Scaling up as catachresis

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The metaphor of scaling up is the wrong one to use for describing and prescribing educational change. Many of the strategies being employed to achieve scaling up are counter-productive: they conceive of practitioners as delivery agents or consumers, rather than as co-constructors of change. An approach to educational innovation based on the concept of taking local innovations to scale carries the danger of turning schools into franchises and of reducing the global diversity of educational ideas. Sound educational ideas get scaled up not only (or primarily) through a linear, top-down model that begins with a laboratory test and ends with a road show of workshops and training sessions. They also get scaled up—in the sense of disseminated and then adapted in ways that change practice—through researchers sharing with practitioners thickly described, contextualized examples of innovative practices and then inviting practitioners to decide how best to adapt these innovative practices for their local settings.

Introduction

Scaling up, when used in education circles to refer to strategies for taking a curricular or pedagogic innovation that has been shown to be effective in a particular setting and to apply it on a large scale, is a metaphor. As is the case with all figures of speech, using the metaphor of scaling up is an expression of ideology and an enactment of power. The metaphor of scaling up reflects a particular worldview that in turn supports an agenda, a particular approach to addressing educational problems.

The literal, original meaning of scaling up is: 'An increase according to a fixed ratio; A mechanical method of copying a small sculpture on a larger scale by increasing all the measurements proportionately, using such measuring devices as a scaling board, caliper, or pointing machine'. This art term was in turn picked up by commerce and industry, where it came to mean 'the conversion of an industrial process from a small laboratory setup to a large commercial endeavor'. When used to conceptualize a strategy for expanding the range of an educational innovation, scaling up is a secondary

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metaphor, a metaphor once removed—an art term taken up first by commerce and now by education.

The argument of this paper is that scaling up is not just a metaphor, but also a catachresis. Contemporary dictionaries (for example Encarta, 1999) define catachresis as 'an incorrect use of words, for example by mixing metaphors or applying terminology wrongly'. But I am using the term catachresis here more in the sense of its meaning in classical rhetoric as a forced metaphor, or as the introduction or imposition of language borrowed from one discursive world into another discursive space. Examples of catachresis would be to talk about a medical condition using juridical language (as in 'I went to get my biopsy results and my doctor gave me a death sentence') or to use sports language to talk about war ('We ran an end run around the Iraqi defenses') or war language to talk about sports ('They back line defended heroically again repeated assaults on goal').

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Scaling up referred originally to techniques for mechanically reproducing an image or object in larger size and then secondarily to strategies pursued by manufacturers to dramatically increase their level of production (for example, going from a prototype to 10,000 units rolling off an assembly line). The original and secondary meanings, then, refer to the manipulation of objects that can be accurately reproduced in greater size or in greater quantities. But do educational innovations work like this? Should they? Are they 'scale-upable' (or is it 'upscalable'?) in the same way as a statue or a gasket?

It could be argued that we in education are not stuck with the original meanings of scaling up. If we (re)define scaling up to mean to take an idea that has been shown to work well in one setting and introduce it to other settings, it sounds unproblematic and seems to offer a useful strategy for educational improvement. But a less positive view of scaling up would view it as a version of standardization and regularization of education or worse, to introduce a catachresis of my own, as a sort of academic franchising. We all know of stories of a successful local business, such as a neighborhood restaurant, that builds up such a loyal and growing customer base that the owner decides to open a second location or even to turn the business into a franchise operation. Sometimes these ventures work, other times they do not. Sometimes, as in the case of Starbucks, which started out as a Seattle neighborhood coffee shop, franchising works spectacularly well, in the sense of spreading not just nationally but globally. However as a business such as Starbucks becomes a franchise, it risks losing its original ethos, which was tied to the particular local context (rainy, arty, chatty, strong coffee-drinking Seattle). And as it spreads to city after city and country after country, it drives out of business smaller, local businesses that are more reflective of their local context.

I do not intend to reproduce here the anti-globalization arguments that lead protestors to disrupt IMF meetings and Frenchmen to vilify McDonalds, Disney and Starbucks. There are some attractive features of franchises—think of Holiday Inn's promise of 'No surprises' and of the pleasure being able to get a cappuccino or a latte in cities with no coffee-drinking tradition. There are ways in which scaling up an educational innovation is unlike restaurant franchising. And yet I pursue this

metaphor, I introduce this catachresis, in an attempt to complicate what I feel is the too sanguine and optimistic discourse of scaling up currently circulating in educational discourse.

