Policy Entrepreneurship in an Emergent Domain: Advancing Innovation in Non-Cognitive Factors From the Federal Level

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Policy Entrepreneurship in an Emergent Domain:
Advancing Innovation in Non-Cognitive Factors from the Federal Level

Doctor of Education Leadership (Ed.L.D.)
Capstone

Submitted by

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To the Harvard Graduate School of Education
In partial fulfillment of the requirements for the degree of
Doctor of Education Leadership.

May 2015
Dedication

For my beloved father and first teacher, Jagdish (Jack) Narayan Saxena, who ensured his daughter would always be in the driver’s seat.
Acknowledgments

I am grateful to many people and organizations for their generosity, wisdom and encouragement in the work that supported this capstone and my year as the Raikes Foundation Fellow on Non-cognitive Factors and Learning at the United States Department of Education. I am especially indebted to Jeff and Tricia Raikes, the Raikes Foundation and the Carnegie Foundation for the Advancement of Teaching for their vision in creating and supporting this new role, and for their readiness to partner with Harvard and the Department on my residency. I consider myself supremely lucky to have had amazing colleagues within the Department throughout the year, including Ashley Bittner, Marisa Bold, Brad Jupp, Max Lubin, Camsie McAdams, Sujeet Rao, Ahnna Smith, Marianna Vinson and Ursula Wright, and the fellow Fellows of the STEM team, Ellen Lettvin and Julia Mundy. I benefited from their collective wisdom and leadership, and from the mentorship of Assistant Deputy Secretary Nadya Chinoy Dabby, an insightful, unrelenting leader of and advocate for equity and innovation.

The members of my committee each brought a different lens and set of expertise to encourage my learning and development. Elizabeth City is a brilliant, indefatigable and compassionate leader of learners. I am grateful to have been her advisee and to have trained with such a strategic thinker and doer. Thomas Hehir gifted me with his extraordinary experience in leadership at the federal level, and his commitment to empowering all learners. Russ Shilling, head of the Department’s STEM team, brought his incredible background in research and development, and the openness to jump into this residency experiment. Thanks also to my outstanding TF, Janine De Novais.

Many truly outstanding professors contributed to my development. I am indebted to Andres Alonso, Monica Higgins, Deborah Jewell-Sherman, Lisa Lahey and Eileen McGowan for their insight, patience and generosity. Deb Helsing and Bob Goodman provided supportive and insightful coaching and friendship.

So many people have believed in me, and inspired my residency journey. My dear friends Deepa Ghosh, Kristin Frenzel-Regen, Yung-Mei Haloski, and Margaret McCreary Seguin, together with their partners and families, created a loving and welcoming community for me in D.C. Harriet Patterson always knew exactly when I needed a dose of her wisdom and love from across the country. Charles Lang provided his signature generosity, expert skepticism and wry humor. Kim Frumin gifted me with a second home base in Cambridge and just-in-time mentoring that helped create peace among the chaos.

I am continually amazed by the love of my EdLD and Cohort 3 family. I am grateful to my peer coach, Anda Adams, for her compassion, active listening and our Monday night calls. C3- you are the most brilliant, honest and beautiful people. I am thankful for how we consistently struggle with love, how we encourage each other, and how we acknowledge each other’s humanity. I see each and every one of you, and know the future of our sector is in good hands with each of you in the mix.

I am thankful for my family, especially my mother, Santosh Narayan Saxena, and my brother, Tushar Saxena, who have believed in and valued my education.
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Abstract

I served as the Raikes Foundation Fellow on Non-Cognitive Factors and Learning within the U.S. Department of Education’s Office of Innovation and Improvement during the 2014-2015 academic year. So called non-cognitive factors are the intrapersonal and interpersonal skills and attitudes which, in combination with cognitive skills, enable students to successfully navigate the learning tasks of school and the unpredictable, multilayered challenges of life beyond school. The Department seeks to drive innovation and improvement in non-cognitive factors to support three of its main goals: increasing college and career readiness for all students, narrowing achievement gaps and safeguarding equity for historically under-served and marginalized populations of students. Energy is growing across the education sector to prioritize non-cognitive factor teaching and learning in national reform efforts. However, much progress and collaboration is required to develop common understanding, identify valid measures and expand the teaching and learning evidence base of this vast domain of constructs. Promising recent innovations, specifically related to improving academic mindsets, have yielded positive impacts and suggest new conceptions of scale. This capstone examines my efforts as a policy entrepreneur within the U.S. Department of Education to capitalize on growing momentum across the sector and a burgeoning policy window to drive innovation in non-cognitive factors. Using the lens of the Kingdon policy streams framework, I deconstruct my efforts, focusing primarily on my role in crafting a national convening on improving non-cognitive factor measure development. Applying the Kingdon framework illuminates the possibilities and challenges of policy entrepreneurship in advancing innovation within this emergent domain from the federal level, with implications for the sector, the Department and my own leadership development.
Introduction

“Cognitive science tells us that 30 percent or more of learning performance comes from motivation. But we are badly in need of practical, scalable guidance for what teachers, parents, school leaders, and students themselves can do to boost student motivation. And we are barely in the infancy of developing meaningful and easy-to-administer assessments that help us understand whether we are in fact teaching these critical non-cognitive skills.

When my sister and I ran an ‘I Have a Dream’ program on the South Side of Chicago for six years in the 1990s, we spent a lot of time and energy trying to help our children gain these skills. But to this day, I still cannot honestly tell you whether we succeeded or not.”

Secretary of Education Arne Duncan’s remarks to the National Alliance for Public Charter Schools 2013 "Delivering On the Dream" conference

A legacy of the common schools era, the modern American education sector is structured so that responsibility for educating our country’s students does not rest within the realm of any national or federal authority. Instead, local and state-level agencies share in managing the performance of schools, selecting curricula and adopting standards. And yet, the United States Department of Education (the Department) plays a vital role supporting national priorities by ensuring equity, driving innovation and distributing resources to states and local entities, shaping the American education landscape (U.S. Department of Education, 2015).

So called “non-cognitive factors,” those skills and attitudes such as collaboration and self-control that facilitate learning and achievement, are
increasingly acknowledged within the education sector as critical to student success, despite being poorly defined, measured or understood. The advent of new college and career-ready standards has sought to raise the cognitive demand of the tasks students and teachers will undertake in classrooms. This change in standards has already and will continue to expose gaps in instructional capacity and student learning, as American educators work to provide students with the right set of skills, knowledge and attitudes needed to endure in the face of rigorous academic challenge. Policymakers, scientists, practitioners and other education stakeholders are invested in identifying systematic and evidence-based approaches to developing non-cognitive factors. Innovative non-profit groups, charter school networks and school districts are experimenting with new tools and trainings to develop and assess intrapersonal and interpersonal factors in instructional practice, while the research community continues to work to understand and design effective interventions.

Education innovation can be, “any new or significantly improved product, process, service, technology, idea, or set of knowledge” (U.S. Department of Education, 2014, p. 1), that may affect anything from the entire education ecosystem to individual students. The Department seeks to drive innovation and scale improvements in non-cognitive factors to support three of its main goals: increasing college and career readiness for all students, narrowing achievement gaps, and safeguarding equity for historically under-served and marginalized populations (Federal Register, 2014). In order to achieve these goals, the
Department has already begun incorporating non-cognitive initiatives into several of its existing programs, including developing a new non-cognitive priority to use in competitive grant programs.

Within the Department’s Office of Innovation and Improvement (OII), non-cognitive factors are identified as an important priority. The potential to develop innovation in this domain of work aligns well with the Department’s draft articulation below of an education ecosystem framework, which conceptualizes that student learning improves through:

1. “Strong, foundational knowledge, including a fundamental understanding of how people learn, what helps them learn, and how various processes support learning;
2. Thoughtful design of products and processes that build from existing knowledge, innovate on that knowledge, and are readily scalable;
3. Equal and broad access to products and processes for all schools and students;
4. Smart and broad adoption of products and processes at scale;
5. Iterative feedback loops that allow for efficient information flow between each of the above steps and continued knowledge collection; and
6. Effective people and HR practices that create a nimble and able education workforce that supports the entire ecosystem” (U.S. Department of Education, 2014, p.2).

(U.S. Department of Education, 2014, p.2)
Acknowledged in this draft innovation agenda is the reality that there will be paths of innovation where the Department cannot function as the main driver, and instead must determine which paths to prioritize and “ensure that there are responsible players working on them” (U.S. Department of Education, 2014, p.5).

**The Raikes Foundation Fellowship on Non-cognitive Factors and Learning**

In May 2014, I committed to becoming the inaugural Raikes Foundation Fellow on Non-cognitive Factors and Learning, with placement at OII. Jeff and Tricia Raikes founded the Raikes Foundation, based in Seattle, Washington, in 2002 as a vehicle to help communities and “empower young people to transform their lives” (Raikes, 2015, para.8). The goal of the fellowship, as stated in the position description, was to help inform the understanding of non-cognitive factors as they relate to learning and student outcomes (Raikes, 2014).

I was drawn to the role because of my own observations as a student and educator. Through my experience navigating the difficult transition from a low-performing public school system to college, and later while working in high-poverty New York City neighborhoods, I saw firsthand how students and families of color struggle to survive within brittle systems of civic, educational and family supports. I often witnessed very smart but poor kids too stressed out to focus, too emotionally overcome to engage, and having internalized negative messages about their own capacities to learn, belong and flourish in an academic setting. These experiences growing up in economically depressed communities
and working in high-poverty New York City schools led me to believe that the purpose of schools needed to focus beyond equipping students with content mastery or fluency. Schools must also be organized to actively develop the interpersonal and intrapersonal capacities students need to be in the driver’s seat of their learning, enabling them to thrive as kids, young adults, college students and productive economic actors in the world.

At every school or out-of-school program where I worked, instructors devoted substantial efforts to teaching skills like collaboration, metacognition and motivation to prepare students for success in school, college and life. This work was often done in furtherance of academic goals, in an intuitive fashion, and without the support of learning infrastructures that promote the systematic development of these traits for all students. This work was also often done in opposition to existing incentives and remained invisible to accountability frameworks.

While non-cognitive factors are a broad domain, the fellowship provided an opportunity to focus on policy implications with an emphasis on academic mindsets, learning contexts and the tactics students use to support their learning (Raikes, 2014). Inherent to an effective fellowship, the Fellow would lead collaborative efforts across the Department, and develop an approach to advancing innovations in non-cognitive factor policy, research and practice. Instead of a specific charge, expectations for the work and leadership were broadly outlined, and could have included advancing recommendations from a
May 2013 White House convening on academic mindsets; using federal convening power to mobilize non-federal actors and resources; and working with the Department’s Institute of Education Sciences (IES) and other researchers to identify where non-cognitive factors research and practice could be advanced to have the most impact (Raikes, 2014).

This capstone examines my efforts within the U.S. Department of Education to capitalize on growing momentum across the sector and a burgeoning policy window to drive innovation in non-cognitive factors. My goal is to show how I, while operating within complex contexts, worked to exploit a nascent policy window and impact capacity-building and innovation in non-cognitive factors. In what follows, I first introduce my review of knowledge for action and theory of action. I then describe the details of my efforts and review the results, followed by an analysis using the lens of the Kingdon policy streams framework. Applying the Kingdon framework illuminates the possibilities and challenges of policy entrepreneurship in advancing innovation within this emergent domain, with implications for the sector, the Department and my own leadership development.
Review of Knowledge for Action

In preparing to build the conditions for innovation and scale in developing non-cognitive factors, I put specific components of two large domains of knowledge into conversation: 1) the complexities of non-cognitive factors, including theoretical and practical knowledge regarding elements of scale; and 2) organizational theory explaining the culture and processes that guide decision-making within public institutions.

The Complexities of Non-Cognitive Factors

In 2012, the National Research Council issued, “Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century,” delineating three different types of knowledge and skills – cognitive, intrapersonal and interpersonal – that students need to successfully navigate the learning tasks of school and the unpredictable multilayered challenges of life beyond school. Cognitive knowledge and skills relate to the mastery of specific content domains like mathematics or biology. Interpersonal knowledge and skills include those abilities needed to effectively work with others, including cooperation and communication. The cluster of intrapersonal knowledge and skills includes constructs such as metacognition, academic mindsets and self-control (National Research Council, 2012).

Depending on the organization or context, intrapersonal and interpersonal knowledge and skills can be bounded in specific ways to be referred to as hard-to-
measure skills, deeper learning abilities, twenty-first century competencies, student agency, productive persistence, character or non-cognitive factors. Some of the terms used for capturing these bundles of constructs may be associated with a specific political or ideological significance, so that the use of character education, social-emotional skills, and even student agency may unwittingly convey specific sociopolitical leanings. The Department has adopted the use of the term “non-cognitive.” As West (2015) notes, the use of the term “non-cognitive” aligns with the view of former IES Director John Easton: “Everybody hates this term but everyone knows roughly what you mean when you use it and no one has a much better alternative” (Easton, 2013, p.7).

Compounding the complexity of this domain, different terms circulate to describe similar constructs. Lack of agreement around basic nomenclature and definitions make this domain of work especially difficult to promote and discuss across the sector. The below IES constructed comparison of three leading non-cognitive research syntheses (e.g., the Collaborative for Academic, Social and Emotional Learning (CASEL), the Chicago Consortium on School Research (CCSR), and RTI International), reveals different prioritization of terms and constructs across outcomes (Doolittle, 2014).
Interest in non-cognitive factors is growing in part because of beliefs in their importance to long-term life outcomes. Recent scholarship demonstrates that these factors provide a high return on investment in terms of labor, health, schooling and social outcomes. In their meta-analysis of over 200 studies examining school-based social and emotional interventions, Durlak, Weissberg, Dymnicki, Taylor and Shellinger (2011) found that when compared to controls, students who participated in social and emotional programming gained an average of eleven percentile points in achievement.

“Character skills foster cognitive development. Greater malleability of character skills is found over longer stretches of the life cycle than for cognitive skills. . . Investment in character skills in the early years has a higher economic return than investment in the later years because it builds the base for subsequent investment. Nonetheless, the productivity of later-age investment in character skills is substantial. If the early years
have been compromised, it is more effective in the adolescent years to focus on developing character skills rather than on cognitive skills.” (Heckman, 2013, p.85)

Growing popular debate considers the malleability of these factors, and what roles a school community or teachers can or should have in the development of these skills. In his widely cited 2011 New York Times article, “What if the Secret to Success is Failure?” journalist Paul Tough examined the character education integration efforts of two very different schools in New York City, and advocated for greater urgency in adopting character development as a core component of schools. Easton cites recent teacher value-added studies examining outcomes such as college attendance and adult income as evidence that a teacher’s real impact may not be captured by effects on student test score gains which fade out after several years. “The implications of this finding are pretty obvious: an overemphasis on test scores may steer teachers away from helping students develop non-cognitive skills (another narrowing of the curriculum) and many highly effective teachers will not be identified by a sole focus on student test scores” (Easton, 2013, p.10).

