

**Orchestrating Systems and Remodeling Reform:  
Reframing Education Reform with Simplifying Models**

**A FrameWorks Research Report**

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## INTRODUCTION

The research presented here was sponsored by the Nellie Mae Education Foundation and the Lumina Foundation for Education. The specific research described in this report is part of a larger study exploring the ways that Americans think about education and how communications can expand this thinking to illuminate the need for changes to the education system — defined in these studies as pre-K through higher education — and the public’s potential role in this change. As part of this larger task, this report identifies two *simplifying models* that, through a multi-method empirical testing and refinement process, have proven effective in extending and shifting patterns of thinking about education reform.

*Simplifying models are metaphorically based frame cues that change the fundamental ways that people understand what issues are “about.”* They are, therefore, a useful ingredient in making shifts in how people process and interpret information. By fortifying understandings of complex phenomena like the American education system and the process of education reform, simplifying models can predispose Americans to realize the public’s responsibility in improving education through sound public policy.

Following FrameWorks’ multi-disciplinary approach of Strategic Frame Analysis,<sup>1</sup> we pay attention to how Americans’ understanding of education is shaped by a shared set of assumptions and understandings — what anthropologists call “cultural models.” These shared assumptions are what allow individuals to navigate their social worlds. However, cultural models can also play a more restrictive role, shaping available interpretations and making some messages “easier to think” than others.<sup>2</sup>

Informed by this understanding, FrameWorks has found that the shared assumptions Americans apply to “think education” preference certain understandings of what education “is about.” Put another way, FrameWorks research has shown that applying the existing dominant cultural models associated with education restricts the ability of Americans to understand how the education system works and what education reform is all about. Armed with these problematic shared cultural understandings, many of the messages of education experts, advocates and reformers are rendered decidedly “hard to think” resulting in what is fundamentally a problem of translation.

FrameWorks research has identified a number of gaps between the way that experts and advocates on the one hand, and the public on the other, think about education in America.<sup>3</sup> This report focuses on the most fundamental of these gaps: (1) how the education *system* works; and (2) how education *reform* could work to improve this system. These gaps were selected as targets for simplifying models because they represent fundamental rifts in public understanding.

Without careful and deliberate attention, these gaps stand as pitfalls in the way of public recognition of the importance of more specific reforms and programs. Quite literally, the public cannot get there (to expert understandings) from here (cultural models in use) without more assistance. In effect, these gaps impede the conclusion that public policy can serve as an effective means through which to shape and improve the American education system. FrameWorks’ research has demonstrated that these fundamental gaps in understandings are at least partially responsible for the sporadic and relatively meager public support for efforts to reform the American education system that we observed in our qualitative studies.<sup>4</sup> Working from this understanding, FrameWorks has conducted research to design and test *simplifying*

*models* that bridge these gaps and that, in so doing, can help education advocates and reformers communicate the relevance and importance of education policy.

The research described in the following report shows that two specific simplifying models — *The Education System as an Orchestra* and *Education Reform as Remodeling* — concretize and create a more robust understanding of these foundational concepts in the public sphere and improve the salience and impact of communications about specific reforms and innovative approaches to teaching and learning. In short, these simplifying models provide a requisite stepping stone in moving the public from how it currently thinks about education to a perspective that facilitates consideration of the types of reforms, policies and programs about which advocates wish to communicate. In this way, the simplifying models discussed in this report constitute one key framing element, part of a more strategic and effective communications. It is important to note, however, that even the best simplifying models cannot accomplish everything that needs to be done in reframing the issue of education. When models show great promise, but cannot accomplish everything, other frame elements — Values, Messengers, Tone, Causal Series, etc. — need to be tasked with addressing routine misdirections in thinking. Thus, this report constitutes one in a series of investigations designed to identify important elements of a new education reframe.

In this report, we briefly discuss what a simplifying model is and why the design and application of these reframing tools are essential in creating more effective communications about education. We then discuss the process by which FrameWorks’ researchers identified, developed and empirically tested the power of two specific simplifying models, chosen from among dozens of candidate models, in broadening the public policy conversation on education, concluding with a discussion of how these two models can be applied in communication efforts.

### **WHAT IS A SIMPLIFYING MODEL?**

A simplifying model can be thought of as bridge between expert and public understandings — a metaphor that presents an expert concept in a way that the public can readily deploy to make sense of new information. More specifically, FrameWorks defines a simplifying model as a research driven, empirically tested metaphor that captures and distills an “expert” concept by using an explanatory framework that fits in with the public’s existing patterns of assumptions and understandings (cultural models). A simplifying model reduces a complex problem to a simple, concrete analogy or metaphor and contributes to understanding by helping people organize information into a clear picture in their heads, including facts and ideas previously learned but not organized in a coherent way.<sup>5</sup> Simplifying models also have the advantage of being common in journalistic and expert explanations of socio-political phenomena – from “greenhouse gases” to explain the mechanism by which global warming happens, to “trickle down” economics to explain how those at the bottom might benefit from stimuli to the wealthiest at the top.

More specifically, in FrameWorks’ conceptualization of simplifying models as frame elements, an effective simplifying model: (1) improves *understanding* of how a given phenomenon works (in this case the how the education system and education reform work); (2) creates more *robust, detailed and coherent discussions* of the target issue; (3) is able to be *applied* to thinking about how to solve or improve a situation; (4) *inoculates* against the dominant unproductive default

pattern of thinking normally applied to understand the issue; (5) is highly *communicable* — moving and spreading easily between individuals without major breakdown in key concepts; (6) is *self-correcting* in that when a breakdown does occur, the model can snap back to its original form and continue to achieve its function in clarifying key aspects of the issue.

The concept of a “simplifying model” is based on theory from psychological anthropology. Psychological anthropologists conceptualize “culture” as shared sets of hierarchical mental structures of assumptions and understandings that individuals implicitly employ and rely on in making sense of their social worlds. Researchers refer to these shared understandings and assumptions as *cultural models* and have found them to be tacit and implicit. In other words, members of cultural groups do not refer to or use cultural models consciously. Instead, these sets of assumptions are employed without the awareness of their application or role in organizing our thinking and reasoning processes.<sup>6</sup> Simplifying models are *not* cultural models. Instead, they are researcher-designed metaphors that *make use of existing cultural models* and the metaphorical nature of human cognition to distill and clarify “hard to think” concepts. It is important to note here that simplifying models are *not* cultural models. Instead, they are researcher-designed metaphors that *make use of existing cultural models* and the metaphorical nature of human cognition to distill and clarify “hard to think” concepts.<sup>7</sup>

### **WHY EDUCATION NEEDS SIMPLIFYING MODELS**

It is a fairly common feature of American political life that the public rarely understands the mechanisms, processes, or contexts that undergird social problems.<sup>8</sup> As a result, advocates seeking to advance public policy solutions to social issues face an uphill challenge. FrameWorks has developed a way of identifying, testing and refining simplifying models to “fill in” the missing element from public thinking about scientific and social phenomena. This process begins with the identification of gaps between the public’s understanding, on the one hand, and those of experts on the other, based on interviews with both groups.

On education, in particular, past FrameWorks research has located several key gaps in understanding.<sup>9</sup>

#### **Expert-Public Gap #1: The benefits of education**

Experts and advocates see education as critical to any society’s future prosperity and its stability. They see education as constituting not only an economic engine, but also as contributing to a country’s quality of life. In sum, they assume the benefits to be derived from education *are collective*. While the public believes this to be true, it is not top-of-mind. Consumerist and individual patterns of thinking tend to dominate this conversation, as on many American issues. These dominant assumptions lead people to assume that education is primarily an individual pursuit with benefits that accrue narrowly to individuals in the form of financial earning power and individual success.

#### **Expert-Public Gap #2: The role of community**

Experts and advocates understand that education can happen in many settings and can use community resources to advance learning and offer new experiences. The public, however, rarely mentions education as happening in the community — instead they focus narrowly on the family.

### **Expert-Public Gap #3: What “disparities” mean**

Experts and advocates understand that disparities in educational outcomes are tied closely to the resources available to poor communities. If this is not carefully explained, however, the public can be re-minded of the intractability of poverty, negative assessments of minority and ethnic groups, etc. What’s missing is the link between resources and outcomes.

### **Expert-Public Gap #4: What the education system is and how it works**

Experts and advocates understand that education is a system that encompasses many actors and resources. By contrast, the public sees only parent-teacher-student, the classroom and the school.

### **Expert-Public Gap #5: How reform works to address and improve the system of education**

Experts and advocates understand that reforms to the education system are possible, practical and expedient. Most are excited by the possibilities of rethinking and remaking the system into a better fit for the country’s future. The public, on the other hand, is often entrenched in an assessment of education as yet another intractable system that eludes improvement year after year and may, in fact, be beyond repair.

**Specific Targets for Simplifying Models on Education.** The last two of these gaps are both particularly critical to communicating about education in America and conducive to improvement via simplifying models. To use a metaphor, communicating about specific policies without first addressing gaps 4 and 5 in the list above would be like planning a cross-country road trip and focusing only on the surface streets surrounding your destination. To the extent possible, simplifying models (and other frame elements) need to address these identified pitfalls in understanding.