The franchiser/franchisee relationship

Discussions of scaling up by educational policy-makers and curriculum developers are generally cautious, not in terms of expressing ambivalence about what can be gained from successful scaling up, but in terms of somber assessments of the inherently difficulty of the task. Thoughtful discussions of scaling up include reflection on the problems of bringing promising innovations to scale and sharing of strategies for how these problems can be overcome.

In such discussions—I'm thinking specifically of a talk given by Robert Slavin last year to the National Academies Committee on Research in Education panel on which I serve—the key issues addressed are how to scale up while maintaining quality control and overcoming local resistance and misunderstanding. As Slavin explained in his talk:

> A lot of the intellectual background to Success For All came from this experience with cooperative learning where we felt as though it was going to be necessary to design programs that had a great deal of imbedded professional development that was going to have to provide materials for children, manuals for teachers, videos showing how this stuff was going to work, extensive, not only training, but follow-up and coaching to help teachers implement complex strategies. Something that was going to enable teachers to genuinely change their behavior and keep it changed over a long period of time. This forced us in following along this line of thinking, it forced us to some hard decisions in terms of designing a program that could be replicated from the outset, doing careful evaluations of that program, but also being willing to build a staff and build an operation to support quality implementation of a very complex program. And so we did that bit by bit, working within John Hopkins University until 1998, and then got too big and split off a separate non-profit foundation called the Success For All Foundation, to provide this level of training, materials, follow-up, and so on as well as continuing the research.

He also stated:

> Educators will proceduralize anything and you've got to watch, your own people will proceduralize things if you're not watching carefully and move away from the purpose of what you're doing toward the outward appearance of what you're trying to do. (Slavin,)

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The core of the problem Slavin is describing here is a quality control issue of the type familiar to the manager of a restaurant that he or she decides to turn into a franchise. The problems are familiar: how do you get your franchisees to follow the spirit rather than the letter of the recipes; to match the quality and taste of the original while purchasing supplies from local merchants; to adjust their menus and service to their local market without losing the 'feel' of the restaurant concept you developed. As you scale up, how do you communicate to your franchisees not only your recipes, menus and procedures but also—and more importantly—your vision? Because the franchisees cannot, at least at first, be trusted to appreciate the core purpose or vision, they

must be made to attend carefully to procedures—to reproduce the innovation faithfully, detail by detail, even if they do not yet fully understand or wholeheartedly buy into the underlying rationale and assumptions.

Things and ideas that can and cannot be scaled up

In his book *Science in action: how to follow scientists and engineers through society*, Bruno Latour suggests that the challenge to technoscience is 'how to operate at a distance on unfamiliar events, places and people'. This is achieved, he argues by:

> Bringing home these events, places and people … by inventing means that (a) render them *mobile* so they can be brought back; (b) keep them *stable* so that they can be moved back and forth without additional distortion, corruption or decay; and (c) are *combinable* so that whatever stuff they are made of, they can be cumulated, aggregated, or shuffled like a pack of cards. If those conditions are met, then … an obscure laboratory, or a puny little company in a garage that were at first as weak as any other place will become centres dominating at a distance many other places. (p. 223)

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Latour introduces the notion that ideas or processes that are able to operate outside of their original context will inevitably compete with and even drive into extinction ideas and processes that cannot be generalized. Latour suggests that there are two different kinds of scientific knowledges: the local and the universal. The universal types, such as the Linnean botanical classificatory scheme, are not necessarily better science than the local types (such as the Hawaiian ethnobotanical schema)—but they spread more successfully not just because they are pushed by more powerful forces (colonialists, multinational businesses, prestigious universities, etc) but also because they are less dependent on context. Indeed, it is precisely their relative lack of context dependency that makes them attractive in the first place to colonial powers (who were the franchisers of their era). The science of, for instance, the eighteenth century British colonizers of the tropics worked by ignoring or assimilating rather than acknowledging or learning from local meanings (Tobin, 1999). A religion featuring gods that belong to particular valleys, such as many of the deities of the Hawaiians, could not become a world religion as could a religion like Christianity, which featured a god who is omniscient, who belongs to no one place and has wisdom for people, in all times, in all places.

The argument I am making here is once more in the form of a catachresis: a cost of scaling up in education will be that local approaches that are well adapted to their local context will be driven into extinction/colonized/put out of business by ideas and programs that are less context dependent.

How good ideas from other countries get scaled up domestically

Educational innovations from abroad at times catch on in a big way at home. This is not quite the same thing as scaling up a domestic educational innovation, but the issues are similar enough that it is a comparison worth pursuing. The field of applied comparative education can help us better understand the dynamics of scaling up just

as scaling up can help us understand the potential and perils of trying to apply a foreign educational concept domestically. Because my field is comparative early childhood education, this is where I'll take my examples.