Social psychologists, economists and behavioral scientists are driving growth of the theoretical and practical knowledge base behind how non-cognitive factors may impact student performance in school. In 2012, Camille Farrington of CCSR published a large literature review of non-cognitive research and posited a conceptual model of how the different domains of non-cognitive
constructs work together and interact with the broader environment to affect student academic performance. This review draws attention to the need for more research in identifying how to develop these skills in students (Farrington, 2012).

The promise and complexity of changing mindsets within individuals and across contexts

In Farrington’s theorized model below, the learning context and academic mindsets play a foundational role in enabling student learning strategies and academic behaviors, which in turn are direct drivers of academic performance, as measured by grades, not standardized test outcomes (Farrington, 2012):

“A Hypothesized Model of How Five Non-cognitive Factors Affect Academic Performance within a Classroom/School and Larger Socio-Cultural Context” (Farrington, 2012, p.12)

Academic mindsets include such psychological processes related to student beliefs about learning, student strategies for learning, student feelings of belonging and student valuation of the learning context. Recent small
Interventions targeting student mindsets within specific learning contexts have demonstrated significant and sustained positive effects. Whether learners understand their own intelligence as being fixed or able to grow has a significant impact on their motivation and approach towards taking on challenging tasks. Students who believe their intelligence grows with effort are more likely to seek out academic challenges and learn from critical feedback (Dweck, 2000).

Interventions aimed at helping students adopt a growth mindset, or change from believing in one’s own capacity to learn as fixed to believing incremental shifts in intelligence are possible through effort, have been particularly significant. Early experimental evidence suggests a possible causal relationship between growth mindset interventions and academic performance, and that small interventions can have seemingly large and lasting impact. Blackwell, Trzesniewski and Dweck (2007) found that when compared to students randomly assigned to a control condition, math achievement increased for middle school students who participated in a series of short workshops exposing them to messages about the brain’s malleability and the dynamic nature of intelligence. Ongoing research by the Project for Education Research that Scales (PERTS) lab at Stanford University is now testing a modified version of this intervention through an online module across middle schools and high schools.

A sense of social belonging is a foundational need for all students within a given learning context, but often difficult for students from historically marginalized and minority populations to realize (Walton & Cohen, 2011).
Several impactful non-cognitive interventions have been found to effectively address this belonging uncertainty. Walton & Cohen (2011) exposed college students to alternative explanations for the academic challenges they experienced, helping the students realize social adversity at college is normal and fleeting. The effects of this intervention included powerful impacts on health and grade point average outcomes for Black students. The effect of the intervention lasted over the subsequent three years, halving the achievement gap between Black and white students (Walton & Cohen, 2011).

Changing student mindsets may lead to a positive spiral of decisions supporting how students interpret their role in the learning environment and strategically pursue strategies to navigate that environment. According to University of Texas professor David Yeager, “Ultimately a person has within themselves some kind of capital, some kind of asset, like knowledge or confidence. And if we can help bring that out, they then carry that asset with them to the next difficulty in life” (Tough, 2014, para.62).

Common factors undergird the design of effective mindset interventions: a fundamental and highly attuned understanding of student perceptions’ of themselves within a specific learning context. Effective mindset interventions are “designed to target students’ subjective experiences in school . . . and . . . tap into recursive processes present in educational environments” (Yaeger & Walton, 2011k, p.267). By understanding the specific effects the learning environment may have on student perceptions of their own identity, researchers can tune the
basic grammar of the intervention accordingly. In scaling non-cognitive interventions, research emphasizes the importance of replicating the psychological experience for the student over scaling the actual protocol of the intervention. In explaining the effectiveness of interventions meant to mitigate the damage done to student learning by stereotype threat, scholar Claude Steele (2015) noted in a recent presentation:

“Our research shows that the strength of this vigilance and mistrust is determined, in larger part, by the extent to which features of the school setting, and student understandings of that setting, signal to these students that they may be seen and treated in terms of negative views of their group. That is, the degree of alienation that these students feel stems from features of the setting and from understandings of the setting as much or more as from personal characteristics they bring into the setting” (Steele, 2015, para.2).

The complexities of measurement

Ensuring that innovations and promising interventions in non-cognitive factors reach and effectively serve high-need students could accelerate progress in closing achievement gaps. To systematically support the effective teaching and learning of non-cognitive factors, the sector needs reliable, valid and practical measures of non-cognitive skills, which are actually considered hard to measure. Measures enable key components of the education ecosystem framework, including building of the knowledge base and developing iterative feedback loops. “Good measurement can help us in at least three different ways: It can facilitate scientific inquiry and add to scientific knowledge as we turn data into
information; it can improve communication between different stakeholders; and it can catalyze productive and positive responses or behaviors” (Easton, 2013).

In 2012, Mathematica produced a landscape analysis of non-cognitive measures, yielding 196 separate instruments mostly related to the middle grades and covering four major domains of constructs: mindsets, social capital, goal setting and management, and metacognitive skills (Atkins-Burnett, Fernandez, Akers, Jacobson & Smither-Wulsin, 2012). This volume of measures reflects in part the little consensus as to how to define most constructs, which skills are most important to student outcomes, and how to reliably measure and develop them. This lack of consensus is problematic: “Absent consensus on these points, educators cannot rely on available measures of non-cognitive skills or their underlying theories of personal development to assess and support individual students or to evaluate the success of schools, teachers, or interventions” (West, Kraft, Finn, Martin, Duckworth, Gabrieli, & Gabrieli, 2014).

Over 2013-2014, the RAND Corporation conducted interviews and meetings with 75 researchers, practitioners, policymakers and funders who had participated in meetings on non-cognitive factors sponsored by the White House and The William and Flora Hewlett Foundation. In October 2014, RAND published a report, *Measuring Interpersonal and Intrapersonal Competencies: Promoting High-quality Research and Development*, which synthesized the feedback from the interviewed stakeholders to find that the development of non-cognitive assessments in the field has likely outpaced the research base, and to suggest the
following principles to develop measures of hard-to-measure interpersonal and intrapersonal competencies:

- “thoughtful development: Development efforts should be conducted in an efficient, organized, and responsible manner.
- practical measures: Measures should be easy to administer and score, convenient to use in a range of learning contexts, and affordable for schools.
- high-quality measures: Measures should have adequate reliability, validity, and fairness to support their specific uses.
- appropriate uses: Uses should have the potential to improve educational outcomes or policies and avoid causing negative consequences.
- valued outcomes: Measures should emphasize skills and competencies that support college, career, and civic readiness, i.e. preparation that qualifies students to engage in postsecondary academic study, to train for high-quality employment, and to become engaged citizens of their communities.” (Stecher & Hamilton, 2014, p.23)

RAND added three additional principles related to the prioritization, sequencing and the utilization of evidence that could promote development of high-quality measures. The urgency of developing high-quality measures of non-cognitive skills is shared by a wide universe of stakeholders hoping to see a dramatic change within schools:

“In the next few years, measures will be widely available for schools to assess students’ social and emotional skills. These measures can guide and support practice, moving social and emotional learning from a specialty activity led only by counselors to an integrated part of daily instruction. Soon, the public belief in the importance of skills such as ‘dependability, persistence, and teamwork’ may match what schools actually teach.” (Kendziora, 2015, “What’s next,” para.2)

The complexities of scale

A recent convening of non-cognitive practitioner organizations identified
four obstacles to scaling non-cognitive interventions: competing for capacity on district agendas, inadequate training of educators, poor school environments and a lack of measurements (Farnham, 2015). Scaling educational interventions involves effectively translating an innovation in one setting to use across a breadth of contexts. This has proven extremely hard to accomplish in the American education sector. Schools change all the time; the problem of scale in educational innovation is not a failure of research, or lack of knowledge, or the system’s resistance to change (Elmore, 1996). “The primary problem of scale is understanding the conditions under which people working in schools seek new knowledge and actively use it to change the fundamental processes of schooling” (Elmore, 1996, p.4). Easton (2009) echoes this sentiment, calling for approaches to scaling that are driven by iterative processes to address problems of practice, an ideal vision for how work gets done in schools. “Schools are not simply accretions of discrete programs, practices and interventions – no matter how innovative. Instead, they are learning organizations that use data for continuous improvement, for making good decisions and for many changes, tweaks and revisions to their practices” (Easton, 2009, p.3).

Any innovation seeking to scale and improve student outcomes must be designed to positively intersect with the context and variation of the learning environment. Scaling successfully may mean translating research into findings or models that consider varying local needs and resources (Clarke, Dede, Ketelhut, Nelson & Bowman, 2006). As Means and Penuel (2006) note, “local decision
makers need research findings that shed light on the expected effects under different circumstances and on the contextual and implementation factors that are likely to influence success” (p.177).

Non-cognitive policies or interventions that aim to strengthen student success should be designed to allow for, and acknowledge, adaptation to the context and systems within which learning takes place. Classrooms, schools and communities are complex social systems, and relationships flow through and across these systems (McDermott, 1977). Relationships are a critical input to learning and student success. Within the instructional core, learning places students, teachers and content together to construct a task. The quality and accountability for this task lies directly within the domain of the student-teacher relationship, as “students do not simply learn what is taught but invent their own algorithms and conceptions of content” (Doyle, 1983, p.178). Learning is inherent to social acts, and should be viewed as a social practice co-constructed between many people and parts of a system or community (Lave & Wenger, 1991). The psychological processes inherent to the mindset interventions described above are inherent to identity and classroom practice, in part because they are embedded in the relationships between student and context.

A key feature of a white paper presented at a May 2013 White House convening on the importance of academic mindsets suggests shifting the standard effectiveness paradigm of “what works” to a more of context-dependent framing of what works for whom, and how (Yeager, Paunesku, Walton &
Dweck, 2013). The authors identify scientific principles, practices and assessments (practical measures) as the foundational enabling conditions to allow for scale within the domain of mindsets. They also propose several elements to further research on the scientific principles of academic mindsets, stressing that such research is needed both in the methodology required for customization of mindset interventions across diverse contexts, and in the understanding of how brief interventions affect students’ self-reinforcing learning within their contexts. Specific recommendations include testing how much or whether personalizing interventions increases the robustness of their impact across diverse student populations, and conducting experimental studies to monitor and capture immediate and ongoing intervention effects in changes to student behaviors and learning, a capacity that “will be increasingly possible as learning happens online and student work and communications are captured in real-time” (Yeager, Paunesku, Walton & Dweck, 2013, p.19).

Effective researcher-practitioner partnerships, marrying theoretical and practical expertise in the scaling of interventions, allow researchers and teachers to collaboratively learn, continuously iterate and improve effectiveness based on observable data and robust feedback loops as an intervention is developed in context (Yaeger & Walton, 2011). Under the leadership of Tony Bryk, the Carnegie Foundation for the Advancement of Teaching has launched Networked Improvement Communities, including a new K-12 focused Student Agency Improvement Community, undertaking systematic study of researchers and
practitioners working to boost the achievement of students through rapid iterative evaluation and learning cycles. These student agency pilots across five school districts, including high-poverty schools, and productive persistence pilots in remedial mathematics courses in community colleges, all draw from a driver diagram of mindsets and strategies focused on equipping students with the know-how to persist when faced with difficult learning challenges. The below sample of a Carnegie mindset driver diagram from their K-12 Student Agency Improvement Community lists the various mindset outcomes that support an overall aim of buttressing students through successful completion of coursework.

![Carnegie mindset driver diagram](image)

Carnegie Foundation for the Advancement of Teaching Student Agency Improvement Community draft mindsets improvement diagram (Carnegie, 2014)
This improvement methodology aims to complement the traditional notions of scale that value “what works” or implement fast and scale wide, with a “how it works” conception that values learn fast and implement well as an intervention is rapidly iterated upon in context by practitioners and researchers. (Bryk, Gomez, Grunow & LeMahieu, 2015).

The Organizational Context of Public Institutions

Exactly how the federal government, which is mostly detached from implementation and distant from implementers, can best drive innovation and support the scale and adoption of evidence-based interventions in the development of non-cognitive factors for students across a range of contexts is an emergent opportunity. In delineating the federal government’s role, one must note that it “lacks both the financial and operational capacity to enact its policy goals independently” (Elmore, 2006, p.6). Instead, the federal government must use “its limited leverage in a concentrated way to ‘borrow’ the capacity of states and localities for its own ends” (Elmore, 2006, p.6). Exactly in which ways the federal government should design specific tactics to advance innovation and scale in non-cognitive factors is really a question of how it can best use its limited resources to enable the policy conditions for and strategically exploit incentives, structures and capacity on the ground (Elmore, 1986). If done well, the federal government can foster conditions for both school-based and top-down approaches to catalyzing and sustaining change across the sector.
As a Fellow, I anticipated that I would be identified as an in-house resource on non-cognitive factors, but would have little positional authority or control over resources, and would need to quickly find my way within the organization. Working at the scale of the federal level, I understood however that “individuals are goal-oriented but imperfect in their cognitive abilities to understand the contextual environment that they must navigate for goal achievement” (Weible, Heikkila, Sabatier, 2012, p.5). To operate and affect change within a small area of a vast federal agency and system, three principles guided my approach: develop deep understanding of a policy subsystem; invest in building networks of relationships, and contribute for an extended period (Weible et al., 2012).

Former University of Michigan professor Michael Cohen developed a “garbage can model” to explain the decision-making process for policymaking, which sits within and is caused by a culture of “organized anarchy” common to public institutions (Cohen, March, Olsen, 1972). Cohen identifies organizations as “organized anarchies” by their embodiment of three traits: problematic preferences, unclear technology and fluid participation (Cohen et al., 1972). “Problematic preferences” denotes an inconsistent set of priorities that guide decision-making across the organization, which can operate more as “a loose collection of ideas than as a coherent structure” and discovers its preferences through actions (Cohen et al., 1972, p.1). “Unclear technology” highlights how,
although an organization is able to reproduce and survive, its own internal mechanisms for decision-making “are not understood by its members,” and so operating by trial and error, “the residue of learning from accidents of past experience, and pragmatic inventions of necessity,” (Cohen et al., 1972, p.1) becomes normalized. Lastly, fluid participation points to the wide and constantly dynamic variation in time and energy that participants in the organization can commit at any one time (Cohen, 1972). “As a result, the boundaries of the organization are uncertain and changing; the audience and decision makers for any particular kind of choice change capriciously” (Cohen et al., 1972, p.1).

Identifying how decisions and change are driven at the federal level is an especially murky task, “because the phenomena involved are so . . . incompletely understood” (Kingdon, 2011, p.2).

My experience working in the large bureaucracy of the New York City Department of Education compelled me to believe that understanding the organizational and operating context of the Department would be key to my effectiveness as an operator there.