Bridging these gaps with simplifying models has the potential to bring expert explanations and understandings of the education system and its reform in line with the public’s perceptions. The theoretical literature strongly suggests that, by providing the right image and drawing upon information already in people’s everyday understanding of the world, communicators can create dramatically different public perspectives on education and how to fix problems in this system.

## **HOW SIMPLIFYING MODELS ARE IDENTIFIED AND TESTED**

FrameWorks has developed a multi-method process to systematically develop and empirically test simplifying models. This methodology begins by “mapping the gaps” between expert and public understandings, and then develops candidate simplifying models to bridge these gaps. A qualitative and quantitative empirical testing process is then applied to determine which models work best in enhancing understanding of the relevant issue. Appendix A discusses these methods in greater detail.

### **Phase 1: Mapping the Gaps**

FrameWorks first conducts two types of interviews: *cultural models interviews* and *expert interviews*. Cultural models interviews are conducted with members of the general public and are designed to gather data that, through qualitative analysis, reveals the underlying patterns of assumptions — or cultural models — that members of the public apply in processing information on a given topic. Expert interviews are conducted with researchers and practitioners who possess an “expert” or technical understanding of the given phenomenon. These interviews are designed to elicit the expert understanding of the issue. Comparing the data gathered from these interviews

reveals the gaps that exist between how experts and average Americans understand and approach issues. The gaps identified on education and education reform are enumerated above.<sup>10</sup>

## **Phase 2: Designing Simplifying Models**

With the help of a linguist, FrameWorks analyzes transcripts of the interviews conducted in Phase I to generate a list of metaphor categories that capture the *process* elements of the expert understanding that have the potential to be easily visualized and incorporated into the public's thinking about the target issue. The result of the design process is a list of both metaphor categories (e.g. "Navigation," "Team Play," "Rebuilding"), and multiple iterations of each category (e.g. "Education Reform as a Compass," "The Education System as a Baseball Team," "Education Reform as Remodeling"). In this case, FrameWorks developed six initial metaphor categories that responded to the gaps and created one iteration per category. The categories that emerged as successful in on-the-street interviews (see below) were then further built out to include multiple iterations.

The initial list of 6 categories and iterations included the following:

1. **Tools:** *The education system as a tool in a tool belt.*
2. **Exposing:** *Exposing the root causes of problems in the educational system.*
3. **Navigation:** *A compass for navigating around educational problems.*
4. **Adjustment:** *The education system in need of a tune-up.*
5. **Remodeling:** *The education system as remodeling a building.*
6. **Team Play:** *The education system as baseball team.*

## **Phase 3: Testing Simplifying Models**

### *Test I: On-the-Street Interviews*

On-the-street interviews provide an opportunity to gather data on the effectiveness of candidate simplifying models. These interviews examine which specific elements of the models are functioning well, and which aspects are less successful in clarifying those concepts necessary to shift perspectives.

With respect to education issues, analysis of on-the-street interview data demonstrated that two of the six categories were highly problematic (Navigation, Exposing), while four were quite promising (Tools, Adjustment, Remodeling, Team Play). Based on the results of these interviews, multiple iterations were generated for each of these categories.<sup>11</sup> For example, multiple iterations of the larger Team concept were designed — including the Orchestra idea.<sup>12</sup>

### *Test II: Quantitative Experimental Research*

After analyzing on-the-street interview data, FrameWorks winnows the list of model categories and builds out multiple alternative iterations of those categories that are performing well. These successful categories and their multiple iterations are then tested in an online quantitative experiment. The overarching goal of this experiment is to gather representative and statistically powerful data on the models' effectiveness in helping people understand fundamental aspects of an issue, to remember this knowledge and to readily see how public policies might be used to

improve public life. These data then provide an empirical basis to select one or two models that are most successful relative to a set of theoretically driven outcome measures.

The education simplifying models survey was conducted with 5,450 survey participants who were drawn from a national online panel and data were weighted on the basis of gender, age, race, education and party identification to ensure that the sample was nationally representative.<sup>13</sup> The survey measured the performance of 14 candidate simplifying models and metaphor categories in relation to a set of outcome measures. The quantitative test clearly identified the power of two simplifying models: Orchestra and Remodeling. In addition, it exposed certain weaknesses in the execution of these models, which were subsequently explored and addressed in the TalkBack process.

### *Test III: TalkBack Testing*

After using quantitative data to select and refine the most effective model(s), FrameWorks conducts TalkBack Testing to answer two general research questions: (1) *can* and *do* participants transmit the simplifying model to other participants with a reasonable degree of fidelity? and (2) *how* do participants transmit the model? In other words, how well does the simplifying models hold up when “passed” between individuals, and how readily can participants use and incorporate the models in explanations to other participants.

The application of this method in the education research confirmed the effectiveness of the two emergent candidate simplifying models and facilitated a more detailed exploration of their specific strategic communication advantages. The data from these sessions were also used to make final refinements to the iterations to address specific issues and maximize the models’ effectiveness.

## **THE WINNERS: TWO EFFECTIVE SIMPLIFYING MODELS FOR EDUCATION**

Employing the research process described above, FrameWorks’ researchers identified, refined and empirically tested three broad simplifying model categories and a combined total of 11 iterations — or more specific instantiations — of these categories.<sup>14</sup> Out of this larger set, two simplifying models emerged as most effective in extending the public conversation around education and education reform: *The Education System as an Orchestra* and *Education Reform as Remodeling*. Below, we review the development of each model that emerged from the iterative research process. We also discuss the general contributions of each model, the empirical evidence that demonstrates the explanatory power of the models and the more specific strategic communication advantages of employing each model.

### **Effective Model #1: The Education System as an Orchestra**

*Our nation's educational system is like an orchestra: like an orchestra, it has many groups of players with specialized jobs, such as school boards, taxpayers, families, teachers, principals and administrators. The orchestra sounds best when each musician is skilled, the instruments are well-tuned, and the sections work together in harmony toward the common goal of playing the best music they can. But a changing America and world have handed the orchestra new music to play, and they haven't gotten in sync yet or rehearsed the new repertoire enough to be ready to perform it. No orchestra becomes great overnight, and the beauty of the music depends on lots of*

*small steps, dedicated practice by musicians who have all the resources they need, and an orchestra conductor who can create harmony among all the parts. We can use this orchestra theory to guide how we approach education reform.*

### **What The Orchestra Analogy Contributes to the Public Understanding**

**I. General Effects.** The Orchestra idea emerged from a larger “Team” category of models. The results of on-the-street interviews illustrate some of the general communications characteristics of the larger category from which Orchestra draws its metaphorical and conceptual power.

Most informants applied the team concept to think and talk about the many parts and players that contribute to the overall functioning of the education system. In short, using this idea, informants could readily see that the functioning of the education system relies on a wide range of individuals and groups. To underscore the importance of this effect, this broader systems perspective was not found in unprimed discussions, which focused on the triad of parents, students and teachers.

*“Well, I mean, it [the education system] can go all the way from our government and how it works, policy changes, people who create, and change policies, to teachers, students. So, I guess, focusing in on the community needs around the schools, the school, the teachers, the curriculum.”*

Independent Woman, age 29

*“It’s [the education system] a multi-faceted organization. It cannot simply be run dictatorially. It has to be run like a team, which is much more democratic in a lot of ways. Each person has their own specialty, and yet, the “team” doesn’t comprise any kind of good team unless they all work together. You can have a great pitcher, but your team can lose because everybody else is not doing their job, so each part does have to do its job.”*

Independent Woman, age 45

The Team Play model also showed promise in highlighting the importance of leadership in education — that the success and quality of education is, at least in part, a function of the quality of its leaders. The appreciation of the influences of leadership, including government agencies, trustees, school boards and school administration, is in direct contrast to default understandings that tended to focus on student and parent *motivation* as the ultimate determinant of educational outcomes. As discussed above, based on the promising performance of the Team category in on-the-street interviews, multiple alternative iterations were designed, of which Orchestra was one.

**II. Evidence from the Quantitative Experiment.** The quantitative experiment provided statistical evidence for the effectiveness of the Orchestra idea. Results from the online

experiment indicated that the idea was highly understandable; easily and successfully applied to thinking about education; structured an understanding in which policy played a role in improving education; shifted responsibility from an individual to a collective sense of responsibility; and inoculated against crisis-mode thinking by creating a pragmatic sense of efficacy and a powerful solutions orientation. The results of these more specific measures were collapsed into a cumulated score to allow for comparison between model categories and between iterations both within and between categories. Of the three categories tested, Team — the larger category from which Orchestra was derived — achieved the highest cumulative score, with the Orchestra iteration outperforming all other iterations both within category and in the experiment overall.<sup>15</sup> Based on these results, the model was further refined and brought forward into TalkBack Testing where its more specific strategic advantages could be explored.

**III. Specific Strategic Communication Advantages.** In TalkBack Testing sessions, participants readily applied their understanding of what an orchestra is, does and how it works as a way of thinking and talking about the education system and the need for reform. In applying the Orchestra idea to thinking about the education system, participants were not only able to have robust, substantive and informed discussions about the education system and the need for reform, but also argued positions and approaches to education reform in which public policy and social solutions played a prominent role in improving education outcomes.