The obvious one in my field is the approach to early childhood education of Reggio Emilia, Italy. 'Reggio', as it is usually called by its foreign admirers, is fantastically popular these days among early childhood educators throughout Europe, North America and Asia. They know about Reggio from books, from workshops, from a traveling show of artwork produced by Reggio students and from pilgrimages thousands of foreign early childhood educators have made to the town of Reggio to see its preschools. I have no doubt that Reggio Emilia has excellent preschools. But the first irony I want to point out is that so do lots of other preschools in other Italian regions and in other countries, preschools that receive little or no outside attention. This raises the question of what has made Reggio so 'upscalable' while interesting and potentially useful early childhood educational ideas from, for instance France, Japan or China, have failed to catch on internationally? I will attempt to give an adequate answer to this complicated question but I will suggest that reasons that contribute to Reggio's success in the US include:

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- Italy has a tradition recognized internationally of having great ideas about early childhood education (think Montessori).
- Tourists like visiting that part of Italy, which is beautiful and has appetizing food (think Multi Mario on the food channel).
- Reggio's curriculum emphasizes aesthetic tastes that are highly consistent with those of the mostly middle class educators who visit.

I don't mean to be overly cynical about Reggio, which for many reasons I admire. My cynicism about Reggio's international spread is matched by the cynicism of many Italian educators, including many involved with Reggio. My colleague Rebecca New, who knows Reggio as well or better than any other foreigner, points out that the Italian take on all this foreign excitement about Reggio Emilia is that Reggio has great preschools—but so do many other Italian cities. She argues that Italians in other cities would no more try to copy ('scale up') Reggio Emilia's preschools than they would give up their local cheeses or wines for those made in Parma or Umbria. (Like me, Becky New does not shy away from employing catachreses to make a point.) What makes Reggio so special is the same thing that makes Italian wines and cheeses so special—each reflects the locale where they are made. This does not mean that they cannot be consumed or enjoyed outside their region. But it does mean that (a) they can't be mass consumed (scaled up) without risking losing what makes them special in the first place; and (b) that they should be consumed alongside of rather than in place of locally made products. This brings me to the other great irony about Reggio (which again I take from New): one of the core, perhaps *the* core idea behind the Reggio Emilia preschools is that they are based on a deep connection between the school staff and the larger community. Parent and community involvement is key and ongoing. And this involvement reflects the socialist political beliefs of the city, the parents, and the teachers and administrators. But what happens to the socialist

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principles that provide the moral foundation to Reggio's approach when Reggio comes to the US? Reggio gets stripped of its politics, of its socialism, of the elements that are objectionable to many Americans, and what gets embraced are those parts of Reggio most attractive to American middle class sensibilities.

The argument from Reggio suggests that there are two ways in which innovations from abroad can be adopted domestically: either through being contextless ideas that can spread, like Christianity, Linnean botany and the assembly line, under the aegis of powerful government agencies or multinational corporations; or by being stripped of their contextual particularities and then remade abroad, so what gets 'scaled up' is not the innovation that was effective in the first place. In other words, the problem is, what is the 'it' that gets scaled up? Which parts of the innovation are core and not be to changed, and which parts adaptable or unimportant?

I am aware that my argument can by challenged by the suggestion that these problems of adaptation are much more acute when a program or idea is implemented across national or cultural boundaries then when it is scaled up within national borders. I agree. But I knowingly have chosen an international case (the global spread of Reggio Emilia ideas about early childhood education) to draw attention to the problem of context, a problem that is explicit in cross-cultural encounters but that remains implicit and yet always present in the movement of ideas and programs within a nation. In other words, I am suggesting that those educational ideas that get scaled up or that become global sensations are either ideas that have little context dependence in the first place (for example, the High Scope early childhood curriculum) or that rid themselves of their most contextualized features or have these features stripped from them when they go overseas—processes Japanese sociologists call 'glocalization' and 'cultural deodorization' (c.f. Iwabuchi, 2004; Tobin, 2004).

Turning the politics and pedagogy of scaling up on its head

I have sounded some cynical notes here, but my position on the possibility of fruitful educational borrowing is optimistic. I think there are ways that educational programs and ideas that have been shown to work well on a small scale in particular locales and contexts can be usefully shared and adapted elsewhere. I do not intend for the questioning of scaling up I have done in this paper to become a xenophobic call for every school or classroom in the US to be intellectually self-contained or for school districts to look only inward, to their local community for ideas. But if we want promising educational innovations developed in local contexts to be taken up more widely, we need to reverse the hierarchical dynamics I described above as characterizing the power and pedagogy of most scaling up efforts.