**Draft Theory of Action:**

My initial theory of action became focused on building the capacity within the Department to understand and effectively use knowledge of non-cognitive factors in fostering impact for the students most in need of these supports. In focusing on building internal capacity, I acknowledged my own lack of
positional authority and control over resources, and the need to both amplify my influence and develop other non-cognitive champions within the Department. By focusing on raising the salience of the non-cognitive factors, especially mindsets, through organizational learning, I hoped my efforts would be catalytic across the Department.

Therefore, my theory of action at the start of the residency became, If I:

• Can create pathways to understand the policy subsystem;
• Invest in building networks and relationships with specific teams or offices;
• Connect the need for non-cognitive innovation to the Department’s mission and goals on equity and closing the achievement gap;
• Provide opportunities to educate individuals with needed knowledge in service of designing solutions and supporting the success of students;
• Build visibility and learning within the Department and partner organizations;

Then I will have:

• Improved the understanding of the importance and complexity of non-cognitive factors within the Department
• Built the capacity of the Department to utilize an understanding of non-cognitive factors in impacting student’s lives
- Empowered specific teams/individuals to continue building on and championing non-cognitive efforts in the future
- Supported the success of specific policy priorities and goals

I came to quickly understand that the above theory of action would not be tenable within the environment.
Description

“If my future were determined just by my performance on a standardized test, I wouldn't be here. I guarantee you that.”

- Michelle Obama, February 17th, 2008 campaign speech in Madison, Wisconsin remarking on No Child Left Behind

The Opportunity

I joined the Department as a Fellow excited to make a contribution in working at a national scale, believing in the fundamental role of the federal education agency as the guarantor of and advocate for equity. I also looked forward to having a fundamentally different experience from my prior professional roles, the majority of which have been centered around New York City, working with non-profit organizations and the school district in developing and managing programs that provided direct services to students and communities. I prided myself on keeping a tight connection between strategy development and strong implementation on the ground, and wanted to grow that capacity — working from the federal level to closely connect with what must happen in practice to achieve policy objectives and impact student outcomes.

I also came in knowing I had a lot to learn about federal policymaking and practice, the breadth of the non-cognitive landscape, the Department’s priorities, constraints and relationships, and what innovation could mean in non-cognitive practice and research. Just prior to joining the Department, I connected with the
Carnegie Foundation for the Advancement of Teaching, securing their support of my learning around the research and practice base of intrapersonal competencies like academic mindsets.

Colleagues told me Fellows occupied an interesting space at the Department by maneuvering between, while not being fully part of either, the small, but powerful political appointee community and the larger, long-term career community of federal employees. My immediate community was firmly ensconced within the newly constituted Office of Science, Technology, Engineering and Mathematics (STEM), composed of two other Fellows and an Executive Director. All three of these colleagues had joined the Department just a few months prior to my arrival. The team did not administer any direct funding, had not been officially recorded on any organizational charts, and was in the very initial stages of identifying what operating or teaming structures, mission, and strategy would guide its existence. These indicators pointed to a lack of institutionalization of the STEM team within the Department, which I attributed to our newness.

I felt I had faced few constraints in designing the fellowship work and my time as a resident. The Department was also undergoing an accelerated transition of political appointee staff and policy priorities, with the advent of a national mid-term election and the final two years of the Obama administration. This transition highlighted the vigorous and fast-paced nature of change and
decision-making at the Department, as well as the narrowing window for
driving agendas and leaving a legacy of impact.

As part of the entry process starting in late July 2014, I was supported in
getting up to speed in understanding the organizational structure and dynamics
of the Department, connecting with key people in other offices, agencies and
within the philanthropic world.

**Phase one: assessing needs, understanding the subsystem, investing in networks**

In order to understand the vast array of initiatives and interest related to non-
cognitive work at the federal level, I spent much of my first few weeks seeking
out and meeting political appointees, career staff and Fellows within the
Department (including IES), across other agencies and the White House. I
organized these series of meetings as pathways for introduction, for informal
learning, as a needs assessment, and also as a way to identify subsystems and
invest in networks. As an organizing lens, I adopted a few framing questions for
myself: What strategic lever could best position the Department in its support of
innovation and scale throughout the field?; What is the federal government’s role
in creating conditions for fostering innovation in non-cognitive factors?

This pathway of informal learning and network-building continued for the
duration of my work at the Department. As the series of mostly one-on-one
meetings began, I quickly realized I could and should call on the skills I had
strengthened through the community organizing work I had done, connecting on my own story of how and why I became passionate about the importance of non-cognitive factors and exploring shared values around closing achievement gaps, supporting vulnerable student populations, and really believing in the potential of all students to excel as self-directed learners. I generally led these meetings with questions that allowed me to understand the other person’s career journey to the Department, their perspective on what got them excited about their work at the Department, their entry point into the work of public education, and what the opportunities or intersections for non-cognitive factors could be within their sphere of influence.

My initial findings from the needs assessment revealed real strengths, several tensions and challenges which together became my initial understanding of the operating context. They also provided insight into how the operating environment had intersected with and in some cases amplified the complexity and incoherence of understanding non-cognitive factors at the Department.

- There was significant interest in non-cognitive factors across several programs and initiatives in the Department, but wide variation within both the career and political communities in understanding the non-cognitive factor domain, the research and the definitions of specific constructs.
- There was significant shared interest at the Department and at the White House in the work popularized by journalist and author Paul Tough, especially related to academic mindsets and the construct of grit. There was
less interest or energy in work associated with concepts deigned “social and emotional” learning.

- A tremendous portfolio of research related to mostly interpersonal constructs was underway at IES. This fact and any findings from this work had little penetration within the Department outside of IES.

- A tension existed about utilizing “non-cognitive factors” as the preferred terminology at the Department, as opposed to “social and emotional skills”, “student agency” and “21st century competencies”. Almost every conversation I engaged in began with a comment or question related to my use and acknowledgement of the term “non-cognitive.”

- There was an absence of understanding of what work or grants in non-cognitive factors may have already been underway at the Department. An informal and small non-cognitive “working group” had been briefly constituted in the year before my arrival. Its main membership had left the Department and the group left no artifacts or resources behind from which to learn.

- A shared frustration with the limited number of interventions (of any domain) that could meet the high randomized-controlled-trial evidence-bar of the What Works Clearinghouse, and further frustration with the limited examples of an effective intervention (of any domain) that had scaled. None of the colleagues with whom I spoke endorsed a specific theory of scaling.

- A shared emphasis on catalyzing, accelerating and mobilizing the field.
• There were limited explicit structures, systems or norms related to
  information sharing, collaboration, teaming and performance.

As I conducted this outreach, I also assessed the demand for non-cognitive
factor capacity by the many requests for information and assistance I received.
This was the beginning of my understanding of the breadth of the “organization”
within which I was operating. These requests for capacity and information
included:

• Delivering a brown-bag talk on non-cognitive factors for the Office of Science
  and Technology Policy (OSTP) at the White House.

• Responding to a request from Roberto Rodriguez, Special Assistant to the
  President for Education within the Domestic Policy Council (DPC), in
generating ideas to highlight non-cognitive work within upcoming White
  House events.

• Assisting OSTP and DPC in advancing research in non-cognitive factors
  through a White House convening. At the request of OSTP, I was asked to
  connect with the Hewlett Foundation and work on defining the goals and
  strategy for a convening on non-cognitive measure development.

• Responding to a request from the Department’s Deputy Secretary to develop
  and present a non-cognitive strategy proposal to the board of Project Grad, a
  leading school turnaround non-profit organization, as part of the My
  Brother’s Keeper initiative the Deputy Secretary was leading.
Guiding dimensions for focusing the work

From these findings and the requests for my capacity I quickly found myself responding to, I developed a set of guidelines to focus the development of my work. I wanted my efforts to:

- Be connected to positive impacts on student achievement in the short and longer terms, considering first, second and third tier effects.
- Serve as a catalyst to innovation, improvement and scale in non-cognitive factors.
- Build on the current momentum and emerging interest about non-cognitive factors, and help craft a narrative that would mitigate any politicization.
- Drive sustainability, the development of structures and systems that affect learning, innovation and practice on the ground, and within the Department.
- Provide a win-win opportunity within the Department, aligning with the priorities of OII.
- Allow me to have a specific role helping teams understand who I am, and how they and their work could benefit from integrating an emphasis on non-cognitive factors.

Phase two: defining the work and context boundaries– an emergent strategy

After identifying my findings and guiding principles, I began to formulate the right intersection of opportunities, interest and methodologies to enable innovation that would support those students who could benefit the most from
improvements and innovation in non-cognitive work. I knew I wanted to make a real impact by building capacity within the Department so that my work would be generative far beyond the length of the fellowship. My vision was to empower a team of colleagues committed to learning, and committed to reaching those students who could benefit the most from mindset supports. However, the project I initially designed was not approved, with feedback that its focus was unclear, potentially too narrow and not impactful. I initially felt this disapproval as a huge embarrassment, but also saw it as a test revealing what I could better understand about the organization’s underlying values and how to work in this system. Later, I would come to better realize that this lack of approval protected me from pursuing work that would not have been perceived as valuable, and pushed me down a more catalytic path.

**Developing a new theory of action and a new approach**

I worked quickly to reformulate a new approach, adopting the guiding questions of: What would it take to build a foundation to seed and scale non-cognitive factors as a priority across the sector to impact practice for the students who need these supports the most? In reformulating my theory of action, I looked to Kingdon’s understanding of policy streams and agenda-setting. Kingdon adapted the Cohen framework in his efforts to explain why certain issues are prioritized and how opportunities for action develop. Kingdon’s framework includes focus on three processes: problem definition, policy
proposals and politics. As illustrated by the figure below, the successful convergence or exploitation of those three streams can help open or navigate a policy window that allows for action and impact (Henry, 1992).

Adopting the Kingdon lens resulted in focusing on three different buckets of work to make a catalytic impact: 1) drive visibility and organizational capacity, 2) catalyze and communicate to new audiences about mindsets through the use of the bully pulpit and/or promoting technology-enabled tools, and 3) develop an action-oriented convening to drive the research and
development of practical measures. Therefore my theory of action evolved to - If I can:

- Build visibility and learning within the U.S. Department of Education and partner organizations;
- Connect the need for non-cognitive innovation to the Department’s mission and goals on equity, college and career readiness, and closing the achievement gap;
- Provide opportunities to educate individuals with needed knowledge;
- Build a convening to develop strategic partnerships supporting investment in non-cognitive measure development;
- Harness the help of key stakeholders whose collective positional powers are needed to enable change;
- Develop conscious approaches to engage leaders to reinforce the non-cognitive priority;
- Get the Department to empower and catalyze new audiences around integrating non-cognitive factors in their work;

Then I will have:

- Improved the problem definition / understanding of the importance of non-cognitive factors within the Department and across other stakeholders;
- Generated policy proposals supported by a diverse set of stakeholders;
Influenced and engaged decision makers;
Navigated the policy window to advance capacity and conditions for non-cognitive innovation and scaling

Below is an illustration of the theorized process (Louis, 2007, p.7) of how my strategic work aligned with my draft theory of action (also see Appendix A).

Phase Three: Executing on the promise of the Fellowship

I will focus the bulk of my discussion and analysis on the measures convening stream of work to highlight this theory of action, after providing brief descriptions of the other strategies.
Driving Visibility and Organizational Capacity

While there was a growing but greatly varied interest in non-cognitive factors across the Department, few institutionalized resources or systems existed for learning across teams. Because the complexity of the operating environment and the complexity of non-cognitive factors could make engaging with this domain of knowledge difficult, I felt it important and strategic to raise visibility and build internal understanding around non-cognitive factors. I promoted learning about non-cognitive factors through discussions, investing in networks, disseminating research, speaking at events and generally trying to be a highly visible resource across the organization. Through meetings, I connected with a range of actors on the importance and relevance of non-cognitive factors, including members of: the Office of Elementary and Secondary Education, the Office of the Under Secretary, the Office of the Deputy Secretary, the My Brother’s Keeper team, the Teaching Ambassador Fellows, the charter school team, the community colleges group, the early learning program office, the Office of Education Technology, the Office of Career, Technical, and Adult Education, the STEM team, the National Center for Education Research (IES), the White House’s Domestic Policy Council and Office of Science and Technology Policy, as well as external philanthropic actors and non-profit organizations. I also provided technical assistance by consulting on talking points, briefings and presentations at the request of various colleagues and teams. As the possible fruits of this work are diffused throughout the
organization, I was very gratified to see John King, Secretary Duncan’s Senior Advisor entrusted with the responsibilities of Deputy Secretary, serve as a discussant at a March 31, 2015 panel hosted by the Brookings Institute entitled, “Ready to Be Counted? Incorporating Non-cognitive Skills into Education Policy.”

**Catalyzing and Communicating to New Audiences about Mindsets**

To hasten impact across a range of contexts, I sought to leverage the Department’s vast networks and catalyze new audiences about the importance of mindsets. I wanted to create an opportunity to support the collaboration of educators, technologists and researchers in designing new tools or in integrating non-cognitive science into online platforms (e.g., Edmodo) that had significant market reach. This effort would also incorporate the “practice into research” model of continuous improvement that supports collaboration “to fine tune programs, interventions or regimens of activities through iterative processes that rely heavily on measurement, quick studies and refinement” (Easton, 2013, p.14). While I was able to seed and secure interest in the concept of supporting a non-cognitive education technology event across different teams and possibly an external partner, I was not able to secure the operational capacity and commitment to actually execute on such an event. I am hopeful at least one small showcasing of technology-enabled non-cognitive tools will get underway.
in the fall of 2015, and that the other seeding in which I invested my efforts will yield some impact further down the road.

**Developing an Action-Oriented Convening**

Kanter (2011) recommends convening as a key leadership strategy for enabling impactful and generative work. This strategy has become especially important to advancing national priorities and to spurring “specific action on national problems short of changes to federal law,” (Calmes, 2014, para.1) as President Obama “continues to wrangle with recalcitrant Republicans“ (Calmes, 2014, para.4) in Congress. As one of the President’s senior strategic advisors recently observed, convening allows the President to leverage his power and “demonstrate to the public how we are moving the ball forward, absent congressional action” (Calmes, 2014, para.7).

In February 2014, the Hewlett Foundation in conjunction with OSTP convened a meeting in Washington, D.C. to gauge the landscape of “hard-to-measure” skills such as academic mindsets, collaboration, oral communication and learning to learn. Myriad challenges were identified coming out of the February 2014 meeting, including the absence of systems and deliberate structures needed to foster scale. Specific obstacles cited included the need for a “pedagogical roadmap and curricula” (Hewlett, 2014, p.2) to cultivate non-cognitive skills as part of the learning path to college- and career-ready standards; the lack of “policy architecture“(Hewlett, 2014, p.2) to foster the
development of practical measures and assessment instruments; and inadequate “knowledge of how to support teachers” to develop these skills in students (Hewlett, 2014, p.2).