*Application.* More specifically, TalkBack Testing research showed that the Orchestra metaphor was applied in thinking and talking about education in the following ways:

- A. Orchestra “sections” structure education as a system with many parts.** In discussing how the education system is like an orchestra, participants focused on how both entities are made up of individual but integrated parts. By holding the picture of an orchestra in their heads, participant thinking was led to the fact that the education system, like an orchestra, is made up of many distinct parts and players. In all but one case, participants described these parts broadly and did not assign responsibility narrowly to students, parents and teachers (the “triad”). In expanding the parties that participants could see as integral to the system and responsible for its outcomes, the orchestra metaphor was effective in setting the stage for a wide array of programs, policies and reforms that address the education system broadly at all levels, from pre-K to higher education. This specific application has the potential to make more visible those aspects of the education system that routinely elude thinking.
- B. “The problem with education is ...”** Participants saw clearly that the causes of a poor orchestra performance include: sections that can’t play together, lack of attention to the common good and poor conducting. These entailments were in turn easily applied in thinking and talking about the causes of poor educational outcomes. After exposure to the simplifying model, discussions of poor education outcomes focused on: disorganization, or how parts of the system were out of tune or “out of whack;” poor leadership in facilitating the integration of the parts; and lack of facilitation, or how the individual parts were denied the support they needed to be able to effectively play their role. These conversations were dramatically different from discussions in earlier open-ended qualitative research, where informants focused overwhelmingly on a lack of “motivation,

drive and discipline” as explanations for education’s failures. Instead of talking about students who are not disciplined, teachers who lack motivation and parents who “just don’t give a damn,” participants exposed to the Orchestra simplifying model discussed lack of coordination between parts, lack of administrative support and social issues such as poverty as major determinants of educational outcomes and causes of current problems in the system. This suggests that the Orchestra model can help establish more material causes for the underperformance of the education system.

- C. Success=integration: In thinking about how education outcomes might be improved, people exposed to the Orchestra concept** were far more able to see that all the parts of the system must be coordinated and work towards the overall system’s goals. Just as the sections of an orchestra need to be in harmony and in synch if the orchestra is to play beautiful music, participants talked about how the parts of the education system must be highly coordinated for the system to perform well. In this way, the Orchestra model focused participants’ attention on the need for changes that create improved interactions, communications and coordination between a wide range of parties and parts that comprise education. Participants were able to see how instituting policies that achieve this harmony is a necessary component of education reform. The model, therefore, was effective in both shifting focus off of individuals and onto systems as well as in highlighting solutions concerned with improving the system in which individuals are embedded, rather than merely finding ways to increase student, parent and teacher motivation. The implication here is that the Orchestra model might be used to help people see the importance of correcting holes in the system, for example those between high school and higher learning.
- D. Differences between places:** Participants applied the Orchestra model to talk about disparities in educational resources *between places*. Many participants likened the sections of an orchestra to geographic areas in the national or state education systems. Participants talked about the importance of assuring that all the parts and areas of the system have equal educational opportunities and are given equal chances to perform at their best. This focus on equality between places creates an opportunity for discussing specific policies that “level the playing field” in access to educational resources.

**Inoculation.** The Orchestra Effect was also successful in inoculating against many of the dominant default patterns of thinking associated with education.<sup>16</sup>

- A. Against the *Good teachers are caring individuals* cultural model:** In TalkBack Testing sessions, teachers were still an important “section of the orchestra,” but participants embedded teachers *in systems*. Rather than being narrowly and solely responsible, teachers were conceptualized as the conduit through which institutional quality and support flows and affects students. Instead of seeing teachers as the ultimate determinant, people were able to see the institutions into which teachers are embedded and from which they garner support as key determinants of educational outcomes. This suggests that the Orchestra model might be used to support better integration of early child learning into the broader education system, by deepening an appreciation for the educational context.
- B. Against the *consumerist* cultural model:** The Orchestra simplifying model was also successful in shifting participants away from the highly operative dominant cultural

model of consumerism. This is the idea that the world works like a market where inputs equal outputs and you should always pay for what you get and get what you pay for. In one case, a participant who was being “taught” the model by the previous group voiced a concern about why he should have to pay to send other people’s kids to school when he had no children of his own. The teaching group employed the orchestra model to explain to him that, even though he did not have a child in the education system, he was a community member. As such, he was an integral part of the orchestra and played a role in improving educational outcomes. They went on to explain that, even though he did not have a child in the system, he benefitted from having a good orchestra by enjoying the beautiful music that it produced. The group used the orchestra concept to make the point that the benefits of having a strong education system are not just conferred to the students in the system, but to the community more generally through things like a strong base of qualified workers and well-informed citizens. This finding would suggest that the Orchestra model could be used to explain why public funding is used to support everything from Pell grants to after-school arts programs.

- C. Against the “individual purpose of education” cultural model:** The Orchestra model also counteracted the dominant pattern in which people assume that the sole purpose of education is to confer individual success. Another example illustrates the “inoculation” power of the simplifying model. Following one group’s presentation, the receiving group expressed a concern about the need to make sure that, even as we work towards the common good, we never stifle individual liberty or an individual’s opportunity “to shine.” In earlier research, this individual liberty value was a powerful cue for zero-sum patterns of thinking. But in the TalkBack session, the teaching group used the Orchestra simplifying model to explain how the idea of education as an orchestra is not an affront to individual liberty and that zero sum thinking is not appropriate or applicable in this situation. They explained that the relationship between individuals and groups is one of mutual benefit in an orchestra — that, in order for an individual to shine, he or she needs a good orchestra surrounding and playing behind them, and that for an orchestra to be successful it needs strong individual players to step up as soloists. This finding suggests that the Orchestra model can be used to explain the universality of public education, not merely its utility to high performing individuals.
- D. Against the *family bubble* cultural model:** The importance of parents as a determinant of educational outcomes *was* discussed in TalkBack Testing sessions. However, this topic was not a dead end, and did not derail conversations in the way that it did in earlier research. Discussions were more balanced, and parents were assigned an important role in the education system, but not the only, or even the primary role. In other word, parents were seen as part of a larger orchestra. In this way, participants were able to recognize the responsibility of the systems in which parents are situated. The resulting solutions, even when parents were part of the discussion, were consistently to “re-sync” the system, rather than just “motivate parents.” Furthermore, parents were never interpreted as being the conductor, yet another sign that the simplifying model was successful in keeping participants from employing family bubble patterns of thinking. Shifting away from this little-picture view is vital in reassigning responsibility for educational outcomes to a wider set of parties and draws an important in-road for policy discussions that focus on addressing the education system at levels other than the individual.

**E. Against the *mentalist* cultural model:** Relatedly, the Orchestra simplifying model effectively countered mentalist patterns of thinking in which causation is boiled down to either the presence or absence of internal motivation and drive. In discussing the Orchestra metaphor, participants instead recognized the systems and contexts into which individuals are embedded as determinants of outcomes. More specifically, when participants thought about what determines whether an orchestra plays good or bad music, they talked about things like *cooperation* between parts, and the importance of having *strong leadership* and *support* to coordinate various aspects of the system. They avoided discussions about the strength or determination of any one individual player. When participants applied the Orchestra metaphor to thinking about the education system, positive and negative outcomes became about coordination and support, rather than motivation and drive. The implication here is that, by avoiding mentalist explanations, the need for educational resources that support 21<sup>st</sup> century skills becomes more apparent to people than the sheer determination to succeed — from science labs to innovative curricula, tangible reforms are likely to be easier to think when the Orchestra idea is deployed.

***Self-Correction.*** TalkBack Testing also showed that the Orchestra model had a high degree of self-correction. Self-correction refers to a simplifying model’s ability to snap back to its initial form following a deterioration or morph of the concept in public discussion. Self-correction is an important measure of a model’s strength. When communicated in the public sphere, breakdowns in the model are likely, even expected, and it is therefore vital that a concept have enough internal coherence to recover from such devolutions — to convey key entailments despite being communicated in partial or inaccurate form. Below are two examples that illustrate the Orchestra model’s ability to self-correct.

- A. The missing conductor reemerges:** In one TalkBack Testing session, a group presented the model with no mention of the role of the conductor — a key part of the concept for all other groups. Despite the absence of this part of the model from the group’s teaching, the next generation implicitly drew this entailment from the Orchestra metaphor and reinserted this part of the concept into their explanation and teaching of the model. Despite the fact that the role of a conductor dropped out and was not part of the model, it proved such an intrinsic part of people’s understanding of what an orchestra is and how it works that it was conveyed even when not explicitly included. This suggests that the Orchestra idea has the ability to redirect attention to those with the power to make change in the system, not merely to those affected by education’s failures.
- B. The triad emerges but is put into contextual perspective:** There was another interesting case in which the first group exposed to the Orchestra simplifying model conveyed a narrow teaching in line with the dominant “triad of responsibility” cultural model. The group that was taught this narrow interpretation actually advocated for the inclusion of a wider cast of characters and for the importance of more contextual factors, such as where the community was located and how the education system was funded. Put another way, even though the second group received a very narrow and individualistic account of the “education system as an orchestra,” their interpretation of the metaphor was decidedly more systemic and contextual — an interpretation that was closer to the simplifying model originally presented. Furthermore, in the course of discussing their

interpretation of the Orchestra simplifying model, the second group was able to sway the first group towards a more systemic view of involved and responsible parties.