Scaling up too often follows the pattern in which a researcher demonstrates statistically that an innovation works in a particular setting, and then and only then begins to think about how to convince teachers and administrators elsewhere to implement it. Instead of thinking of scaling up as a linear process that begins with an educational innovation designed by a researcher who documents the effectiveness of the program and then develops a dissemination plan, I suggest that would be

educational innovators should foreground the goal of dissemination. This means that in choosing which problems to study, where to do the original field testing, what sorts of research methods to use, and what sort of data to collect, the audience—those whose cooperation and commitment will be critical to implementation, must be considered from the very start. We should begin with the questions 'what are the problems local communities want answered' and 'what sorts of evidence will this audience find persuasive?'

This perspective presents various implications. When engaged in research on an innovation we hope to scale up, if the research methods used produce only quantitative measures of outcomes, it will be hard to present the innovation to teachers and administrators in a way they will find adequately convincing or nuanced to justify their changing their practice. Practitioners will not willingly give up practices they believe to be best unless and until they see what a promising innovation looks like in action. They will need to understand the contextual features of the original site where the innovation was developed and tested so they can decide for themselves which features are context dependent and which context free. The presentation of a new program will need to ring true to practitioners to be convincing, which means it needs to be presented as having weaknesses as well as strengths, as having features that sometime go wrong as well as right. Nothing that claims to work easily or all the time will ring true.

Specifically, what this might mean for research methods employed to study an innovation that hopes to scale up is that these studies include the use of videotapes. I'm thinking here not primarily of training videos produced after the research portion of the project is over, but instead of a multidimensional research approach that includes the shooting of videos as a key component of the original research effort. Watching a videotape of a new approach to teaching allows practitioners to see what the intervention looks like in context and to decide for themselves how it would need to be modified for their setting. More generally, the principle here is that instead of making innovations teacher-proof, we should make them transparent, accessible, and transmutable. Practitioners should know why and how an innovation is intended to work. The shell of the innovation needs to be pulled back to expose the inner workings. Innovations should be presented in modular form, or in different versions, to allow practitioners to modify and localize the innovation, and to more readily combine the innovation with other domains of their practice.

But these recommendations do not go far enough, or really get to the heart of the problem. I have been suggesting strategies for how developers of educational innovations can disseminate their projects in less hierarchical, more audience-centered ways. But what is really needed is a reversal of the locus of control. The core of the problem is that the metaphor/catachresis of scaling up conceptualizes processes of change from the perspective of the core producers rather than the peripheral users of educational innovations. What is needed is an approach that would turn the franchising/colonist model on its head, and that would begin and end with practitioners, who would have the major say about the innovations that want to see tried and evaluated and about the kinds of data they will find most convincing.

To introduce another catachresis, the distinction I am making here is like the difference between broadcast television and the Internet. Broadcasters can be sensitive to the needs and desires of their audience and we viewers of network television have the power to change the channel or even to turn off the set. But this is far less control than we enjoy when we surf the Web. An advantage of the Web over broadcasting is that it is more interactive and heterogeneous, allowing users a greater opportunity to be agentic and to individualize content. Scaling up is a kind of educational broadcasting, in that it assumes a hierarchical, binary relationship between the few who produce and the many who consume a relatively small amount of content, as opposed to other approaches to disseminating educational ideas which are more Web-like, in constructing networks for the exchange of ideas among practitioners. The current administration's decision to close down the old ERIC Clearinghouses in part because they made available to practitioners too much information—including information based on flawed research—and to introduce the What Works Clearinghouse—which is designed to guide practitioners to only those interventions that have been proven by scientific research to be effective—reflects a similar hierarchical view of knowledge dissemination.

Reconceptualizing the domestic impacts of international comparative research

As noted above, because of the importance of context, few innovations developed abroad have the potential to be scaled up domestically. But this does not mean that there is nothing to be gained from studying education internationally. Instead of or in addition to thinking of the spread of educational ideas and practices as occurring via processes of scaling up, I find it more useful to think of research, both international and domestic, as having the potential to leverage change by questioning taken for granted assumptions and by expanding the repertoire of the possible.

I will give examples of these two processes from my own work on preschool education in different cultures. The most talked about issue raised by our original Preschool in Three Cultures study, conducted in the mid-1980s, was the practice of some Japanese preschool teachers of choosing to not intervene in children's fights. I know of no American preschool teacher who has seen our Japan videotape or read our book that ends up adopting this non-interventionist approach to dealing with children's fights, but I know of many early childhood educators in the US who have told me that as a result of considering the arguments we present for the Japanese approach, they count to 10 before intervening in disputes. This hesitation, which I see as a good thing, results from what I am calling the power of research to question taken-for-granted assumptions and in this way change practice.