Following the February 2014 meeting at the White House and another Hewlett-sponsored researcher-only focused gathering at the American Educational Research Association annual meeting in Philadelphia April 2014, the RAND Corporation was commissioned by Hewlett to interview the stakeholders who had been participating in these meetings to inform a potential research agenda. RAND’s resultant report, Measuring Interpersonal and Intrapersonal Competencies: Promoting High-quality Research and Development, recommended the establishment of research coordinating boards to define and measure four specific constructs: learning to learn, academic mindsets, collaboration and oral communication.

Other main findings from the series of meetings Hewlett and the White House conducted included the need for practical measures to support the development of skills, and the integration of this domain of work into teaching and learning practice. It also tried to highlight the lack of coherence in the sector related to the development and utilization of non-cognitive research and practice, and the need for building the field to bring coherence, strategy and improvement to the myriad efforts happening across the sector. However, no specific actions or proposals had been generated, and while plans for future
meetings had been discussed, no specific theory of action or vision was in place to guide their creation.

**Connecting with The Hewlett Foundation and the White House on a hard-to-measure funders’ convening**

In mid-August 2014, I connected with The William and Flora Hewlett Foundation’s Program Officer (PO) responsible for its Deeper Learning Network, a set of nearly 400 schools supporting students to master “core academic content, like reading, writing, math, and science, while learning how to think critically, collaborate, communicate effectively, direct their own learning, and believe in themselves” (Hewlett, 2015, “What is deeper learning?”). To further its vision that all “all U.S. students will receive an excellent education centered on deeper learning,” (Hewlett, 2015, “What is the Hewlett Foundation’s role?”) the Hewlett Foundation is committed to designing effective assessments and new ways to evaluate what students know and are able to do.

In a call with the Hewlett PO, who was based in the San Francisco area, and his hired consultant based in D.C. (a former Department political appointee under the Clinton administration and a current lobbyist and consultant), I learned they were planning a convening at the White House on developing measures of hard-to-measure 21st century competencies. This convening was being conducted in partnership with the Science and Innovation Division of OSTP. While neither the exact goals nor the design of the convening had been developed, the PO and consultant were set on using a commissioned RAND
report focused on reflecting the need for measurement development as the common point of departure for the convening discussion. They also wanted to ensure participation in the convening by large national philanthropic and federal agency leaders who could fund research and development work. However, the RAND report and its findings were not yet available for review, as they were still in draft form.

From the perspective of the Department, I had the opportunity and responsibility to shape and ensure the convening would catalyze action. In designing the convening goals and understanding the need for impact, leveraging the different streams of the policy process – problems, policy and politics – effectively became my underlying theory of action.

**Defining the problem, the opportunity and goals**

Initial meetings with the Hewlett team, along with members of the OII team, focused on identifying specific outcomes for the possible convening. The initial idea Hewlett put forward centered around getting the funding community – the community of philanthropic actors and federal agencies – together to have a discussion of the RAND report, processing as a group the report’s main findings and recommendations. Hewlett envisioned that the diverse community of funding stakeholders could collectively make sense of the problem and opportunities towards developing measures, yielding specific outcomes around funding commitments to support common efforts and move research forward.
After coming to agreement we would move the date of the convening from October 2014 to January 2015, we agreed to this vision for the impact of the convening and to get more specific as to the results we wanted to engender.

To gain clarity on goals, I asked the Hewlett PO to articulate his vision for where he wanted this specific funder community, as well as the education sector, to aim. In response, the Hewlett PO posed a guiding question: “What might be the mechanism to make the whole bigger than the sum of its parts, and yet still promote the innovation and creativity we require as we collectively figure out how to improve upon the work to date?” (Hewlett Foundation, personal communication, November 12, 2014). In the visioning process, we identified three critical issues: the importance of developing “a shared understanding of the goals in a way that promotes an actual field to develop among disparate actors” (Hewlett Foundation, personal communication, November 12, 2014); the absence of a “conceptual agreement when it comes to critical thinking or collaboration, and in newer fields such as academic mindsets” (Hewlett Foundation, personal communication, November 12, 2014); and the absence of any “built-in mechanism to connect [investments in non-cognitive factors to one another]” (Hewlett Foundation, personal communication, November 12, 2014), dampening innovation. Ultimately, we needed to also seize on the current moment. Hewlett had hoped consensus could be reached at the convening on a strategy for the entire funder community to move forward. We debated the
feasibility of getting consensus, and agreed that consensus building around a single strategy in addition to getting actual funding commitments could not realistically be goals for the convening.

After much negotiation between Hewlett, the White House and myself, we settled on goals that would lead to problem solving, collaboration and impact. The invitation language focused the funders-only strategy session on specific objectives: “to explore and generate funding support for developing and implementing measures of the important yet currently hard-to-measure competencies of collaboration, oral communication, learning to learn, and academic mindsets” (Hewlett Foundation, personal communication, December 4, 2014). Specific anticipated outcomes included “building a shared understanding of relevant current and future federal agency and philanthropies initiatives related to developing measures; identifying shared high-priority needs and corresponding strategies for developing measurements; and determining follow-up initiatives and next steps for coordinating strategies of support” (Hewlett Foundation, personal communication, December 4, 2014). Hewlett also noted that, “the policy window is now temporarily open for a renegotiation over how we might collectively redefine the core of education” (Hewlett Foundation, personal communication, December 4, 2014).
After a series of in-person and virtual discussions about the design of the convening agenda, we decided to include a combination of presentations that could help elucidate the problem and enable actual action to occur. We solicited presentations from organizations funding the development of non-cognitive measures to reveal the varied theories of action funders were using to inform their investment strategies, as well as explain the current lack of coordination and resultant incoherence in the research and development of measures. We hoped to demonstrate that measure development is critical for learning and innovation, and that while there is tremendous activity in the space of measure development, efforts are happening in isolation. This isolation meant investments were failing to build in any strategic fashion, nor helping to improve practice. We procured short presentations from the Social and Behavioral portfolio of the National Center for Education Research and Special Education Research at IES, from the assessment division within the National Center for Education Statistics at IES, the National Science Foundation (NSF), from the John Templeton Foundation and from Hewlett’s Deeper Learning portfolio. All of these presentations represented substantial and sustained investments in measuring hard-to-measure competencies.

In order to engage the community of prospective invitees around the RAND report and its findings, we arranged to release the report in conjunction with a webinar hosted by the President’s Senior Advisor on Education, the
Hewlett PO and one of the RAND report authors. The hour-long webinar, held on October 7, 2014 attracted over 100 registrants.

**Generating proposals**

The RAND report was commissioned and viewed by Hewlett as a central common point of departure for the convening. The report’s one suggestion for action – the establishment of coordinating research boards for interpersonal and intrapersonal constructs – had not however been tested with prospective stakeholders. The RAND recommendation suggested the proposed boards secure multi-year mandates to reflect the multiple years needed to develop and validate measures. The boards would also need to be composed of policymakers, funders, researchers, and practitioners representing a range of disciplines to responsibly guide the measure development process. RAND had been careful to note that this recommendation was the product of the synthesis from their stakeholder interviews. No specifics as to the time, cost, technical or political feasibility were part of the recommendation. Accordingly, we decided to engage stakeholders and get their feedback on the goals of the convening as well as the RAND recommendation.

One of the initial conversations we held was with leadership at IES, who raised the caution that by the time any coordinating board could be established, several years would have passed along with any opportunity to get work done by the current Administration. Instead, we were encouraged to think of faster
and looser strategies for collaboration in advancing funder support for research and the development of measures.

Simultaneous to this process, the Hewlett PO had shopped the idea of the convening and the RAND report within the philanthropic community, garnering interest from a range of foundations, including those with already strong engagement in the area of non-cognitive factors, to those with little engagement but who were eager to learn and contribute. Over a series of discussions I had with the Hewlett team, we came to agreement that the RAND coordinating board recommendation would not be the sole vehicle for collaboration presented at the convening, as it could not engage the wide range of stakeholders representing varying levels of expertise and interest.

In early November 2014, we began a series of conversations with the RAND team to develop alternative solutions for collaboration across a range of easier to bigger lifts, along with guidance as to the timeline and the financial, technical and political feasibility of each new prospective solution. RAND produced a set of six additional recommendations, which we narrowed to four. These included convening an expert panel to identify the “low-hanging fruit” of developing new measures; creating a pooled fund to support research teams (akin to a competitive grant process); developing a research and development center that could serve as a hub of research and a leading national voice for non-cognitive factors; and finally creating a coordinating research board. In addition, the Hewlett PO had already given RAND a modest grant to pilot building a
repository of measures being developed and used in the field, in hopes of also cataloguing some evidence of their effectiveness. We decided the four options and the Hewlett repository would all be presented at the convening for stakeholders to consider and amend as draft strategies for collaboration and engagement. We also would ask the participants to join a “leadership taskforce” for those who wanted to help steward the community forward.

In preparing the pre-reading for the convening invitees, I worked with the Hewlett PO to succinctly summarize and organize the RAND report and the set of straw-man draft proposals into an eight-page document, helping our stakeholders have an easily accessible common point of departure coming into the meeting. (See Appendix B for convening pre-reading.) In preparing for the moderated panel presentations, I also worked with Hewlett to send out a pre-convening survey in mid-December to assess the needs and goals of our invitees. While the survey had a limited response rate, the survey responses helped craft guiding questions for the panelists, who in addition to describing their current efforts were asked to include their theories of action, gaps in investments and overlooked opportunities for impact.

Before the 2014 winter holidays, I learned that OSTP and Hewlett were especially interested in moving RAND’s research and development center idea forward. OSTP soon scheduled an evening meeting for January 8th, inviting the Hewlett PO and program director, the head of NSF, the IES commissioner, myself and the President’s Senior Education Advisor.
Engaging people and politics - getting the right people in the room

To encourage discussion and engagement, our target goal was to keep the number of participants attending the convening relatively small at 75 people, with a good mix of representation from the national philanthropies, NSF, the Department and the White House. In preparing the invitation list, Hewlett drew from the attendance lists of prior meetings and their work with the national philanthropic community. OSTP asked to add policy topic sessions to the latter part of the convening day, so that members of the different White House policy initiatives who were not involved in the measures discussion could join. Hewlett added a pre-convening dinner and a post-convening reception to the agenda. All of these opportunities for meeting were envisioned as places to get work done, foster collaboration and share knowledge.

I consulted heavily with my OII colleagues about who the right Department people would be to invite to the convening. Many senior Department roles had turned over since I had arrived, including the Deputy Secretary and the OII chief of staff, and several new key people had started. Ultimately, the invitation list included the Secretary’s chief of staff, the Assistant Secretary for Elementary and Secondary Education, the Deputy Secretary’s chief of staff, the head of the Office of Career, Technical, and Adult Education (OCTAE), and a dozen others. Similarly, I consulted with NSF to identify the right potential invitees who could lend rich perspectives as both scientists and prospective funders. We designed the convening to encourage as much
collaboration between different groups, including assigning seating at tables, having prompts and breaks to encourage new connections, and allowing participants to choose which breakout topic sessions to attend.

January 8th

January 8th in Washington D.C. was bitterly cold, but all participants were able to arrive safely into the district and get through the stringent White House security. The convening day was a mix of whole room presentations and breakout discussions. In addition to moderating the presentations and panel, I facilitated the breakout session for individuals interested in talking about RAND’s primary recommendation to develop research coordinating boards. Three other facilitators, including Hewlett staff, were simultaneously leading their own breakout sessions on the other three RAND options. The repository and taskforce ideas were presented to the large group at the end of the main agenda. Discussants from the White House, the Department and a national foundation provided synthesizing insights before Hewlett concluded the measures agenda and expanded the non-cognitive factors conversation to include the policy breakouts. (See Appendices C for the convening agenda and D for the convening notes).

Following the convening, the evening meeting at the White House presented an idea for a research and development center that could be supported
collaboratively. The head of NSF, Hewlett and the IES commissioner were asked by the White House to take up the charge to move the measures work forward.

The theory of action of the convening was to coalesce different independent problem, proposal and political “streams” in order to navigate and exploit the policy window and advance innovation in non-cognitive factors, as evidenced by specific actions or investments. By leveraging the problem, proposals and politics, I had hoped to amplify and catalyze action for real impact. Below are select results specific to the convening that demonstrate its effect on improving the salience of problem understanding among the community of attendees, and the early actions being taken by members of the funder community to adapt and advance the collaborative strategies put forward that day.

**Improved understanding of the problem**

Through the focusing event of the convening and general efforts to raise the visibility of non-cognitive factors, the problem and opportunity of creating the conditions for developing measures has had increased salience with the convening attendees. A brief post-convening survey of the philanthropic community yielded promising feedback:

“What are the most important ideas or information you learned? (Select responses)
- That there are a lot of people doing interesting and quality work on these issues, and [there is] funding coming from several philanthropic and government sources, and too little of it [is] coordinated.
- It was very helpful to have a much better understanding of the different ongoing strategies.
- Having common terminology or understanding of terminology seems to be a useful next step.
- The need to be careful about falling into the trap around prioritizing the work around the competencies that are the easiest to measure rather than those that are the most impactful for students and most feasible for teachers to impact.
- That there remains some concern (even among those interested in this topic) about proceeding towards the creation of an individual-level assessment of hard-to-measure skills that might be used with unfortunate consequences.

What are the questions you now have as a result of the meeting? (Select responses)
- What level of cooperation can be achieved among public and private funders assuming they wanted to cooperate to promote new measures?
- What would be the best structure for a coordinating board should people agree to create one?
- What is the problem we're trying to solve?
- How do you coordinate work in this field without stifling innovation, differences of opinion, unpopular ideas, etc.?
- What are the risks with aligning hard to measure competencies with accountability systems? Certainly creates a pull mechanism to generate large scale demand but serious risks around the impact this would have on the use of such assessments by teachers.
- What is the proper role of philanthropy in early stage funding for this work and how do we more effectively connect this early stage work with federal funding such as IES and NSF as well as private sector funding?
What is at least one specific action you will take following your participation in the meeting? (Select responses)

- Briefed the rest of the folks at my foundation on the meeting.
- Committed to reviewing an RFP another foundation plans to release for work in this area.
- Set up a call to explore common interests with a researcher.
- Reach out to at least one other philanthropy to have a further conversation about this work.
- Ask to serve on a new project to review measures of intrapersonal and interpersonal skills.
- Doubling down to figure out [our] engagement in this sphere.
- Follow-up with some of the participants/presenters to see if we can begin using some of the measures they are currently using as part of our goal to identify digital age skills (web literacy and 21st century skills).
- Thinking about what role hard to measure competencies should play in my investment portfolio.
- Thinking more about what actors can play specific roles across the innovation pipeline from early stage innovation to proof points and scaling and implementation (Survey responses through personal communication, January 12, 2015).

New collaborations

Several nascent collaborations are developing to move the work of the convening forward. A post-convening taskforce composed of representatives from seven major national philanthropies, the National Science Foundation and the Department is poised to create an action plan for strategic collaboration around the work of measure development. A pilot effort for building an open-access repository to aggregate existing non-cognitive measures is being
developed by RAND with support from Hewlett and possibly other foundations. Program officers from a major national foundation have been talking with their board to fund and develop a national research coordinating board. OCTAE has a significant contracting instrument to apply towards supporting the measures straw-man proposals. NSF and Hewlett are also discussing the development of concurrent, weeklong, multidisciplinary and collaborative “Ideas Labs” that could generate new research around measuring specific constructs.
Results

The table below summarizes the results I realized for my body of efforts according to the revised theory of action. The first half of the table summarizes the major results and activities I attempted to implement in alignment with specific “If” strategies, while the second half of the table summarizes the major results and activities that have resulted in alignment with the “Then” predicted impact statements. The variation in the “success to date” indicators highlights the varying degrees of success achieved to date. Of the different strategies I attempted, there is significant variability in their impact and success to date. I did not integrate my initially proposed project into this table, but if I had, its success to date would be null. The analysis that follows after the below table attempts to explain the cause and context of some of this variation.

<table>
<thead>
<tr>
<th>Theory of action “if” statements...</th>
<th>Success to date</th>
<th>Major results</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Build visibility and learning within the Department and partner organizations</td>
<td>• Met with 80+ Department and external stakeholders about non-cognitive factors</td>
<td></td>
</tr>
<tr>
<td>• Connect the need for non-cognitive innovation to the Department’s mission and goals on equity, college &amp; career readiness, and closing the achievement gap</td>
<td>• Advised on initiatives like My Brother’s Keeper, a learning session for senior political staff</td>
<td></td>
</tr>
<tr>
<td>• Provide opportunities to educate individuals with needed knowledge</td>
<td>• Developed talking points, provided briefing background to the Secretary’s Chief of Staff</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Set in motion the development of a non-cognitive grantee learning community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Developed deep knowledge of policy subsystems</td>
<td></td>
</tr>
<tr>
<td>Theory of action “then” statement…</td>
<td>Success to date</td>
<td>Major results</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------</td>
<td>---------------</td>
</tr>
</tbody>
</table>
| Improve the problem definition/understanding of the importance of non-cog | Changes in perceived relevance/salience | - Improved capacity to communicate and promote  
- Increased demand for/interest in learning about non-cognitive factors across the Department |
| Generate proposals supported by a diverse set of stakeholders | RAND generated proposals potentially taken up | - More actions taken by non-cognitive agenda champions  
- New collaborations involving new key audiences, sectors |

- Increased awareness

- Build a convening to develop strategic partnerships supporting investment in non-cognitive measure development
- Harness the help of key stakeholders whose collective positional power may enable change
- Collaborated closely with the Hewlett Foundation and RAND to develop proposals for driving non-cognitive measure investment
- Engaged 65+ senior leaders from philanthropy, the Department, NSF and the White House
- Invested in networks

- Developed conscious approaches to engage Department leaders to reinforce the non-cog priority
- Developing potential for the office of the Under Secretary/Office of Education Technology and Raikes to collaborate
- Developing potential for a non-cognitive education-technology event

- Invested in networks
- Collaborated closely with the Hewlett Foundation and RAND to develop proposals for driving non-cognitive measure investment
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- Developed conscious approaches to engage Department leaders to reinforce the non-cog priority
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- Invested in networks
- Collaborated closely with the Hewlett Foundation and RAND to develop proposals for driving non-cognitive measure investment
- Engaged 65+ senior leaders from philanthropy, the Department, NSF and the White House
- Invested in networks
| • Influence/engage important decision makers | • Engaged Roberto Rodriguez of the Domestic Policy Council  
| | • Engaging the White House Office of Science and Technology Policy  
| | • Engaged senior political Department staff, IES and philanthropic leaders  
| | • Strategic alliances, commitments generated  
| | • Increased number of partners, improved alignment of efforts  
| • Navigate the policy window to develop the capacity and conditions for non-cognitive innovation and scaling | • Better Funding in FY’16 budget?  
| | • Research accelerates through better collaboration and new structures?  
| | • Non-cognitive innovations increases, expands to new contexts |
Analysis

Over the course of the fellowship, I pursued multiple strategies to advance innovation in non-cognitive factors. What conditions helped and hindered my effectiveness? What functions did my efforts and the dynamics of the environment play? Did I contribute to successful navigation of a perceived policy window and advancing impact? As mentioned, I relied on Kingdon’s policy streams framework to construct my theory of action. I return to that framework, in addition to applying theories from Heifetz and Moore, for this analysis exploring organizational dynamics, policy entrepreneurship, my efforts within different subsystems and the adaptive challenges I faced. In mining my experiences as a common point of analysis, I support better learning and broader implications for the field in advancing this work.

Policy windows and policy entrepreneurs

Kingdon (1995) defines a policy window as an opportunity for action. Three process streams key to opening a policy window – problems, proposals and politics – evolve completely independently from one another unless brought together intentionally. The problem stream works to convey a problem that is both urgent and important. The proposal stream constantly generates ideas. The politics stream is where energy builds to tip policymakers into action (Kingdon, 1995). Kingdon believes the advancement of policymaking priorities does not
develop randomly, nor rationally, but is more akin to a process of natural selection (p.200), explained in part by how the three policy streams may intersect or diverge (Kingdon, 1995).

Kingdon (1995) notes that identifying if, and when, a window actually opens is subject to perception and interpretation. The window within which I was operating was not a traditional window that could, for example, result in new legislation being passed, but rather a relatively small window constructed by the Department’s political appointees. Even without legislation or dedicated non-cognitive funding, I believed a non-cognitive window existed after recognizing the confluence of several indicators and actions in the environment:
the adoption of a new non-cognitive priority to utilize in competitive grant programs; the beginnings of creating grant competitions using that priority; the integration of academic mindsets within the My Brother’s Keeper framework; the White House’s increasing interest in and engagement; the creation of the Raikes Foundation Fellowship; and the widespread popular penetration of journalist Paul Tough’s articles and books underscoring the importance of grit and character development for student success. Despite the end of the Administration quickly approaching, an uncompromising Congress growing in its intransigence, and the increasingly rapid turnover of senior political staff, the Department had created an opportunity to advance non-cognitive factors as an
important issue at the margins of its other work. The opportunity for impact such a window could present would include the use of the bully pulpit, the commitment of new resources or the assignment of existing resources to move work forward.

Relative to that window, I was effectively operating as a policy entrepreneur in my role as the Raikes Foundation Fellow. Kingdon (1995) notes policy entrepreneurs, found anywhere within or outside government, are defined by their readiness to devote their resources and reputation in advocating for their cause. Kingdon also considers policy entrepreneurs as instrumental “in the coupling at the open policy window, attaching solutions to problems . . . and taking advantage of politically propitious events” (Kingdon, 1995, p.165). A key role of a policy entrepreneur is to get their issue serious consideration by constantly introducing and testing new ideas, a process which Kingdon refers to as “softening up” (p.128), and that targets policy communities which tend to be “resistant to change” and “inertia bound ” (p. 128). Depending on the issue and the broader climate, the softening up process can often take years before participants are receptive to action. A great deal of my efforts, from delivering talks to generating a stream of proposals in promoting non-cognitive factors, were spent on softening up the Department and a broader policy community composed of mostly national philanthropies. While I was able to communicate
basic information and talking points about non-cognitive factors to a wide range of audiences, the complexity inherent to this domain and the unknowns surrounding how to develop these constructs in schools significantly affected the efficacy of my advocacy efforts.

According to Kingdon (1995), three personal characteristics shape a policy entrepreneur’s influence within a policy community. First, entrepreneurs have a certain “claim to hearing” (p.180) – that is, some reason that compels others to listen to what the entrepreneur has to say. Such a claim is bolstered by the entrepreneur’s perceived expertise, whether they represent a large and powerful constituency, and whether they are in a position of “authoritative decision-making power” (p.181). Second, the breadth and nature of the entrepreneur’s political capital and connections enhances or mitigates the entrepreneurial power. Third, persistence at investing personal time and energy to keep going is critical. Kingdon also mentions a fourth factor – readiness – which affects an entrepreneur’s influence, but is based more on timing and luck. Being ready to get things done and capitalize on a window before it opens is important, as windows are short lived, hard to predict and open infrequently (Kingdon, 1995).

In assessing myself against these criteria, “expertise,” as conveyed by my role as a Fellow, affiliation with the Harvard Graduate School of Education and prior work with New York City public schools, was my sole “claim to hearing.”
Otherwise, there really was little reason for stakeholders to hear me out. I represented no larger community, and as a Fellow had little positional power nor control over resources. Being brand new to the Department and a national policy community, I had few political connections initially, although I worked actively over the duration of the fellowship to improve the strength and number of these connections. The personal attribute of persistence, as evidenced by the myriad meetings, ideas and attempts I put forward into softening up the community, became my greatest source of influence; that persistence was bounded by the time limits of the residency. In terms of my readiness to exploit a policy window, I had not arrived to the fellowship role with any specific pre-conceived proposals for which to advocate. Fortuitously, I was tasked with moving forward a White House convening that already had its very initial groundwork laid.

The convening allowed me to collaborate with the Hewlett team, also functioning as a policy entrepreneur, and amplify our efforts. Hewlett brought complementary “claims to hearing” in that it represented significant constituencies through its Deeper Learning Network of schools and foundation reach, and had resources to enable significant decision-making authority. The Hewlett team’s political connections, particularly within the funder community and the White House, were also beneficial.
Understanding and navigating subsystems

My personal attributes as an entrepreneur remained fairly constant through the residency, but the results from my different efforts varied. Each of my strategies attempted to influence different subsystems of the Department and its stakeholders. Mastery of a subsystem helps simplify the larger political and organizational system by creating boundaries around individuals and issues (Weible et al., 2012). Accordingly, “for individuals wanting to achieve their goals, understanding the structure of policy subsystems – e.g., who is involved, what are the boundaries of an issue, how is information shared, how are decisions made – is critical” (Weible et al., 2012, p.6).

Kingdon theory explains how I influenced each of these subsystems through proposal generation. While Kingdon (1995) stresses that the processes surrounding policymaking are not rationally organized, he highlights technical feasibility and value acceptability as two criteria essential to any proposed idea’s survival. Technical feasibility connects to assessing capacity for implementation, while value acceptability relates to aligning with the core values of people in the subsystem. In addition to these criteria, Kingdon emphasizes that engaging people with the most power in the system – the “visible cluster” of participants (p.68) – is critical if an idea is to move forward. While both visible participants and other stakeholders may indeed influence outcomes, Kingdon believes the
likelihood of an idea being successfully prioritized is contingent upon how the visible cluster is engaged (Kingdon, 1995).

Accordingly, early indicators of effectiveness stemming from the measures convening – a small attempt at coalescing problems, proposal and politics – can be attributed in some part to the fact that the convening received backing from the White House, which in turn motivated the Department’s visible cluster and the larger policy community. Similarly, other non-cognitive related ideas I developed had salience with the values of several political appointees and the Raikes Foundation, but I likely should have targeted my efforts to engage those with greater decision-making authority at the Department, such as the Under Secretary of Education, to really accelerate these proposals. I had also misjudged aspects of the proposals’ technical feasibility, as different offices struggled to identify sources of operational capacity to meet the proposed projects’ implementation requirements.

Kingdon’s framing above is not unlike Moore’s strategic triangle structure, which acknowledges that public managers are constantly navigating how to create public value, build operational capacity and secure approval from the authorizing environment in order to strategically steward work (Moore, 1995). In my prior application of Moore’s strategic triangle, I had largely adopted a rationally organized frame for decision-making. I held onto this rational frame
for too long while learning how to function at the Department. Over time, Kingdon does believe one could try to discern patterns to better dissect how to influence the system. In the meantime, he notes that these muddled processes have some merit: “It is certainly better for these entrepreneurs, and possibly even better for the system, if goals are left sufficiently vague and political events continue to be sufficiently imprecise and messy, that new innovative ideas have a chance” (Kingdon, 1995, p.183). With repeated practice, I improved at taking advantage of this messiness to advance my work and expect I would continue to grow in this capacity over time.

**Technical vs. adaptive change: understanding the values of the system**

Heifetz (2009) distinguishes solving for technical versus adaptive challenge as being focused on implementing discrete known fixes instead of developing remedies that attempt to shift entire systems, including structures and practices that may have organically developed over time. At the core of adaptive leadership practice is appropriate diagnoses of the environment to be changed. Kegan and Lahey (2009) also stress that facing adaptive challenge requires an understanding of underlying emotional barriers.

In focusing on how to operate effectively within an “organized anarchy” embodied by inconsistent preferences, unclear technology, and variable participation, I spent a lot of time and energy diagnosing the system, but lost
focus on diagnosing the adaptive challenge. Upon reflection, I realize that at a minimum, the behaviors of and functioning as an “organized anarchy” help protect the organization and preserve its capacity by enforcing a very high bar to entry. It is extraordinarily difficult to introduce new learning or initiatives, or institutionalize new work in a system like this, and rightly so. The American education sector is commonly critiqued as being plagued by fads, and so a high threshold for introducing new work into the Department is the right filtering function needed to ensure that an already immense, driven, politicized and dynamic organization is not completely overwhelmed by having to develop or execute on every new idea. This process also reflects Kingdon’s natural selection model that explains how and why ideas move onto agendas.

In addition, the Department’s efforts are, and should be, focused on producing those outcomes and outputs that enable the Department to remain viable in terms of its mission. The Christensen “jobs to be done” framework (Christensen, 2013) helps identify the core values that support an organization’s competitiveness, based on what jobs its customers need to get done. For the Department, its customers are a wide range of stakeholders across policy, research and practice, who can be roughly bundled together as the “public” as represented by Congress and the President. The Department’s core jobs to be done – that is the specific needs driven by these customers – are clear: to respond
to the priorities of the President, enforce federal regulations, distribute federal funds and generate evidence of impact as a responsible and effective steward of those funds. The streams of this work fall under the different outcomes of driving innovation, equity and equitable distribution of resources. In order to demonstrate utility and capacity to operate, the Department must be able to report how money has been distributed and what evidence of impact has been generated. This is also why the systems in place at the Department and across the broader community highly value these outcomes (disbursing funds and generating evidence).

The breakdown of my initially proposed project happened because I misjudged the challenge of the system and proposed work counter to the core values of the organization. My originally proposed project would have allowed me to work closely with the My Brother’s Keeper initiative, developing technical assistance while building team capacity within a multifaceted program. However, the Department’s norms around borrowing instead of building capacity worked in direct opposition to my proposal, a completely rational outcome given the context and the core jobs of the Department.

My effectiveness overall as an entrepreneur would have been bolstered by greater understanding of and connections to the relational and political environment, elevated status and decision-making power within the system, and
my own readiness to hit the ground running. Over time, as my understanding of
the overall relational environment and my own social capital improved, I believe
I would have become more persuasive and effective at realizing more impactful
opportunities, and at understanding my own agency. If I were to return to an
entrepreneur role at the federal level, I would be sure to have a greater “claim to
hearing,” greater political connections and would better understand how to
organize my time and efforts towards impact.
Implications for Sector

At a recent Brookings Institute event on non-cognitive factors, Chris Gabrieli of the non-profit policy group Transforming Education observed that the American education sector has a “practice rich but policy poor” (Gabrieli, 2015) approach to non-cognitive factor development. Energy and evidence are growing to prioritize the teaching and learning of non-cognitive factors in national reform discussions. In developing the pathways for innovation in non-cognitive factors, there are myriad recommendations for stakeholders to consider, including what role policy should or could play. Questions surround how to balance and advance the teaching and learning of non-cognitive factors along with content mastery, reflecting the giant complexity and scope of the task, the expansive domain of the growing non-cognitive factor knowledge base and the dynamic nature of reform and improvement efforts across a highly variable education system. The lessons learned from my brief experience as a policy entrepreneur working to advance innovation in this emergent domain have implications for the work ahead.

**Actively building the attention for, and the prioritization of, non-cognitive factors is important.** Despite the debates surrounding what to name non-cognitive factors and how to define them, the challenges of accurately measuring them and the continued complexity of understanding how to best
develop them, it is time for the teaching and learning of non-cognitive factors to move from the periphery to a priority in the national policy agenda and the work of schools. The community of stakeholders – including practice, research, funders, and policy – must actively promote non-cognitive factors to ensure momentum does not slow towards ascending the national education agenda.

Kingdon (1995) notes that “Problem recognition is critical to agenda-setting. . . Some problems are seen as so pressing that they set agendas all by themselves,”(p.198) but also cautions that problems can easily fall off the agenda as lots of issues compete for attention, complacency grows and frustration from failures take root (Kingdon, 1995).

Essential to the above is support of entrepreneurial efforts to exploit future policy windows. Again, Kingdon (1995) cites specific events, including the closing and beginning of administrations, as fairly ripe times for policy windows to emerge. Given the many unknowns and complexity of non-cognitive factors, advancing innovation in this domain may meet Camillus’ (2008) criteria of a “wicked problem.” Adopting Camillus’ recommendation to develop a “feed-forward” orientation can help envision and articulate a non-cognitive policy and practice future-state around which the sector and entrepreneurs can rally.

Collaboration provides vital opportunities for learning, innovation and accelerating impact. Significant capacity needs to be developed across the sector
in order for non-cognitive factors to take a more pronounced and prioritized focus within the work of schools and policy. Much progress and collaboration are required to develop common definitions, identify valid measures and expand the teaching and learning evidence base of this vast domain of constructs. My big learning from the measures convening was how the organizations represented there had little awareness of the efforts underway at IES, NSF, etc., and wanted to learn from one another to improve their understanding and effectiveness. Strategic and intentional opportunities for collaboration support innovation and field-building.

**Accelerating innovation and coherence across the sector requires prioritizing the needs of practice, expanding the evidence base and developing practical measures.** “Innovations can grow wild, springing up weed-like despite unfavorable circumstances, but they can also be cultivated, blossoming in greater abundance under favorable conditions” (Kanter, 2000, p.170). In recognizing the need for innovation and scale, the sector must recognize and support teachers as the fundamental agents of innovation, and construct a path forward that is designed around that understanding.

Mehta (2013) notes that the core problem of the American educational sector is solving problems of professional practice by bureaucratic means, and urges, much like Easton, that the sector move from being control oriented to
being supportive of learning. Mehta urges the development of reform efforts that grow from practice, as opposed to pushing change through performance management and accountability systems. Ideally, needs of practice would drive the creation of knowledge so that the type of knowledge created translates easily into useful classroom tools (Mehta, 2013). By focusing on practice and improvement, new models of transformation would “enable thoughtful risk-taking informed by continuous evaluation using multiple measures to inform improvement” (Darling-Hammond, Wilhoit, & Pittenger, 2014, p.2).

There are myriad efforts underway to develop the non-cognitive related learning infrastructures of assessments, curricula and teacher training. The sector must support these efforts, while also learning from and identifying effective practices and tools that are responsive to practitioner needs. Innovations or improvements in developing motivation and mindsets may be particularly empowering for teachers and students. The development of measures enables innovation and the improvement of practice on the ground. In pursuit of coherence and field-building, continuing to push the development of practical measures and the overall knowledge base will broaden and sustain the current policy window, as well as strengthen the broader educational ecosystem.
Implications for Site

While educational innovation is very much driven and enacted on the ground through the work of various stakeholders, as Hess (2013) notes, “only the federal government has the resources to provide sufficient political and financial capital to fuel systemic policy experimentation” (p.5). The Department has room to and a role in improving the education ecosystem and advancing innovation in non-cognitive factors.

Drive learning and mobilize action across the sector through an annual convening. Given the state of the non-cognitive field, the real need for the sector – at the practice, policy and research levels – is to collaborate further and increase the rate of learning about how to develop and scale the teaching and learning of non-cognitive skills. What could be the appropriate role for the Department to address this need? Convening, a lever which has gained prominence under an unproductive Congress, is a powerful tool the Department has at its disposal to build capacity and catalyze impact at a systems level. Holding an inclusive and highly visible annual convening on non-cognitive factors could institutionalize and promote this work at the Department, while allowing actors from across the sector to engage productively and take action. Additionally, the Department could use the annual convening as a platform to highlight its diverse and growing body of non-cognitive investments and initiatives, and disseminate new
promising research or practices. This work would align with point five of the Department’s ecosystem framework, which highlights the need for “iterative feedback loops that allow for efficient information flow” and “continued knowledge collection” (U.S. Department of Education, 2014, p.2).

The Department should additionally drive improvement of key parts of the education ecosystem by incentivizing the development of the non-cognitive factor knowledge base, especially around practical measures, so that this base increases in depth and coherence. The need for “strong, foundational knowledge, including a fundamental understanding of how people learn, what helps them learn, and how various processes support learning” (U.S. Department of Education, 2014, p.2) is directly related to the promise of non-cognitive research. This work is particularly needed to support the development of the hardest-to-measure intrapersonal constructs.

In their March 2015 report, *Moneyball for Education*, Hess and Little acknowledge the promise of the recent White House measures convening and the collaborations that may emerge from it to improve the development of non-cognitive factor measures. However, Hess and Little also urge the Department to accelerate its leadership in driving the development of strong measurement and evaluation in support of local decision-maker capacity. They specifically call upon IES to “redirect a portion of existing research and development funds to
help identify a broad set of (cognitive and non-cognitive indicators) that lead to improved student outcomes, and refine them over time” (Hess & Little, 2015, p.5). Within IES, the main social and behavioral grant portfolio has dedicated less than 20% of its decade-long half-billion dollar grant-making to the development of measures, and only a handful of grants in the current social and behavioral portfolio are devoted to this domain (Doolittle, 2014). IES would like to see the proportion and volume of its grant-making in measures increase, but it is required to respond to field-initiated research and not policy priorities. The policy side of the Department can help grow the number and quality of prospective IES grant applicants interested in initiating measure development work by strengthening the pipeline of measurement-related research-practitioner partnerships. This can be accomplished by helping steward collaboration between federal agencies, funders and the research community in the creation of an expert panel to identify and craft a call for action developing practical measures of specific constructs. (An initial Project Work Statement just issued in early April by OCTAE is seeking to bid out a contract to support such collaboration and convene a technical working group.) The Department, including IES, should also engage and leverage the significant body of non-cognitive factors research activity at NSF, focusing specifically on learning more from the Social, Behavioral and Economic Sciences Directorate and its ongoing
2013 grant to SRI international: Developing Community & Capacity to Measure Non-cognitive Factors in Digital Learning Environments. NSF and other stakeholders report promising early indicators of progress in this unique grant building non-cognitive factor measurement, leadership and community in digital learning environments.

The Department has begun to incorporate a newly adopted non-cognitive factors priority into several existing discretionary grant-making programs, including tiered-evidence programs like Investing in Innovation and First in the World. This effort should continue to grow to include other programs such as the prospective Teacher and Principal Pathways program, initiatives targeting specific demographic groups, and initiatives targeting achievement in STEM fields.

Yeager (2015) suggests the need to study the practices of positive outlier teachers or schools that have closed achievement gaps so that their practices can be understood and scaled. Investing in understanding what the best teachers are doing could provide model proof points and codification of good non-cognitive teaching practice (Yeager, 2015).

The Department should incentivize the rapid development of non-cognitive experimentation and practice across different contexts, as context plays a significant role in the development of certain non-cognitive skills or
mindsets. The Department may want to consider allowing grantees to explicitly use the Carnegie Foundation improvement science model of identifying what works, for whom, under what conditions, to complement the “what works” randomized-controlled and average effect size evidence model. This would include incentivizing experimentation with rapid-cycle evaluation and continuous improvement evaluation models that feed formative data back to research-practitioner partnerships. This would align with an ecosystem tenet to support “smart and broad adoption of products and processes at scale” (U.S. Department of Education, 2014, p.2).

Relatedly, the Department could help develop the school-level collective, social and structural conditions for innovation (Kanter, 2000) in non-cognitive factors. Leveraging peer-to-peer learning in schools, the Department could incentivize the development of a cadre of school-based, non-cognitive coaches (Dweck & Yeager 2013) who can codify what great practices are happening in their schools and help those practices spread. Establishing such a group with formal responsibility for non-cognitive innovation in practice means these coaches would “serve as active agents of diffusion, managing the process by which the realized idea is transferred to those who can use it. Part of their mandate [would be] to gather the information to make systematic the process of getting the innovation to users” (Kanter, 1988, p.201).
Specific to mindsets, Yeager (2015) promotes testing new interventions that can be implemented inexpensively across a wide variety of contexts to determine whether components of these interventions can be delivered in a standardized format or may require customization. The Department already has a promising early record of investing in the development of such technology-enabled tools from which to build.

In order to realize the above and build its own coherence and capacity to execute on effective strategic investing, the Department must **improve internal data systems and structures for learning**. A shared taxonomy for coding forthcoming and existing non-cognitive grants, and consistent terminology and practices to use with grantees must be adopted across the Department, including IES. Additionally, the Department may want to capture in its data systems mechanisms to identify where exactly its research-practitioner investments are being tested along with the related demographic data.

Insights that have been generated from the past decade of investments and any forthcoming data should be synthesized for lessons and practices worthy of dissemination to the policy, practitioner and research communities. Establishing small learning communities, whether between grantees or other stakeholders, would accomplish similar goals. As findings from Department-sponsored grant-making in non-cognitive factors grow, the Department’s Comprehensive
Centers, one of which (the Center for Great Teachers and Leaders) already houses rich resources in social and emotional learning, could become a hub for disseminating this work.
Implications for Self

“Our deepest calling is to grow into our own authentic self-hood, whether or not it conforms to some image of who we ought to be. As we do so, we will…find our path of authentic service in the world.”

Parker J. Palmer, Let Your Life Speak

Education is empowerment. This is a tenet I hold deeply, and guides my theory of learning, my beliefs about the importance of non-cognitive factors, my opinions about the purposes of school and the reason why I have served economically, politically and educationally disenfranchised kids and families living in high-poverty communities of color. I am motivated to do better by the love I share with hard-working kids, families and teachers, by the outrage I feel over the deep inequities our system produces, by a vision I hold for what is possible, and by a belief that the American education sector will transform for the better through shared struggle, collective responsibility and innovation.

Leadership is a set of skills and practices, and leadership development was one of the expected outcomes of the residency and fellowship experience. Policy entrepreneurship at the federal level challenged me to grow in my leadership capacity and has equipped me with new insights and sharper tools. I am restless to do more, to deepen my capacity, and to hasten the arrival of transformative change.

Communication and metacognition: clarity is a virtue when working across cultures and disciplines. From a leadership perspective, advancing
innovation and moving scientific evidence into the field to affect real change for students requires deftness in working at the intersection of the different cultures of policy, research and practice (Shonkoff, 2000). The harmonization of these separate cultures involves navigating rules of evidence, the dynamic influences of values and ideology, and understanding variation in professional practices and status (Shonkoff, 2000). “The challenge is to develop creative ways of blending all three cultures—to be open to different ways of thinking about the needs of children . . . as well as alternative strategies for mobilizing knowledge on their behalf” (Shonkoff, 2000, p.187).

Non-cognitive factors as a domain are giant in scope, not easily understood, and hard to define. Advancing impact and innovation across the highly variable American education sector from the federal level is also a big, messy, constantly shifting and hard to synthesize set of processes and goals. My own sense-making and communication capacities were greatly challenged at times as I took in huge amounts of new information about both realms. I gained clarity and built my effectiveness in those moments when I could reflect with colleagues, or when I could tell stories that narrated a vision of what I experienced and was hoping to achieve. As I continue to work in the non-cognitive education and innovation arena, I will actively build from this base to achieve greater clarity and influence while navigating the cultures of policy, research and practice.
Growth mindsets and persistence: embracing a beginner’s mind. Carol Dweck’s pioneering theoretical work on incremental and fixed intelligence finds that people who hold a fixed mindset about their ability are less likely to take on challenging tasks that could put at risk their identity as smart or capable, limiting their capacity to reach greater potential (Krakovskiy, 2007). Greater and different challenges engender greater likelihood to experience failure and also create greater opportunities to realize growth. I took the fellowship role knowing it would force me far outside the comfort zone of my prior professional experiences where I had enjoyed a fair degree of positional authority, control over resources, expertise in getting work done within the specifically-bounded context of New York City schools, and realizing quantifiable goals.

In my reading of Kingdon (1995) and in observation of others around me, entrepreneurs are consummate hustlers, who thrive off of a highly reactive, ill-defined opportunity space: “The window opens for some factor beyond the realm of the individual entrepreneur, and entrepreneur takes advantage of it” (Kingdon, 1995, p.182). Harvard Business School Professor Howard Stevenson defined entrepreneurship as the pursuit of opportunities with limited regard to resources beyond one’s formal authority or control (Eisenmann, 2013). I experienced practicing leadership as a policy entrepreneur akin to learning a new skill. Taken together, these concepts suggest that new entrepreneurs should expect to fail often.
As I worked to build relationships, synthesize loads of new information, understand the context and provide value, I hit walls, made mistakes and sometimes felt embarrassed or inadequate. I worked consciously to prevent those feelings from clouding my belief in myself to learn, to improve and to persist. As a sort of self-administered mindset intervention, I took great strength from the below observation journalist Ta-Nahesi Coates (2014) made of his experience learning a new skill as an adult:

“The hardest thing about learning any new skill is that beginning portion when you are forced to walk in the dark, with no map at all. It's not just what you don't know, it's that you have no idea what you don't know and when you'll stop not knowing it. . .The point is neither mastery, nor fluency. The point is hard study - the repeated application of a principle until the eyes and ears bleed a little. And then all of that again. In my time as a hard student, I have found that it is much better to focus on process, than outcomes” (Coates, 2014, para.5 -7).

Murphy (2011) notes that the perceived high stakes of leadership can amplify discomfort, and urges leaders to adopt mindfulness practices or observe the process of their learning. I am grateful to have had the opportunity to take this risk, to cultivate a growth mindset, to push my practice and to have made some impact. I know I have a lot left to learn and to do.
Conclusion

By prioritizing innovation in non-cognitive factors, the Department of Education promotes college and career readiness, and advances educational equity. The intersection of non-cognitive factors as a broad, messy and still emergent domain of knowledge, with the broad and messy processes of decision-making and advancing innovation presents its own challenges and opportunities. Over a short period of time, I worked hard at different strategies to capitalize on an emergent policy window to advance innovation. Early results indicate my efforts may yield some impact.

Secretary Duncan’s quote at the introduction of this document is a powerful story and synthesis of the current state of non-cognitive factors in American education. First, his story acknowledges that much effort, time and money are dedicated inside and outside of schools, formally and informally, to developing the skills, attitudes and behaviors we believe kids need to succeed. Second, it highlights that mindsets and motivation are commonly the point of entry for practitioners when engaging in this domain of work. Third, he articulates the frustration and demand for more knowledge of how to develop these skills, and how to measure them. And lastly, we understand from his story that the work of developing non-cognitive factors is personal and meaningful to the values we
have as educators. We want to see our students thrive, to take the driver’s seat of their learning, to have what they need to succeed in school, in college, and in life.

I look forward to sustained momentum in driving innovation in non-cognitive factors, and am hopeful the evidence base and coherence will grow under the leadership of the Department and the broader community of stakeholders. I will be seeking out other innovators and entrepreneurs to better align and amplify our efforts towards the realization of this vision.
Works Cited


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Federal Register (2014). Secretary’s Proposed Supplemental Priorities and Definitions for Discretionary Grant Programs. Vol. 79, No. 121 / Tuesday, June 24, 2014


Raikes Foundation (2014). Job Description – Raikes Fellowship on Noncognitive Factors and Learning (Spring, 2014)


### Strategies
- Organizational visibility
- Communication & knowledge building
- Learning community
- Measures convening
- Coalition development
- Proposals for collaboration, specific strategic actions
- Development of white papers/roundtables
- Promotion of technology-enabled non-cog supports

### Outcomes
- Increased awareness among stakeholders
- Changes in perceived relevance/salience for stakeholders
- Improved capacity of stakeholders to communicate, use and promote
- Increased agreement about the problem definition
- Strategic alliances, commitments generated
- Increased number of partners, improved alignment of efforts
- Use of bully pulpit
- More actions taken by non-cognitive agenda champions
- New collaborations involving new key audiences, sectors

### Kingdom’s Process Streams
- **Problem recognized**
  - Awareness of and urgency to drive non-cognitive agenda grows across stakeholder groups
- **Policy proposals**
  - Developed and informed by research, evidence and stakeholder involvement
  - Improved capacity & conditions for non-cognitive innovation (new R&D, funding, tools, political cover)
- **Promising politics**
  - Public support and political players reach a turning point

The measurement of educational processes and outcomes can accomplish a number of objectives: it allows for the evaluation of the impact of the education system on student learning; it allows for the understanding of process and the comparison of relative impact to promote improvement of teaching and learning; it enables the education of stakeholders about student learning; and it provides the empirical evidence to advocate for needed systemic change. Development of any kind of educational measures must overcome technical, implementation, political and public acceptance challenges. However, these challenges are exacerbated when the valued processes and outcomes are already seen as hard to measure.

Over the past 12 months, a series of conversations have occurred around these challenges, starting with a convening by the White House in February 2014. As we prepare for a second White House meeting on January 8, 2015, the discussion below provides helpful background context and summarizes key lessons learned over the past year. It begins with a review of the educational outcomes that are important but currently hard to measure, and then provides key principles that should guide the improvement and development of this set of measures. Next, the prospective role of funders in this particular effort is described. Finally, a series of intentionally rough proposal ideas (“straw” concepts) are introduced that were designed to generate discussion and provide a common point of departure for discussion at the upcoming meeting.

As you review the information below, please note the guiding questions in red; these will be addressed in large-group and small-group sessions on January 8th.

1. **WHAT SHOULD WE MEASURE: Which important educational outcomes are currently “hard to measure”?**

In 2012 the National Research Council examined the research literature to identify the competencies required for success in college, career, civic and everyday life, and identified three overlapping clusters: **cognitive**, **intrapersonal** and **interpersonal**. This combination of competencies enable students to transfer what is learned in the context of school to solve the types of unstructured, complex problems they will face throughout life. In the figure to the right, examples of specific competencies within each cluster are listed. While at-scale mechanisms currently exist to assess many cognitive competencies, important interpersonal and intrapersonal capabilities such as learning to learn, academic mindsets, oral communication and collaboration are considered hard-to-measure.
2. **HOW DO WE DEVELOP THESE MEASURES:** What are key R&D principles that can accelerate building measures of hard-to-measure interpersonal and intrapersonal competencies?

After a White House workshop in February 2014, the RAND Corporation conducted interviews and meetings with 75 researchers, practitioners, policymakers, and funders. In October 2014, RAND published a report, noting stakeholders and experts proposed the following principles that should be used to develop measures of hard-to-measure interpersonal and intrapersonal competencies:

- **Measures should focus on valued outcomes:** Measures should emphasize skills and competencies that support college, career, and civic readiness, i.e., preparation that qualifies students to engage in postsecondary academic study, to train for high-quality employment, and to become engaged citizens of their communities.
- **Measures should be practical:** Measures should be easy to administer and score, convenient to use in a range of learning contexts, and affordable for schools.
- **Measures should be high quality:** Measures should have adequate reliability, validity, and fairness to support their specific uses.
- **Measures should improve teaching and learning:** Uses should have the potential to improve educational outcomes or policies and avoid causing negative consequences.
- **Measures should be thoughtfully developed:** Development efforts should be conducted in an efficient, organized, and responsible manner.

RAND added three additional principles that would promote development of high-quality measures:
• **Measure development should be prioritized:** Prioritization should be guided by two factors: adequacy of existing measures, and likely difficulty in developing new measures.

• **Measure development should be sequenced:** A stronger research base currently exists around some interpersonal competencies, so measure development or adaptation could begin immediately. More basic research (including construct definition, and identifying intended uses/audiences) is required for most intrapersonal competencies. For both sets, work could eventually move to evaluation of technical quality and documentation of use.

• **Measure development should be supported by research:** To adequately evaluate validity, reliability and fairness, and to understand the consequences associated with the operational use of measures, a long-term and wide-ranging program of research is required.

3. **WHAT IS THE ROLE OF FUNDERS IN DEVELOPING THESE MEASURES:** What are the critical challenges facing funders?

The 75 stakeholders and experts identified five challenges; RAND suggested potential roles for funders with respect to these challenges:

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Role of funders</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to develop a shared vision of support and coordinated strategies amongst funders to build measures</td>
<td>Work collaboratively to set common priorities and provide R&amp;D support that promotes common goals rather than emphasizing individual funders’ narrow interests.</td>
</tr>
<tr>
<td>How to establish and maintain standards for the rigor of the measures</td>
<td>To the extent possible, collect evidence of quality and utility of measures before promoting them on a wide scale.</td>
</tr>
<tr>
<td>How to generate public support and maintain policymaker interest in the measures</td>
<td>Ensure there is a narrative or theory of action that connects the R&amp;D work to outcomes policymakers (and the public) care about. Also, take into account local needs/interests.</td>
</tr>
<tr>
<td>How to sustain long-term efforts</td>
<td>Recognize that to do this work well will require many years, and with a necessary continuous improvement process. Manage expectations for those looking for quick turnarounds and tools that can be used right away.</td>
</tr>
<tr>
<td>How to promote collaboration and partnerships</td>
<td>Create funding mechanisms that facilitate collaboration to address the complex, multidisciplinary nature of the R&amp;D work ahead.</td>
</tr>
</tbody>
</table>

In the spirit of long-term efforts and collaboration, funding (for the options that follow) could come from: (a) federal agencies; (b) philanthropy; (c) private industry, or some combination of these. What might be the appropriate role(s) for federal agencies and philanthropy in this work?

4. **WHERE SHOULD FUNDERS START:** What are the high-priority goals and potential strategic responses?
To summarize, RAND started with the objective of developing measures of interpersonal and intrapersonal competencies. Taking into account the guidelines and general broad tasks required, RAND then identified a general R&D plan for these hard-to-measure competencies. Next, RAND identified the particular challenges for funders of this work. RAND then separated out a series of goals for existing measures and new measures, and proposed possible activities that would serve as strategic responses.

**4A. EXISTING MEASURES**

There are two key goals and straw man concepts with respect to existing measures (RAND is about to start on a pilot study for the first goal.)

- **Goal**: Understand the current status of measurement efforts, and provide access to existing instruments  
  **Straw man concept**: Build a repository of existing measures  
  A key priority is to understand what measures currently exist, and to create mechanisms for practitioners and researchers to find current measures. Funders can support the creation of an open-access repository of existing measures, and encourage others to contribute to it. This initial work might take one year, and require an investment of $500K-$1M.

  What advice do you have for RAND as they pilot test this idea? What role(s) could funders play with respect to such a repository?

- **Goal**: Assess and improve the quality of existing measures  
  **Straw man concept**: Fund research about existing measures  
  Support research to generate high-quality empirical evidence of the validity, reliability and fairness of existing measures, practical guidance for policymakers and practitioners regarding appropriate uses, and establish collaborations between researchers and practitioners. This work might take 2-5 years, and require an investment of $1M-$10M.

  What suggestions do you have for the scale and scope of research on existing measures compiled into the repository?

**4B. NEW MEASURES**

There are four key goals and corresponding straw man concepts across a continuum of lighter to heavier lifts that could support building new measures of hard-to-measure competencies; a more detailed description of each concept follows on pages 5-8.

- **Goal**: Identify “low hanging fruit” for development  
  **Straw man concept**: Establish an expert panel

- **Goal**: Promote individual investigator R&D for new measures  
  **Straw man concept**: Establish a pooled fund

- **Goal**: Conduct a “deep-dive” R&D effort on selected competencies  
  **Straw man concept**: Establish an interpersonal/intrapersonal assessment
R&D center

- **Goal:** Coordinate/manage a broad, long-term program of R&D
  
  **Straw man concept:** Establish research-coordinating boards focused on interpersonal/intrapersonal assessment
  
  Which aspects of the straw man concepts do you like or believe will best help achieve the goal? What questions do you have, and what might you want to change to better achieve the goal?
  
  What are the appropriate role(s) for federal agencies and philanthropy?
  
  What are specific next steps that could advance this option?
**GOAL:** Identify “low hanging fruit” for development

**STRAW MAN CONCEPT:** Establish an expert panel

<table>
<thead>
<tr>
<th><strong>Purpose</strong></th>
<th>Promote rapid R&amp;D</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>1 year</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>$100K - $250K</td>
</tr>
</tbody>
</table>

**Description**

This activity focuses on identifying the “low-hanging fruit” for measure development, i.e., those competencies experts believe are likely to be the easiest to measure. For example, participants told the RAND researchers that interpersonal competencies, such as oral communication, would generally be easier to measure than intrapersonal competencies because they can be observed directly.

This activity could be accomplished relatively quickly and inexpensively by convening an expert panel for the express purpose of identifying promising targets of opportunity for measure development. The panel would consist of experts from a variety of disciplines and perspectives, and it would be charged with recommending potential constructs that are ripe for measure development or measure improvement.

This activity constitutes an easy first step that funders could build on by then making resources available to support development in the identified areas.

**Indicator of success**

Identification of two to four target constructs and a justification for focusing on each one.

**Overcoming technical challenges**

The panel could recommend developing measures of constructs that already have common definitions, and more easily establish validity/reliability/fairness.

**Overcoming implementation challenges**

This activity has a narrow scope and does not directly address how this would necessarily lead to measures that have potential for scale-up, address cost issues, or have appropriate timing for assessment administration. Also, it doesn’t overcome problems of inadequate collaboration.

**Overcoming political challenges**

This activity does not directly address policies and establish political will for adopting these measures.

**Overcoming public acceptance challenges**

This activity does not directly address education of the general public to muster support for these measures.
<table>
<thead>
<tr>
<th>Purpose</th>
<th>Promote individual investigator measure development efforts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>2 – 5 years</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>$1M - $10M</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>This activity institutionalizes a familiar model of individual investigator initiative. Support from many sources would be pooled to create a fund made available to support the development of new measures. Individual investigators would be invited to submit proposals for relatively small awards ($50K - $250K) to develop measures of interpersonal or intrapersonal competencies. Grants would be awarded annually or semi-annually based on a review of proposals.</td>
</tr>
<tr>
<td><strong>Indicator of success</strong></td>
<td>Evaluating the number of new measures created and their quality after early pilot testing.</td>
</tr>
<tr>
<td><strong>Overcoming technical challenges</strong></td>
<td>The pooled funds could be allocated based on the potential for developing measures of constructs that already have common definitions, and more easily establish validity/reliability/fairness.</td>
</tr>
<tr>
<td><strong>Overcoming implementation challenges</strong></td>
<td>The pooled funds could be allocated based on the potential for measures to scale-up, address cost issues, and/or have appropriate timing for assessment administration.</td>
</tr>
<tr>
<td><strong>Overcoming political challenges</strong></td>
<td>Establishing the fund with a multi-year mandate could signal to researchers that this is an area worthy of investigation. However, this activity does not directly address policies and establish political will for adopting these measures.</td>
</tr>
<tr>
<td><strong>Overcoming public acceptance challenges</strong></td>
<td>This activity does not directly address education of the general public to muster support for these measures.</td>
</tr>
</tbody>
</table>
GOAL: Conduct a “deep-dive” R&D effort on selected competencies

STRAW MAN CONCEPT: Establish an interpersonal/intrapersonal assessment R&D center

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Develop and evaluate new measures of one or a set of constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duration</td>
<td>3 – 5 years</td>
</tr>
<tr>
<td>Investment</td>
<td>$6M - $10M</td>
</tr>
<tr>
<td>Description</td>
<td>This activity establishes an interpersonal/intrapersonal research and development center with sufficient resources and time to fully develop new measures of an identified construct or set of constructs (e.g., collaborative problem solving); generate new knowledge/theories relevant to the construct; draw on separate strands of work to advance the field; and provide relatively rapid research on emergent supplemental questions not adequately being addressed elsewhere. The center would attract the best R&amp;D teams. One approach would be to hold a competition that encourages multi-institutional teams to propose plans for basic research, measure development and testing in a predetermined competency area; alternatively teams could propose their own foci. Drawing on past experience of similar centers, it is likely that successful bidders will develop thoughtful, multi-year research plans to tackle problems from a variety of perspectives. The center would provide national leadership within its target construct area by developing position papers, hosting meetings, and engaging in dialogue with researchers, practitioners, and policymakers in order to identify promising areas of research, development, and dissemination for the field.</td>
</tr>
<tr>
<td>Indicator of success</td>
<td>Development of new, high-quality, usable measures and empirical evidence regarding quality and utility. The center would produce collaborations between researchers and practitioner, as well as promote effective application and widespread use of measures.</td>
</tr>
<tr>
<td>Overcoming technical challenges</td>
<td>The center could ensure that new measures draw on common definitions, and those new measures meet standards of validity/reliability/fairness.</td>
</tr>
</tbody>
</table>
### Overcoming implementation challenges

The center could focus on measures designed for scale-up, address cost issues, and have appropriate timing for assessment administration.