**Communicability.** The Orchestra model was also highly communicable — it was easily and accurately conveyed across generations of informants such that the final generation’s explanation closely approximated the concept and content that the researcher initially presented. This is an important finding, as a highly communicable simplifying model will pass easily and with a high degree of fidelity between individuals. In sessions in which the Orchestra simplifying model was tested, the first, second and third generations’ explanations, understandings and teachings of the model closely resembled the form, language and content presented by the researcher at the beginning of the session.

**Refinements.** An additional function of TalkBack Testing was to gather data to enable empirically-based final refinements of the models — refinements designed to ensure that the final iterations of the models were maximally effective. Below is a description of the ways in which TalkBack Testing data suggested additional refinements to the Orchestra idea.<sup>17</sup>

- A. Adding specificity.** In several instances, participants explained that the Orchestra idea lacked sufficient specifics and detail. This pushback demonstrates the importance of presenting simplifying models at the top of messages, followed by more specific and detailed discussions of policy solutions once the frame has been “set.”

The push for more specifics on the Orchestra idea also indicated that the final iteration of the model needed to clarify that the simplifying model is not a “reform plan,” but is more aptly conceptualized, as many participants said, as a “theory” or “philosophy” for understanding the education system and reform. Note that the final execution does exactly that, by referring to the “Orchestra idea” and avoiding all language that suggests the model is a “plan” or a “program” for reform.

- B. Expanding the “sections.”** In one session, a group interpreted and presented the Orchestra simplifying model through the dominant cultural model of the triad of responsibility. For this group, the conductor became a child’s teacher, the orchestra the children in a classroom, and the parents the audience. In this interpretation, the Orchestra included none of the more systemic components that it was designed to concretize. This was the only case in which a group’s interpretation and application of the Orchestra model failed to include more systemic aspects of the educational system — like superintendants, administration, boards of education and taxpayers. While this interpretation occurred in only *one* group of *one* TalkBack Testing session, it did suggest specific ways to refine the model’s final execution. Namely, the model needed to refer explicitly to more systemic sections of the educational orchestra.

- C. Updating the Orchestra.** The Orchestra idea model also generated limited discussion of the “updating” function of education reform. This updating function is key for education reformers, as most of the policies about which they wish to communicate deal with innovative approaches to teaching, learning and re-organizations of the system to meet the current and changing needs of students and society more generally. To address this finding, the idea that periodically, orchestras are given new music, and must adapt and change to be able to perform these new scores was added to the final iteration of the

Orchestra idea. Adding this entailment helps people think about the education system's need for new innovative policies and approaches.

**D. Refining a process of change.** The most significant issue with the Orchestra model's performance in TalkBack Testing was its shortcomings in helping participants see *how reform works*. While the model was highly successful in many respects, it stopped short of being able to get participants over the remaining hump of seeing how reform would work on this system. To deal with this issue, an existing entailment of the metaphor that was not cued in the previously tested execution was more explicitly activated — that orchestras do not get better over night, and that their success depends on small steps and improvements towards the end goal of a beautiful performance.

### **Effective Model #2: Education Reform as Remodeling**

*When you remodel a house, you do more than just repaint it: you make substantial changes, keeping the previous shape of the house, but updating old parts, and making the house more modern, and efficient. Like a general contractor, we have to remodel our educational system so that it enables our society to thrive in today's world. Right now our educational system is an old house that doesn't do a good job of educating our children or providing society with the skills that America needs. The bad news is that remodeling creates temporary dust, noise, and inconvenience, but the good news is that when you remodel you don't have to start from scratch — you strengthen what's working and fix what's not. If we approach educational reform as remodeling, not demolishing, we will more successful in giving our children what they need.*

### **What the Remodeling Analogy Contributes to the Public Understanding**

**I. General Effects.** In on-the-street interviews, Reform as Remodeling facilitated robust discussions of the education system and reform when compared to those discussions that preceded exposure to the model. In addition, informant discussions focused on the need for innovative reforms and new approaches to learning — subjects which were not discussed prior to exposure to the model.

*“I think that it [the education system] needs to be remodeled, but when you totally remodel a building, you tear down walls. Maybe not the outside structures but the inside structures. You actually go in, and you say, okay, is this a bearing wall? Is this something I truly need in this house? Okay, I truly need to teach my children conjunctions, and adjectives, and I need to teach them math; I need to teach them science; I need to teach them basics. Those are the bearing walls of education. But [the question is] “how” I teach it to them. We need to look outside of our education system, and say, “how does this child learn”? What's the best way for this child to learn? Maybe the best way for this child to learn is through music. Maybe the best way for this child to learn is by touching things, and hands on. So you would have to tear down walls.”*

Independent Woman, age 55

Before hearing the simplifying model, informants had a strong tendency to view the problems of the education system as too large, too severe and too complicated to address — what

FrameWorks calls a crisis frame.<sup>18</sup> This crisis thinking works against messages about the utility of education reform policies and programs, and instead fosters public disengagement from the issue. Employing the Remodeling metaphor, informants viewed education reform from a decidedly more pragmatic perspective. In short, the Remodeling metaphor gave informants a concrete way of thinking and talking about *the process* of education reform, and was successful in countering the dominant tendency to view the education system as hopeless.

“You are *reinforcing* something. You’re making it stronger and you’re not taking away, but you’re adding to. So, to me, that’s a good outlook — a good way to look at education.”

**Interviewer: So how would you explain to someone what education reform is?**

*“You have to look at the whole picture and see what needs to be updated, changed, and what is maybe outdated, and [needs to be] removed. I would say that it might make sense to step back and assess what it is, and where it is now, and where we want to go with it because a lot of things change over time, and if the system was designed at some point in the past that doesn’t really respond 100% to the way society is structured now, then that’s gonna cause problems, inefficiencies, and whatnot. So, I would say that one of the things that would make sense is to figure out how that system fits into what’s happening now, and what’s gonna be happening tomorrow. But I think it’s better to work on something that already exists than start from scratch. Like, if you were remodeling a house, it’s better to do something that already exists than try to build it from scratch.”*

Conservative Man, age 46

**II. Evidence from the Quantitative Experiment.** Results of the quantitative experiment indicated that Remodeling was highly successful with respect to the outcomes tested: understandability; application in solutions oriented thinking; inoculation against damaging dominant patterns of thinking, an improved sense of agency; and a heightened sense of public rather than individual responsibility. In the Adjustment category — where Remodeling was one iteration — the general category achieved the highest score followed closely by its more specific Remodeling instantiation. That the general category outperformed the more specific iteration in this case, suggested that the specific iteration had yet to tap all of the metaphorical power inherent in its larger conceptual category. Attention was therefore paid to further refining the Remodeling iteration, to more fully exploit the power inherent in its larger conceptual category.

**III. Specific Strategic Communication Advantages.** TalkBack Testing confirmed and expanded the results from on-the-street interviews with regard to the ways in which Remodeling contributed to positive public understandings of education.

**Application.** Participants were able to *apply* the idea of Remodeling in thinking and talking about education reform in the following ways.

- A. A step by step, concrete and “doable” process:** Remodeling was connected to a clear step-by-step process that was easily applied in thinking about education reform. The idea of remodeling a house/building was frequently applied to talk about a concrete, tangible and “doable” process of change. For participants, the idea of “remodeling” entailed a

step-by-step process in which you first set goals and then work backwards, taking “baby steps” and continually taking stock of what is and is not working in the system. The things that are not working become the primary targets for remodeling; while those that are working become aspects that can be built on to strengthen the overall structure. As one participant said, “taking advantage of your existing assets is a key part of remodeling.” The simplifying model structured a specific, planned, and manageable approach to something about which participants, without exposure to the model, had incredible difficulty thinking and discussing at any level of detail. Participants recognized that if changing the education system is like remodeling a house, reform can be a clear and approachable process rather than one of immeasurable, immense and invisible proportions.

*“I think when they were saying remodeling, it seems like ‘accomplishment’ — If you were sitting at your house and you say ‘Hey, you want to remodel a kitchen — change a couple cabinets?’ You’d say, ‘Ok, a couple beers, I can do that on the weekend!’ If I tell ya, ‘Let’s rehab the whole entire house.’ You’re gonna go [whistle sound] No way! What’s on the tube?” You might get overwhelmed and it might not be accomplishable.”*

Baltimore TalkBack Testing Session

**B. Updating and modernizing:** Participants also used “Remodeling” to talk about the need to *update* the education system. Participants saw that an important reason for remodeling a building is to make sure that the structure meets current standards and functions required in “today’s world.” In short, participants recognized that remodeling is undertaken because needs are no longer being met. Participants who applied this entailment saw that one of the reasons that the education system needs to be reformed is that it no longer meets students’ or society’s needs and that, therefore, the content of learning and teaching needs to be updated. Many participants were able to see that major changes are needed so that the education system is able to prepare the country and its citizens for the demands of the modern world. This effect has implications for situating pre-K in education reform, as well as for rethinking the need for more universal access to higher education.

**Inoculation.** Remodeling was particularly effective in inoculating against the type of crisis thinking that was a hallmark of earlier descriptive research.

**Against crises thinking:** The process of Remodeling was highly concrete, vivid, familiar, approachable and pragmatic and created a strong feeling of “do-ability” that helped participants avoid falling into crisis mode and disengaging from the prospect of changing the education system. Due to the disruptive and destructive effects of crisis thinking, this is a major strength of the Remodeling concept as a way of thinking about education reform.

**Self-correction.** TalkBack Testing also showed that the Education Reform as Remodeling was capable of self-correcting. The two aspects that were most applicable (the step-by-step process and updating functioning) were also those with the most self-corrective power. Put another way,

even when one or both of these elements dropped out of teachings from group to group, they found their way back into later discussions. For example, in one session, the first generation taught Remodeling without mentioning the process by which you remodel a house or the updating function. For this group, “remodeling” was used as another word for reform (a problematic tendency discussed in greater detail below). However, the second generation’s interpretation and subsequent teaching of the model *did* include the step-by-step process in talking about educational change, and the notion of updating as both a rationale and end-goal for change.

**Communicability.** Remodeling was not as communicable as the Orchestra model. There were some breakdowns such that, in several cases, what the third group in TalkBack Testing was taught was different from the iteration of the simplifying model as presented by the researcher. However, the idea of remodeling being a step-by-step, approachable, concrete and “do-able” process did “travel well” across groups. That is to say that this idea moved between groups without breaking down or dropping out of discussions. The updating entailment discussed above also held up fairly well across groups.

What on occasion *did* breakdown was the sense that remodeling is *functional* rather than just *aesthetic* or superficial change. In several TalkBack Testing sessions, remodeling became a way to tinker with the physical appearances of schools so that they were more, as one participant said, “appealing.” A second communicability problem was that the concept behind reform (i.e. what you do when you remodel a house/building) actually dropped out of several groups’ teaching. For these groups, “remodeling” became just “another word for reform” and failed to achieve the desired simplifying functions. These tendencies were problematic and were addressed in the final refinements of the model.

**Refinements.** As with the Orchestra idea, TalkBack Testing data was used to make final refinements to the Remodeling idea. Below is a description of these final refinements.

- A. Making the process more explicit.** Some participants took the concept of Remodeling for granted and saw it as “just another word for reform.” Here, the familiarity of the term — normally a positive attribute of a simplifying model — appeared to work against the intended function of the model. The final refinement of the metaphor therefore made more explicit reference to why you remodel, what you do when you remodel and what happens to a structure that is remodeled.
- B. Functional rather than aesthetic remodeling.** For some participants, the concept of Remodeling was interpreted as “cosmetic changes” — it was about “slapping on a fresh coat of paint, and buying some new throw pillows to put on the sofa.” This suggested that a functional approach to remodeling needed to be more strongly set up in the final iteration — establishing the fact that remodeling is about changing the way things *work* — not just the way they *look*. Explicit language was therefore added to the final iteration to highlight the notion of remodeling as serious, structural and functional change rather than minor, surface tweaks.
- C. Getting back to innovation.** The dominance of the *basics* cultural model was apparent in TalkBack Testing as some participants chose to remodel education to get “back to the three R’s.”<sup>19</sup> In several groups, the idea of Remodeling was used as a way to think about

*how* reform could address the current system (the step-by-step process discussed above). However, for several participants, the goal of this process was not innovation or preparing students with new skills, but rather as a means to narrowly focus attention and educational resources on “making sure that each and every kid who graduates high school can read, balance a check book and make change.” To steer participants away from this interpretation, the final iteration focused more explicitly on *updating* and *modernizing* as the motivations for remodeling.

## CONCLUSION

This research has shown that the Orchestra and Remodeling simplifying models stand to make a significant contribution to framing education and education reform — that they are understandable, applicable, communicable, self-correcting, inoculate against damaging dominant perspectives, shift attribution of responsibility and impact the way that Americans perceive education reform policies. For these reasons, FrameWorks offers these new strategic frame elements to aid in reframing the public conversation around education reform.

Whereas in the past, FrameWorks’ research has often resulted in one simplifying model, designed to fill a single yawning void in public comprehension, we here suggest the strategic advantage of employing *both* the Orchestra and Remodeling models in communications. We make this recommendation for three reasons. First and foremost, the models fulfill slightly different cognitive functions — with the Orchestra idea filling gaps in understanding relative to how the education system works and its need for reform, and the Remodeling concept bridging understandings of what education reform looks like and how it works. Secondly, both models emerged from the rigors of empirical testing as successful relative to a set of outcomes derived from cognitive-communications theory. Finally, FrameWorks believes that recommending two models will allow advocates greater flexibility in their communications. While one model might be effective in certain contexts and for certain purposes, the other might be more effective and appropriate in other communication contexts.

We conclude with two notes of caution in the application of these models. First, the simplifying models suggested here were tested both for their underlying concept and with respect to the linguistic execution of this concept. Therefore, the emerging two models represent both effective metaphorical *concepts* and effective linguistic *packaging* or expression, of these concepts. For these reasons, while a certain latitude and flexibility in their use and application is to be expected, even encouraged, the specific concepts and language that appear in the report have empirically demonstrated effectiveness. We do not therefore claim to know the results or effectiveness of using alternative but related concepts or dramatically different linguistic executions of the concepts. In short, advocates should include the following basic elements in using the simplifying models:

### The Education System as an Orchestra:

- A. **Orchestras have multiple sections** — being concrete and specific as to what the sections of the education system would be

- B. What makes an orchestra good** — stressing the need for strong individual players and sections, but most importantly that these sections must be coordinated and working in concert towards a common goal
- C. The challenge that orchestras and education face** in the form of changing contexts
- D. The “step by step,” gradual process** by which orchestras become great
- E. Orchestras and education systems need resources and strong, capable conductors** to play their best music

### **Education Reform as Remodeling:**

- A. The pragmatic, functional and serious work** of remodeling — that remodeling is not just surface changes, it’s *serious* changes to the way things *work*
- B. Remodeling entails assessment of what is working and what is not** —what is working is kept and built on and what is not is fixed
- C. The goal of remodeling is to better allow us to meet our current needs and goals**
- D. Remodeling is hard work, but not a complete demolition — it does not entail blowing up the system** or starting from scratch

The simplifying models presented in this report represent *one* element of a new frame around education reform. For ultimate impact, these simplifying models should be accompanied by other frame elements, such as values, that are also tested as part of FrameWorks’ research on education. For a value to have its full effect in shifting the lens through which the public views a problem, there must be an accompanying understanding of how the thing being approached works.

In conclusion, the research presented in this report has shown how simplifying models applied to the domain of education can move people from perspectives like:

**Interviewer:** *“Why do you think the government should be spending money to educate everyone?”*

**Informant:** *“I still can’t understand, when you don’t have kids in school, why you continue to pay the taxes. I don’t know! They just want the money! You think after your kids are grown and everything they should give you that little break.”*

White Conservative Woman, age 56, Connecticut

To perspectives like this:

*“The education system can go all the way from our government and how it works, policy changes, people who create and change policies, to teachers and students. So, we need to focus on the community needs around the schools, the school, the teachers, the*

*curriculum. You have to look at the whole picture and see what needs to be updated, changed, and what is outdated, and needs to be removed. It makes sense to step back and assess where the system is now and where we want to go with it because a lot of things change over time, and if the system was designed at some point in the past that doesn't respond 100% to the way society is structured now, then that's gonna cause problems and inefficiencies. So, it makes sense to figure out how that system fits into what's happening now, and what's gonna be happening tomorrow."*

Independent Woman, age 29

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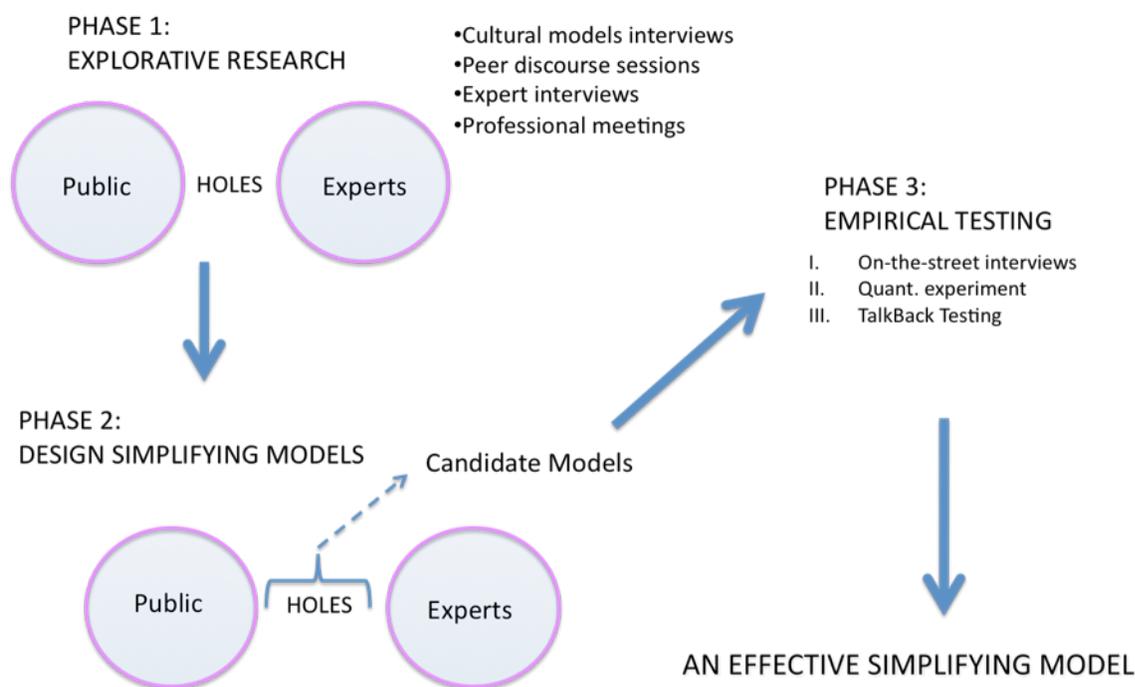
The FrameWorks Institute is an independent nonprofit organization founded in 1999 to advance science-based communications research and practice. The Institute conducts original, multi-method research to identify the communications strategies that will advance public understanding of social problems and improve public support for remedial policies. The Institute's work also includes teaching the nonprofit sector how to apply these science-based communications strategies in their work for social change. The Institute publishes its research and recommendations, as well as toolkits and other products for the nonprofit sector, at [www.frameworksinstitute.org](http://www.frameworksinstitute.org).

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## APPENDIX A: THE METHODOLOGICAL APPROACH TO IDENTIFYING AND TESTING SIMPLIFYING MODELS

### SIMPLIFYING MODELS RESEARCH PROCESS



#### I. PHASE 1: MAPPING THE GAPS

In the first phase of the simplifying models research process, FrameWorks employed two interview methods: cultural models interviews and expert interviews. Comparing these data revealed the gaps that exist between how experts think about education and reform and how average Americans understand and approach the same issues. Coupling these methods thus afforded an opportunity to identify the specific slots for simplifying models to fill in the domain of education.

More generally, cultural models interviews reveal the cognitive “terrain” on a given issue by focusing on the implicit patterns of assumptions — or cultural models— — which individuals employ to process incoming information on an issue. These patterns are the “mental bins” into

which people try to fit incoming information and represent both potentially productive and damaging ways of making sense of information.

To uncover the gaps in understanding on education, we held the findings from cultural models interviews up to the expert understanding of the issue gleaned from expert interviews. FrameWorks calls this process “mapping the gaps.”

## II. PHASE 2: DESIGNING SIMPLIFYING MODELS

FrameWorks had two general goals for the simplifying models on this issue. First, the models were designed to give people a way of thinking and talking about the *education system*. As discussed above, qualitative research demonstrated narrow public thinking in terms of the purpose of, responsibility for, and parties involved in education when compared to the expert understanding of these issues.<sup>20, 21</sup> Secondly, the simplifying models were designed to give people a way thinking about *education reform* — again a topic on which previous FrameWorks’ research has shown public understanding to be limited and thin when compared with that of education experts and reformers. In this way, the models were designed to get people to a place in their understanding of education and reform where they could begin to appreciate the importance, see the relevance, and perceive the need for more specific innovative educational policies.

After identifying the gaps in understanding, the second phase of the simplifying models research process aimed to generate a set of candidate simplifying models that were then empirically explored and tested in the third research phase. The result of the design process is a list of both metaphorical categories (e.g. “Navigation,” “Team Play,” “Adjusting”), and multiple iterations or “executions” of each category (e.g. “Education Reform as a Compass,” “The Education System as a Baseball Team,” “Education Reform as Remodeling”).

FrameWorks works with a linguist, who analyzes all transcripts from the “mapping the gaps” phase of the research process and generates a list of metaphor categories that represent common ground, or overlap between the experts’ and general public’s use of metaphorical language and concepts. The linguist generates metaphor categories that capture the *process* element of the expert understanding in metaphors that, given the data gathered from members of the general public, have the potential to be easily visualized and incorporated into thinking about the target issue (i.e. the education system and education reform).

FrameWorks’ researchers specialized in cultural models and cognitive theory conduct a cognitive analysis of the model categories, which examines the *expected* public response to the metaphors based on cultural models theory and existing FrameWorks research on cultural models that Americans employ in understanding education and related social issues. Researchers then use this analysis to review the categories — adding new possibilities and suggesting categories that may be cut from the list. At this stage, researchers also compare the candidate metaphors to the data from the initial cultural models interviews. Metaphor categories that contain elements or aspects of models found to be damaging or distracting in the public’s thinking about the topic are suggested as categories to be eliminated from the candidate list. On the other hand, simplifying model categories containing elements of more productive cultural models are highlighted as particularly promising.

During the process of designing candidate simplifying models, FrameWorks also assesses the models' abilities to be incorporated into practice by journalists and advocates/practitioners. In some cases, this practical assessment has suggested that some candidate models are too provocative or insipid to pass into the public discourse. These models are removed from the working list. The refined list is then returned to the linguist who begins to compose iterations or executions of the categories on the list. The list of categories and iterations is sent back to FrameWorks' researchers for additional revisions.

## **PHASE 3: TESTING SIMPLIFYING MODELS — THREE TESTS OF MODEL EFFECTIVENESS**

### **TEST I: ON-THE-STREET INTERVIEWS**

As the initial opportunity to test candidate simplifying models, on-the-street interviews present an ideal opportunity to gather empirical data on the effectiveness of candidate simplifying models — which specific elements of the models are functioning well, and which aspects are less successful in clarifying concepts and shifting perspectives.

FrameWorks tested a total of eight candidate simplifying models in three locations in Phoenix, Arizona in March, 2009. Each candidate model was presented to two informants in each of three locations for a total of six interviews per model, comprising a total set of 48 10-15 minute interviews. All informants signed written consent and release forms and interviews were video and audio recorded by a professional videographer.

The eight models tested represented executions of six candidate simplifying model categories (i.e. Tools, Exposing, Navigation, Adjustment, Remodeling, Team Play). Multiple iterations of the "Navigation" category were explored as they represented executions of the category that were significantly distinct to warrant independent testing (i.e. "highway" and "compass").

Data from the interviews were used to winnow and refine categories as well as to refine the individual executions of metaphors within categories.

#### *Subjects*

A total of 48 informants were recruited and interviewed. The first 16 of these informants were recruited through a professional marketing firm, using a screening process developed by and employed in past FrameWorks' research. These informants were selected to represent variation along the domains of ethnicity, gender, age, educational background and political ideology (as self-reported during the screening process).

The remaining 36 informants were recruited on site in two other locations in the Phoenix area. A FrameWorks researcher approached individuals on the street and asked if they would be willing to participate in a short interview as a part a research project on "issues in the news." The recruiting researcher paid particular attention to capturing variation in gender, ethnicity and age. Data on each informant's age and party affiliation, as self-identified, were collected after the interview.

Efforts were made to recruit a broad range of informants. However, the sample is not meant to be nationally representative and the demographic categories used to identify the quotes of interviewees in the text should not be mistaken for categorical reflections of the viewpoints of any particular group. Although we are not concerned with the particular nuances in how individuals of different groups respond to and work with the simplifying models tested in these interviews, we recognize the importance of between-group variation, and take up this interest in quantitative testing of simplifying models — where the virtues of quantitative sampling techniques can effectively and appropriately address issues of representativeness and across group variation.

### *The Interview*

FrameWorks had the following goals in designing and conducting on-the-street interviews: (1) identify particularly promising simplifying model categories, (2) refine those categories with more mixed results and (3) eliminate highly problematic categories, in which the underlying *concept* created problems that could not be overcome by refining existing or designing new executions. FrameWorks' approach to this winnowing process is highly conservative to assure that only the most unproductive categories — those that are beyond repair are eliminated. However, winnowing is a necessary feature of a process that intentionally produces a large set of possible iterations, but that culminates in only one or two of the most effective simplifying models.

More specifically, interviews were designed to gather data that could be analyzed to answer the following questions:

- A. Did the informants ***understand*** the model and its underlying metaphor?
- B. Did they ***apply*** the model to talk about the education system?
- C. Did they ***apply*** the model to talk about education reform?
- D. Did the model ***shift*** discussions away from the dominant thought patterns that characterized the initial responses?
- E. Did exposure to the model ***lead to more articulate answers and robust, fully developed conversations*** of issues that informants had problems discussing prior to being exposed to the model?

The interview began with a short series of open-ended questions that dealt with the education system and education reform. The interviewer then discussed one of the candidate simplifying models using a memorized but conversational script. Following this exposure to the simplifying model, the researcher asked informants a second series of open-ended questions designed to gauge the effect of the simplifying model in shifting perspectives on the education system and education reform and in facilitating more robust conversations around these issues. Some of these questions were reformulations of the initial questions using different language so as not to appear repetitive. The interviewer also presented informants with an issue that education reformers are currently dealing with (changing contexts requiring new skills sets, i.e. 21<sup>st</sup> century skills) and asked what they would do about the situation. Finally, informants were asked to

explain an education situation or problem that was familiar to them to see if the candidate simplifying model was used in structuring their narration.

## TEST II: QUANTITATIVE EXPERIMENTAL RESEARCH

After analyzing on-the-street interview data, FrameWorks subjected the refined set of simplifying models to an online quantitative experiment. The overarching goal of this experiment was to gather representative and statistically powerful data on the models' effectiveness. These data then provided an empirical basis to select one or two models that were most successful relative to a set of theoretically driven outcome measures. In the end, experimental data were used to select and refine two models that were then taken into the final stage of the empirical testing process.

In June of 2009 FrameWorks conducted the survey, which measured the performance of 14 candidate simplifying models and metaphor categories in relation to a set of outcome measures. Survey participants were drawn from a national online panel and data were weighted on the basis of gender, age, race, education and party identification to ensure that the sample was nationally representative.<sup>22</sup>

### *Experimental Design*

Following exposure to one of 14 “treatments” — paragraph-long iterations of candidate metaphors — participants answered a series of questions designed to measure a set of theoretically-based outcomes. Effects were compared both across and within categories — meaning that general categories were tested against other general categories, and specific iterations were tested against other iterations both within and across categories. Outcomes measured included: *understanding, application, effect on policy reasoning, attribution of responsibility and agency.*

### *Treatments*

Coming into the experiment, results of on-the-street interviews were used to winnow the set of candidate model categories from six to three to include the following: *Tools, Adjustment* and *Team Play*. In designing the survey instrument, multiple iterations were generated by a linguist as alternative representations of the larger metaphor categories. For example, the *Adjustment* category included the following iterations: *Remodeling* and *Car Tune-Up*, while *Team Play* included: *Baseball or Football Team* and *Orchestra*. In addition to testing and comparing specific iterations within and between categories, the categories themselves (*Adjustment, Team, Tools*) were tested to allow a more general comparison and to triangulate results of iteration comparisons.<sup>23</sup>

A total of 14 different treatments were developed — 11 specific simplifying model iterations and three general category treatments. Each treatment was tested with 250 participants. Each treatment consisted of an initial paragraph that used the metaphor (or, in the case of the general categories tested, the foundational concept behind the metaphor) to explain the education system and education reform. Each metaphor was also given a name — for example, the “Tool Belt Challenge.” Finally, as a “set up,” study

participants were told that the metaphor was pulled from a recent education editorial. The following is an example of a treatment used in the experiment:

**The Tool Belt Challenge:** In a recent editorial on education, John Wilson wrote that our nation’s success depends on our ability to make all the tools in our tool belt available. He says supporting education as a tool belt with accessible tools means realizing its potential to achieve our societal goals. For example, school districts might regularly review the tools in their tool belt. This would ensure that the education system meets the needs of students and society. Seeing education as a tool belt with accessible tools makes the job of education reformers clear. Like carpenters, who must have their tools accessible and know which tools to use, we must match the strategies we use in our educational system to the goals we want to achieve in our society. We must also make sure there is a good fit between tool belt and task. Have you read or heard others refer to education as a Tool Belt Challenge?

Each treatment included examples and entailments derived from the metaphor. For example, “accessibility” was an entailment discussed in the Tool Belt Challenge. This created some variation across treatments, but was necessary to ensure that treatments stimulated imagery and activated the metaphor in the minds of participants in order to have an effect on the relevant outcomes. This said, variation was limited and the overall setup of each treatment was essentially parallel. That is, even though some specifics varied, the setup of the paragraph (i.e. first line and exposition of the editorial’s aim; second sentence an initial link between the metaphor and the educational system, etc. ...), remained uniform across the set of treatments. This balance of *variation* between models and *standardization* in construction and language was meant to ensure that any differences in effect were due to differences between the models themselves, and not to some unintended confounding variable.

### *Data Collection*

In the experiments, participants were asked to respond to a brief series of introductory questions where they rated their level of concern about a set of political issues unrelated to education. To avoid contaminating the effects, these issues were both broad and rotated each time the survey was administered. Following these questions, subjects were assigned and exposed to one of the 14 treatments. Subsequently, participants were asked to answer a set of questions specific to their treatment.

### *Outcome Measures*

After receiving the treatment paragraph, participants were asked a series questions to test each model’s performance in relation to five outcome measures.

- A. **Understanding** questions were designed to gauge the participant’s grasp of the source domain (Orchestra). In other words, these questions gathered data on whether the participant understood, for example, what an orchestra is, and how it functions.
- B. **Application of Source onto Target Domain** was measured through a series of questions in which participants were asked to map the metaphor (i.e. a tool belt) onto the issue of

education reform — essentially examining how well participants were able to connect each model to the issue of education.

- C. Policy Reasoning** was measured by questions that examined the ability of the metaphors to direct participants toward policy solutions that focused on systems, rather than on individualistic solutions like increasing student motivation.
- D. Attribution of Responsibility** was gauged through a set of questions on which participants indicated who they thought was most responsible for addressing and improving education in America.
- E. Agency** was tested through a set of questions that measured both the extent to which the metaphors served as a kind of “call to action” and their impact on how participants saw barriers to taking action.

Participant answers to each of these sets of questions were computed and then a cumulative score was generated.<sup>23</sup> Subsequently, all treatments were compared based on their score.

### TEST III: TALKBACK TESTING

After using quantitative data to select the most effective model(s), FrameWorks conducts TalkBack Testing to answer two general research questions: (1) *can* and *do* participants transmit the model to other participants with a reasonable degree of fidelity? and (2) *how* do participants transmit the model? In other words, the method examines how well the simplifying models hold up when being “passed” between individuals, and how participants use and incorporate the models in explanation to other participants.

#### *The TalkBack Testing Session*

A TalkBack Testing session begins with two participants. The researcher presents one of the candidate simplifying models and asks the two participants a series of open-ended questions designed to gauge their understanding of the simplifying models and their ability to apply the model in discussing the target domains (the education system and education reform). For example, the researcher asked how the participants understood the simplifying model; what they imagined the source domain (i.e. Orchestra) referred to; and how the idea presented related to the education system and education reform. Questions and analysis were also designed to locate any terms or ideas in the execution of the model that participants had difficulty with or explicitly recognized as problematic.

After 15-20 minutes of discussion between the two initial (hereafter referred to as “Generation 1”) participants and the interviewer, Generation 1 was informed that they would be “teaching” the simplifying model to another group of two participants (Generation 2). Generation 1 was given five minutes to design a way of presenting the simplifying model, after which they had five minutes to present the simplifying model to Generation 2. Generation 2 then had five to ten minutes to ask Generation 1 questions about the presentation. During this time the interviewer

generally allowed dialogue to unfold naturally between the two groups but periodically probed for additional information on ideas that emerged.

Generation 1 then left the room and the interviewer asked Generation 2 an additional set of questions designed to elicit their understanding of the simplifying model and ability to apply the concept. This questioning lasted for approximately 10 minutes, at which point Generation 2 was informed that they would be “teaching” the idea, to two new participants (Generation 3). Generation 2 had five minutes to plan their presentation after which Generation 3 entered the room and the two groups went through the same steps and questions as described above.

A TalkBack Testing session ends after Generation 2 has left the room and the interviewer has finished asking Generation 3 about their understanding of and ability to apply the idea that Generation 2 has taught them. The session ends with the researcher asking Generation 3, hypothetically, how they would present the idea that Generation 2 taught them.

For the education research discussed here, FrameWorks tested a total of two candidate simplifying models (Orchestra and Remodeling) in three locations: Baltimore, Maryland; Boston, Massachusetts; and Milwaukee, Wisconsin in July of 2009. Each candidate model was tested in four TalkBack Testing sessions, with at least one session in each of three locations. All informants signed written consent and release forms prior to participating in the sessions, and interviews were video and audio recorded by professional videographers.

### *Subjects*

A total of 48 informants participated in TalkBack Testing. These individuals were recruited through a professional marketing firm, using a screening process developed by and employed in past FrameWorks’ research. Informants were selected to represent variation along the domains of ethnicity, gender, age, educational background and political ideology (as self-reported during the screening process) for reasons mentioned above.

### *Analysis*

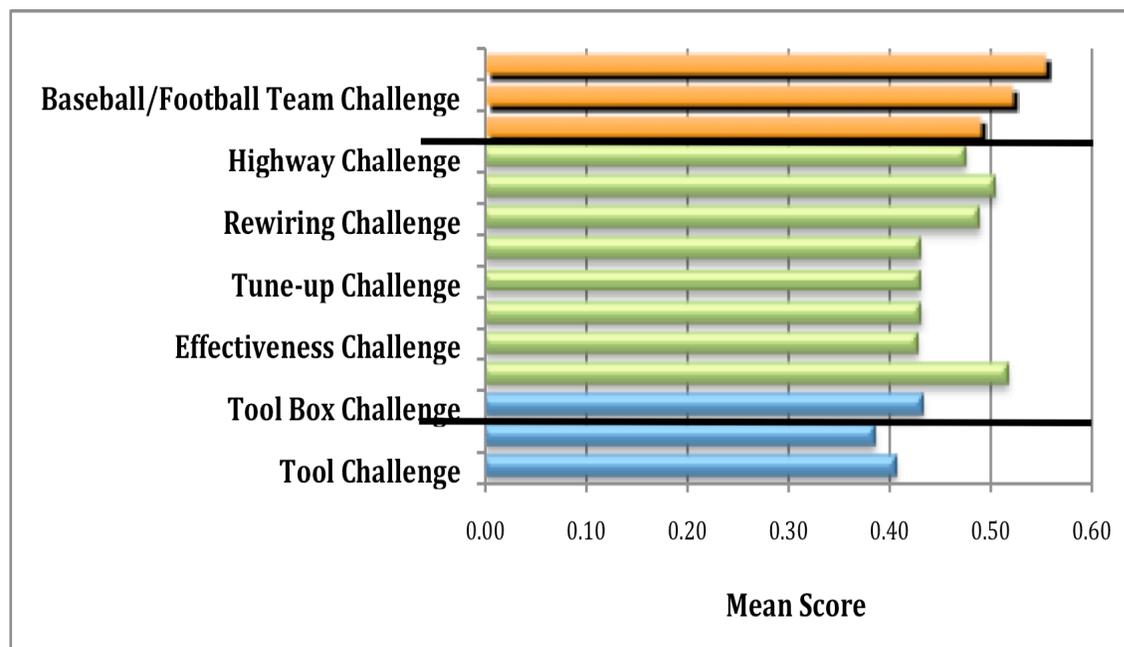
In analyzing data from TalkBack Testing, FrameWorks sought to answer the following specific questions in relation to each simplifying model:

- A. *Were* participants able to **apply** the simplifying model to talk about the education system and its reform; and more specifically *what* were the ways in which they applied the model?
- B. Was the simplifying model **communicable**? Was Generation 1, 2, and 3’s presentations of the simplifying model faithful to the initial model presented by the interviewer? How did the groups’ presentation of the model differ from that presented by the interviewer (i.e. did they use different language, different ideas related to the metaphor, emphasize different entailments etc.)?
- C. Did the simplifying model **inoculate** against the dominant default cultural models? That is, did the model prevent discussions from falling back to the dominant unproductive cultural models? Furthermore, if one of these cultural models did become active, did the

simplifying model prevent the discussion from veering narrowly in these perceptual directions?

- D. Did the simplifying model *self-correct*? That is, if one Generation's presentation was not faithful to the original simplifying model or left out a key component, did the ensuing Generation's interpretation and/or presentation self-correct? For example, if Generation 1's presentation of the Orchestra metaphor did not discuss the role of a conductor, or included only a discussion of teachers and students, did Generation 2 re-insert the conductor idea and re-expand the parties involved?
- E. What specific *language* did the groups use in discussing the model? Was there language that participants used that was not included in the original execution of the simplifying model?

## Appendix B: Results of Quantitative Experiment



### NOTES

<sup>1</sup> For more about SFA, see <http://www.frameworksinstitute.org/sfa.html>.

<sup>2</sup> See: Lévi-Strauss, C. (1963). *Totemism*. Translated by Rodney Needham. Boston: Beacon Press and Lévi-Strauss, C. (1966). *The Savage Mind*. Chicago: University of Chicago Press.

<sup>3</sup> For more information on FrameWorks' research on education see <http://www.frameworksinstitute.org/education.html>.

<sup>4</sup> For more detail on this earlier qualitative research, see: Chart, H. and N. Kendall-Taylor. "Reform What?: Individualist Thinking in Education: American Cultural Models on Schooling." Washington, D.C.: FrameWorks Institute 2008. And, FrameWorks Institute, "Enough Blame to Go Around: A Focus Group Analysis of Education and Reform: A FrameWorks Research Report," Washington, D.C.: FrameWorks Institute 2009.

<sup>5</sup> FrameWorks. "The FrameWorks Approach," Washington, D.C.: FrameWorks Institute.

<sup>6</sup> Quinn, N. *Finding Culture in Talk: A Collection of Methods*. New York: Palgrave Macmillan. 2005, p. 3.

<sup>7</sup> A more in-depth discussion of the theoretical underpinnings of simplifying models can be found both in a FrameWorks working paper titled, "An Empirical Simplifying Models Research Process: Theory and Method" and in the FrameWorks' Webinar "Simplifying Models: What they do, Why they matter, and Where they come from" at <http://www.frameworksinstitute.org/simplifyingmodels.html>.

<sup>8</sup> See: Iyengar, S. 1991. *Is Anyone Responsible? How Television Frames Political Issues*. Chicago: University of Chicago Press. And, Iyengar, S. and Donald R. Kinder. 1987. *News that Matters: Television and American Opinion*.

Chicago: University of Chicago Press.

<sup>9</sup> Chart, H. and N. Kendall-Taylor. “Reform What?: Individualist Thinking in Education: American Cultural Models on Schooling,” Washington, D.C.: FrameWorks Institute 2008.

<sup>10</sup> For more detail on this earlier descriptive research, see: Chart, H. and N. Kendall-Taylor. “Reform What?: Individualist Thinking in Education: American Cultural Models on Schooling,” Washington, D.C.: FrameWorks Institute 2008. And, Frameworks Institute, “Enough Blame to Go Around: A Focus Group Analysis of Education and Reform: A FrameWorks Research Report,” Washington, D.C.: FrameWorks Institute 2009.

<sup>11</sup> In addition, due to similarities between Adjustment and Rebuilding, these categories were collapsed into one more general “Adjustment” category. For more on the analysis of these interview data see, Kendall-Taylor, N. (2009). *A Viewer’s Guide to Simplifying Models Research: On-the-Street Interviews with Ordinary Americans*. Washington, DC: FrameWorks Institute.

<sup>12</sup> For more information on the results of the on-the-street interviews see, Kendall-Taylor, N. (2009). *A Viewer’s Guide to Simplifying Models Research: On-the-Street Interviews with Ordinary Americans*. Washington, DC: FrameWorks Institute.

<sup>13</sup> We specifically made use of the national Web-based surveys conducted by YouGov Polimetrix. YouGov Polimetrix requires its two million panelists to participate in weekly studies in exchange for free Internet access. To match those participants to our survey, a two-stage sampling procedure is utilized that creates a “matched” sample. That is, first a conventional random sample is drawn, and Polimetrix subsequently mirrors the conventional sample by selecting panelists who most closely resemble each member of the random sample.

<sup>14</sup> These 11 iterations represent alternative executions of the three most effective categories from within the larger set tested in on-the-street interviews that proved most effective. The experiment tested three iterations of Tools, three iterations of Team and five iterations of Adjustment.

<sup>15</sup> See Appendix B for a graphic representation of the results from the quantitative experiment.

<sup>16</sup> “Inoculation” refers here to the fact that, when given an alternative way of thinking about the education system and its reform, people can access more latent patterns of thinking to resist dominant default patterns that they most readily apply.

<sup>17</sup> For a detailed discussion of the difference between the way that simplifying models and other frame elements are *tested* versus how they are *applied* by advocates, see: Bales, S. (2009). *Testing Frames, Talking Frames: Framing as Experiment and as Execution*. Washington, DC: FrameWorks Institute.

<sup>18</sup> FrameWorks Institute. *Strategic Messaging Framing During the Economic Downturn: Remembering the Long View*. Washington, D.C.: FrameWorks Institute 2009.

<sup>19</sup> Chart, H. and N. Kendall-Taylor. “Reform What?: Individualist Thinking in Education: American Cultural Models on Schooling,” Washington, D.C.: FrameWorks Institute 2008.

<sup>20</sup> Frameworks Institute, “Enough Blame to Go Around: A Focus Group Analysis of Education and Reform: A FrameWorks Research Report,” Washington, D.C.: FrameWorks Institute 2009.

<sup>21</sup> We specifically made use of the national Web-based surveys conducted by YouGov Polimetrix. YouGov Polimetrix requires its two million panelists to participate in weekly studies in exchange for free Internet access. To match those participants to our survey, a two-stage sampling procedure is utilized that creates a “matched” sample. That is, first a conventional random sample is drawn, and Polimetrix subsequently mirrors the conventional sample by selecting panelists who most closely resemble each member of the random sample.

<sup>22</sup> Results suggesting the strength of an iteration in one category relative to an iteration from another category were further supported by differences in performance at the category level. For example, if Orchestra performed better than Piano Tuning we would also expect the Team Play category to outperform the Adjustment category. Therefore category findings served as supporting evidence in deciding which models to bring into the next stage of testing.

<sup>23</sup> More specifically, for each question given to respondents we created a variable that took the value of “1” if the respondent answered correctly on the test or a “0” if they chose one of the opposing answers. Then, we averaged the number of correct answers on the test questions and divided by the total of questions – which gave us an overall test “score.” For ease of interpretation however, answers to questions regarding agency, which were not based on a “correct” or “incorrect” scoring system, were not included in these calculations.