With my colleagues Yeh Hsueh and Mayumi Karasawa I am now engaged in a sequel to the original study, a project called Continuity and Change in Preschool in Three Cultures. In the new study, we videotaped a scene in a Japanese child centre in which, after lunch, five of the children from the older class go to the infant and toddler room to assist the teachers. In the video we see five-year-old Kenichi walk

with two-year-old Daisuke to the toilet. Kenichi positions Daisuke in front on the urinal, pulls up his shirt so it is clear of the flow, and urges him '*Oshiko nasai*' ('Pee, please'). The younger boy does as he is told. Kenichi asks Daisuke if 'it all came out' and then says, 'Now let's flush'. At the sound of the flush, both boys act startled, and then laugh. When we showed this tape to the staff at Komatsudani Hoikuen where the videotape was shot, they explained that the purpose of this and other instances where older children care for younger ones is primarily to provide the older children with an opportunity missing too often in contemporary Japanese life to develop *omoiyari* (which means something close to the English word empathy).

   I don't expect that American early childhood educators who watch our new video-tape will scale up this Japanese intervention and start having the five-year-olds teach the two-year-olds how to use a urinal. Although there are many good reasons for doing so (including the fact that female teachers find it awkward to instruct young boys on the art of aiming one's penis—this is something more easily passed down from one male to another), this Japanese idea won't catch on widely in the US because it runs afoul of contemporary anxieties about child abuse and fears of litigation. But the innovation here is not the pee lesson per se. It is an appreciation for the importance of a curriculum that gives emphasis to empathy, and the idea that this can be achieved through having a time each day when older children help take care of younger ones. This is an example of what I mean by the power of comparative, international research to ''expand the repertoire of the possible'.

Conclusion

The perception in the US of widespread poor quality instruction, curriculum and administration, coupled with frustration that practices that have been shown to be effective ('what works') are not embraced by local communities and the perception that in education, unlike medicine, there is no national consensus on best practice, makes the idea of scaling up educational innovations attractive to educational leaders and policy-makers. While I sympathize with the goals of sharing lessons learned in other communities and disseminating innovations, I have argued in this paper that the metaphor of scaling up is the wrong one to use for describing or prescribing educational change and many of the strategies being employed to achieve scaling up are counter-productive and even dangerous. The problem with the strategies is that they are too vertical and that they conceive of practitioners as delivery agents or consumers, rather than as co-constructors of change. Sound educational ideas get scaled up not only or primarily through a linear, top-down model that begins with a laboratory test and ends with a road show of workshops and training sessions. They also get scaled up, in the sense of disseminated and then adapted in ways that change practice, through the engagement of practitioners with thickly described examples of innovative practices. An approach to educational innovation based on the notion of taking local innovations to scale carries the danger of turning schools into franchises and of reducing the global diversity of educational ideas.
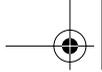
I'll conclude with two final catachreses. The loss of educational diversity should concern us in much the same way as does the loss of local ecosystems or of endangered species. If scaling up works domestically or internationally, it will mean that a large number of educational strategies will be reduced to a much smaller number. If we reduce our nations' and the world's educational diversity we will be less able and ready to adjust to unanticipated new conditions and challenges.

To switch catachreses midstream, if we are to conceive of education as a marketplace, we need to be more explicit about the rights of consumers and the fragility of local industries. We need consumer protection laws as well as laws to protect local industries. Communities have a right to protect their local educational ideas and their infrastructure to produce, and not just consume, educational ideas. Like shoemaking in Italy, rice growing in rural Japan, and the French film industry, there are historical, cultural and economic reasons to protect endangered industries from the harshness of having to compete in the global marketplace.

The problem with these biological and marketplace metaphors is that education is neither a biological system nor a business. Metaphorical thinking can take us only so far. The currently popular use of the term scaling up is a catachresis that obfuscates and confuses more than helps us address the problem of how to balance core with local perspectives and the interests and intentions of practitioners, curriculum developers and policy-makers as all strive to improve the quality of education.

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10.   If the Article was prepared jointly with other authors, you warrant that you have been authorised by all co-authors to sign this Agreement on their behalf, and to agree on their behalf the order of names in the publication of the Article. You shall notify us in writing of the names of any such co-owners.

11.   This agreement (and any dispute, proceeding, claim or controversy in relation to it) is subject to English law and the jurisdiction of the Courts of England and Wales. It may only be amended by a document signed by both of us.

Signed   _____

Print name   _____

Date   _____