### Overcoming political challenges

The center could provide field leadership and create a presence to push for policies and establish political will for adopting these measures.

### Overcoming public acceptance challenges

This center could create an on-going presence to address education of the general public to muster support for these measures.

### GOAL: Coordinate/manage a broad, long-range program of R&D

**STRAW MAN CONCEPT:** Establish research-coordinating boards focused on interpersonal/intrapersonal assessment

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Establish priorities, and address all development issues for new measures (note: but the boards would not create the measures)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>4 – 6 years</td>
</tr>
<tr>
<td><strong>Investment</strong></td>
<td>$10M - $25M</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Create two independent research-coordinating boards: one for interpersonal competencies and one for intrapersonal competencies. The boards would be made up of measurement and content experts and stakeholder representatives. Each board would serve as a grant-making body and create a long-term R&amp;D agenda, generate funding from contributing foundations and agencies, conduct grant competitions, disburse funds to developers, monitor the process incrementally, and make midcourse adjustments based on successes. The boards would not be responsible for doing the assessment development or validation work. The funding community would provide resources that each board would contract for the needed tasks in its area of development. This approach would foster collaboration in the development of the agenda and could be designed to seek evidence from a broad range of sources, including both domestic and international research. The boards could serve as advanced research oversight groups by anticipating critical issues on the horizon and supporting rapid experimentation with innovative approaches.</td>
</tr>
<tr>
<td><strong>Indicator of success</strong></td>
<td>Management of new measure development that reflect identified priorities, leading edge innovations, collaborative relationships among researchers and institutions, and a long-term agenda for R&amp;D of additional measures.</td>
</tr>
<tr>
<td><strong>Overcoming technical</strong></td>
<td>The boards could ensure that new measures draw on common definitions, and those new measures meet standards of</td>
</tr>
</tbody>
</table>
The boards would have a multiple-year mandate to reflect the fact that the process of development and validation is likely to take multiple years, and to help avoid the natural tendency for decision-makers to move on to new initiatives before giving current initiatives a chance to prove their worth.

Overcoming implementation challenges

The boards could focus on measures designed for scale-up, address cost issues, and have appropriate timing for assessment administration. The boards could bridge the public-private gap and more directly coordinate and manage collaborative relationships.

Overcoming political challenges

The boards could push for policies and establish political will for adopting these measures.

Overcoming public acceptance challenges

The boards could provide essential leadership visibility and credibility and invest in work to encourage the general public to muster support for these measures.
Appendix C – Convening Agenda

White House Meeting on Measuring Hard-to-Measure 21st Century Competencies

Eisenhower Executive Office Building, Room 350
January 8, 2015

Hosted by the White House Office of Science and Technology Policy
In conjunction with The William and Flora Hewlett Foundation

PURPOSE AND GOALS

The purpose of this invitational meeting is to explore strategies for generating and coordinating funding support for the development and application of practical measurements of hard-to-measure competencies. Specific outcomes of the meeting are:

- Build a shared understanding of relevant current and future initiatives in federal agencies and philanthropies
- Identify shared high-priority needs and corresponding strategies for developing measurements
- Determine follow-up initiatives and next steps for coordinating strategies of support

AGENDA
(Subject to change)

8:30-9:00 REGISTRATION

9:00-10:15 WHERE HAVE WE BEEN: SETTING THE CONTEXT

- Welcome and Introductions
  - Maya Shankar, White House Office of Science and Technology Policy
  - Tom Kalil, White House Office of Science and Technology Policy
  - Roberto Rodriguez, White House Domestic Policy Council
  - Barbara Chow, The William and Flora Hewlett Foundation
  - Jim Kohlmoos, EDGE Consulting (moderator)

- Framing the Conversation
  - Marc Chun, The William and Flora Hewlett Foundation
  - Brian Stecher and Laura Hamilton, RAND Corporation

10:15-10:30 BREAK
10:30-12:15  WHERE ARE WE NOW: HIGHLIGHTING CURRENT STRATEGIES

- Examples of Current Efforts to Develop Measures:
  - Suchi Saxena, US Department of Education (moderator)
  - Susan Singer, National Science Foundation
  - Tom Brock, National Center for Education Research, Institute of Education Sciences
  - Peggy Carr, National Center for Education Statistics, Institute of Education Sciences
  - Marc Chun, The William and Flora Hewlett Foundation
  - Richard Bollinger, The John Templeton Foundation

WHERE COULD WE BE GOING: POSSIBLE FUTURE GOALS AND STRATEGIES

- Introduction to High-Priority Goals and “Strawman” Options

12:15-12:45  LUNCH

12:45-1:45  WHERE SHOULD WE BE GOING: POSSIBLE FUTURE GOALS AND STRATEGIES

- Break-out Group Discussions about High-Priority Goals and “Strawman” Options

1:45-2:00  BREAK

2:00-3:00  MOVING FORWARD WITH SHARED PRIORITIES, COORDINATED STRATEGIES

- Break-out Group Reports
- Toward Shared Priorities and Coordinated Strategies
- Next Steps and Closing Announcements

3:15-5:00  POLICY DISCUSSIONS (More information to follow)

5:30-7:00  RECEPTION
## Appendix D – Convening Participant list

**Convening Participant list as of January 5, 2015**

<table>
<thead>
<tr>
<th>Name</th>
<th>Title and Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lauren Angelo</td>
<td>Research Scientist, Institute of Education Sciences, U.S. Department of Education, Washington, DC</td>
</tr>
<tr>
<td>Stephanie Banchero</td>
<td>Senior Program Officer, Education, The Joyce Foundation, Chicago, IL</td>
</tr>
<tr>
<td>Brad Bernatek</td>
<td>Senior Program Officer, College Ready - Next Generation Learning, Bill &amp; Melinda Gates Foundation, Seattle, WA</td>
</tr>
<tr>
<td>Sue Betka</td>
<td>Acting Director, Institute of Education Sciences, U.S. Department of Education, Washington, DC</td>
</tr>
<tr>
<td>Marisa Bold</td>
<td>Deputy Director, K-12 Education, The Walton Family Foundation, Washington, DC</td>
</tr>
<tr>
<td>Richard Bollinger</td>
<td>Program Officer, Character Virtue Development, The John Templeton Foundation, West Conshohocken, PA</td>
</tr>
<tr>
<td>Thomas Brock</td>
<td>Commissioner, National Center for Education Research, Institute of Education Sciences, U.S. Department of Education, Washington, DC</td>
</tr>
<tr>
<td>Kristen Burns</td>
<td>Associate Director, The Grable Foundation, Pittsburgh, PA</td>
</tr>
<tr>
<td>Barbara Chow</td>
<td>Education Program Director, The William and Flora Hewlett Foundation, Menlo Park, CA</td>
</tr>
<tr>
<td>Marc Chun</td>
<td>Education Program Officer</td>
</tr>
</tbody>
</table>
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**Matthew Meunch**
Program Officer
The Joyce Foundation
Chicago, IL

**Jacqueline Nader**
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Program Officer
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Washington, DC

**Steve Plank**
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Corporation for National and Community Service
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**Hilary Rhodes**
Senior Research and Evaluation Officer

The Wallace Foundation
New York, NY

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U.S. Department of Education
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**Roberto Rodriguez**
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**Patrick Rooney**
Program Supervisor
Technical Assistance
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**Dara Rose**
Program Officer
Wallace Foundation
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**Suchi Saxena**
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Appendix E – Convening notes

Meeting Notes

White House Meeting on Measuring Hard-to-Measure 21st Century Competencies

Hosted by the White House Office of Science and Technology Policy

In conjunction with The William and Flora Hewlett Foundation

Submitted by
Stephanie Malia Krauss, Senior Fellow, Forum for Youth Investment
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General Details
White House Meeting on Measuring Hard-to-Measure 21st Century Competencies

Date: January 8, 2015
Time: 8:30 AM – 3:00 PM
Location: Eisenhower Executive Office Building, Room 350

Meeting Purpose
To explore strategies for generating and coordinating funding support for the development and application of practical measurements of hard-to-measure competencies

Anticipated Outcomes
1. **Build a shared understanding of relevant current and future initiatives** in federal agencies and philanthropies
2. Identify shared high-priority needs and corresponding strategies for developing measurements
3. Determine follow-up initiatives and next steps for coordinating strategies of support

Meeting Notes

Session 1 | Where have we been? Setting the Context

Moderator: Jim Kohlmoos, EDGE Consulting

- **Maya Shankar – White House, Office of Science & Technology Policy (OSTP)**
  Described the OSTP research team and agenda. Connected this meeting to the President’s 2014 back to school message, which highlighted social emotional “non cog” skills.

- **Jim Kohlmoos – EDGE Consulting**
  Provided a logistical orientation, including an overview of the meeting purpose, goals and agenda.

- **Tom Kalil – White House, Office of Science & Technology Policy**
  Provided attendees with four observations:
  1. There are a set of hard-to-measure competencies that are central for work, college and civic life.
  2. “If you cannot measure it, you cannot improve it;” need greater clarity on the competencies.
  3. These hard-to-measure competencies may be the best predictor of work performance.
  4. A move toward competency/skill-based learning could be a reliable and effective way to address inequities.

- **Roberto Rodriquez – White House, Domestic Policy Council**
  Provided attendees with these five observations:
  1. Leaders at the federal level want to find ways to best partner with states and school districts to advance this work.
  2. Belief that the College and Career Readiness conversation with evolve into a conversation about what young people need to succeed in adult life and the economy.
  3. This is the right time to talk about how these competencies & skills can be integrated into the education landscape.
  4. Policy must evolve to prioritize the competencies & skills that young people need to succeed in adult life and the economy.
(5) Need a *policy* architecture that incorporates these hard-to-measure competencies; need *pedagogy* that fosters the competencies; need *professionals & professional expertise* that support student development of the competencies; need ongoing *research & evaluation* at the school level to support the process

- **Barbara Chow – William and Flora Hewlett Foundation (Hewlett)**
  Welcomed attendees on behalf of the William and Flora Hewlett Foundation and introduced the Hewlett team members focused on this work (via the Deeper Learning strategy). Offered attendees these four observations:
  1. There is growing & strengthening clarity about the problem that the group is trying to solve
  2. The National Academies Press (NAP) report¹ provides a research base that enables this conversation and investment to move forward
  3. Employers want and need a workforce with different competencies that what is being produced by K-12 and higher education systems
  4. A “collective impact” approach is needed to build field coherence and provide an overall architecture

- **Marc Chun – Hewlett**
  Provided attendees with the background and overall context for the convening. Described the growing, though fragmented, work in this area and the need for field-building and –coherence. Provided early findings about how kids with “hard to measure” competencies fare better in school and life. Outlined this timeline:
  - 2012 – NAP report (see footnote below) published, making the case for 21st century competencies
  - February 2014 – Convening with 75 experts and RAND to talk about researcher priorities related to hard-to-measure 21st century competencies
  - October 2014 – RAND published a report & hosted a webinar based on the findings generated from the abovementioned meeting
  - October 2014 – Voluntary breakfast offered at the Grantmakers for Effective Organizations (GFE) meeting on this topic—roughly 50 individuals attended
  - January 2015 – Present day. Current meeting to learn more about the research needs and opportunities and to explore possible public and private philanthropic partnerships

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• **Brian Stecher & Laura Hamilton – RAND Corporation**

Provided attendees with an overview of their report and recommendations, both based on the February 2014 convening and follow-up research and conversations. Report was provided in hard copy to all attendees. Stecher & Hamilton addressed why this work should be prioritized and outlined these five stages for this work to be carried out:

1. Defining & selecting constructs
2. Identifying the unintended use(s) of measures
3. Developing practical measures
4. Evaluating the technical quality of measures
5. Documenting the consequences of use

Stecher & Hamilton also offered three suggestions when determining which competencies should be addressed first:

1. Selected competencies should have educational efficacy: be malleable and important to stakeholders
2. They should have pre-existing, adequate measures
3. There should be an understanding of how difficult it will be to develop new measures for these competencies

Q&A for RAND followed Stecher & Hamilton’s remarks

**Session 2 | Where are we now? Highlighting Current Strategies**

**Moderator: Suchi Saxena, US Department of Education**

Introduced the overarching framing questions for the panel presentations, presented overview of format and goals [facilitated panelist Q&A].

**PART I: Presentations**

• **Dr. Susan Singer – National Science Foundation (NSF)**

Dr. Singer presented on *Measuring Interpersonal and Intrapersonal Competencies*. She introduced the NSF team who research in this area (including Joan Mundi, Sally Dickerson, Evan Height and Sarah Kay McDonnell). She observed that NSF focuses on the entire lifespan, “Pre-K to Gray.” Singer described these two research areas—providing examples—that include measuring hard-to-measure 21st century competencies:

1. Social, Behavioral and Economic Sciences: including developmental and learning sciences and social psychology
2. Education and Human Resources

Three examples of current, related research initiatives are:

- The role of executive functioning in the transition of preschool-aged children into school
- The role of self-affirmation in adult learners
Optimizing team skill-building through the use of evidence-based strategies

- **Tom Brock (Commissioner), Jackie Buckley & Emily Doolittle – National Center for Education Research (NCER), Institute of Education Sciences (IES)**
  Brock presented an overview of NCER and IES, including related areas of work. Buckley and Doolittle described these areas of work in a presentation entitled, *Investments in Measuring Social-Behavioral Competencies*. The following information was shared during that presentation:
  1. In the last decade, IES/NCER has invested $500M into 245 projects focused on social and behavioral competency improvement. