, in

press).

Consistent with this shift, David Merrill (in press) has recently revisited the notion of

appeal and replaced it with *engagement*, leading to the *three e's* of effectiveness, efficiency, and

engagement. Because engagement suggests a deeper and more complex relationship to a learning experience, we are happy to embrace this change and to revise our framework accordingly. While appeal suggests merely the ability to draw learners to the experience (a unidirectional force), engagement suggests a reciprocating relationship that changes the nature of the experience. Rather than just being sufficiently attracted to pay attention, learners invest creative effort and emotional commitment—and a willingness to risk in anticipation of valued outcomes.

More than most instruction, transformative learning is not under the full control of the designer, but rather requires a combination of careful guidance within crafted learning environments and learners who are ready and willing to become passionately engaged. Nonetheless, the goal of creating transformative learning experiences can be a worthwhile pursuit, even if not routinely attainable for all learners. Wilson and colleagues suggest a multidimensional approach involving the following three dimensions:

- *Cognitive design*. Designers apply principles of cognition to guide thinking processes toward desired learning outcomes. A cognitive design includes attention to learners' actions and behavior, cognitive load, social interactions, motivation, and their active efforts to construct meaningful understanding of the instructional materials.

- *Aesthetic design*. The designer thinks of instruction as an aesthetic medium in need of careful crafting and shaping, much like a work of art. The designer seeks a heightened immediate experience similar to one's encounter with a work of art – except that in the case of instruction, the explicit purpose is to help learners take on new knowledge, skills, and identities.

- *Mythic design*. Designers approach instruction as a mythic journey, encompassing high-risk exploration and struggle, followed by a resolution and return home with a new gift.

The learner's progress is guided by a master who provides keys and knowledge at critical

junctures. Designers use the language of rites, symbols, and narrative to convey a sense

of deep experience. The journey necessarily takes on an element of risk and

transgression, followed by reconciliation and service.

Our present knowledge base for design focuses heavily on the first kind of design,

neglecting aesthetic and mythic aspects of the intended learning experience. To achieve anything

more than what rule-based instruction will deliver, we need a change in thinking that

acknowledges and encourages creative, holistic, and risk-taking forms of design (cf. Gustafson &

Branch, 1997).

An example of deeply engaging learning with the potential to transform learners would

be an undergraduate course, where learners work in teams to respond to a real-life challenge.

Joni Dunlap (2005) examined such a capstone course and found its impact on students to be

profound as they transitioned from student to professional identity. Central to her design were

aesthetic concerns such as

- The creation of an *immersive context* (the real-life project with all its attending details)

- Provision of a *consummation* to their coursework through a rich application of their

  learning

- A focus on *holistic* learning activity that embodies content rather than merely providing

  new content

- A willingness to allow learners the freedom to be protagonists in an adventure they

  themselves navigate

- The instructor's role as guide or supportive character in the unfolding narrative of the

  project, rather than just "teacher" (Parrish, in press).

Wilson et al. (2006) report a similar design of Scott Switzer's management course for instructional designers – which also had a significant impact on students entering a profession. Scott saw the structure of his course as beckoning learners to undertake a hero's journey into peril with the potential of eventual reward. He viewed his own role as similar to the "master guide" that accompanies the hero in many mythical journeys, offering wisdom and a degree of prescience, yet distanced from the material world to the degree that little substantial help can be provided to the hero (Campbell, 1949). The course was project-based like Dunlap's course described above, but in this case it was a bounded learning scenario that provided the safety of a fictional, yet richly detailed, challenge.

Such courses are more than repositories of effective cognitive teaching strategies – if carefully designed, they draw on aesthetic structures and mythic archetypes to craft an experience that affects the whole person, changing knowledge and skill levels, but also the way students think of themselves.

From an aesthetic perspective, these two capstone courses would be approached in a different way from traditional cognitive design. The learning experience would be closely considered at all stages from planning, delivery, and evaluation. To aid in making early design decisions, designers might develop a *design story* , empathetically visioning a set of imagined learners complete with bios and histories, and trace them through the whole experience. Instructors would seek continuing input concerning the quality of learners' ongoing experience and adjust course activities based on that ongoing conversation. In the case of adult learners, input into activities and designs would often be substantial. Student assessment would tend toward authentic projects and products, and observations of work. Formative evaluation of instruction would look for evidence of deep engagement and growing impact on learners.

A mythic design might seek to structure the capstone courses as final rites of passage required of inductees into a profession. Enriching this mythic journey would be a variety of symbols and gestures to highlight the meaning and significance of the work – e.g., team names, real clients for projects, audiences for presentations, prestigious judges of project work, and a concluding party for the successful inductees. Attention to this detail goes beyond a typical cognitive design, but can deepen and enrich the experience and encourage the transformation of learners' identities.

Russell Osguthorpe (2006) invited consideration of a neglected form of learning: the kind that *grows* rather than fades with memory or lack of use. In contrast with most forms of learning experience, this kind yields continuing dividends through a change in identity, schema, or fundamental practices. The initial inquiry of Rowland and Wilson is consistent with Osguthorpe's notion of expanding learning, as learners assume personal responsibility and commit to a self-directed plan of continuing study.

At this point our expanded scheme for instructional outcomes has added a fifth element:

- Effective instruction – meets the targeted goals of knowledge, skill, and attitude
- Efficient instruction – does so in a cost-effective and timely way
- *Engaging* instruction – challenges learners to respond through meaningful activity
- *Good* instruction – leads learners to valued ends while minimizing any negative impacts
- *Transforming* instruction – encourages deeply engaging experiences that can potentially transform identities and practices

A graphic representation would look something like Figure 1 below.

Figure 1. An expanding set of instructional outcomes.

Qualities of effective, efficient, and engaging instruction contribute to the often implicit but critically important quality of goodness. Achieving instruction that engages learners at a deeper level and leads to personal transformation happens less often, and is based on cumulative qualities in all areas.

Instructional designers who competently practice their craft and are well versed in the literature may express hesitation about these added descriptors of instructional outcomes. But that is precisely the point – Until we acknowledge and are willing to openly discuss instructional outcomes in a more ambitious way, we cannot hope to raise the standard of expectation regarding instructional quality. We need to take our own risky journey toward a broader conceptual base, and then articulate more completely what goes into good instruction, or transforming instruction. Commitment to truly outstanding quality then may have the potential to arouse the passion and commitment of a new generation of designers, committed to excellence in a way that their forbearers only guessed at.

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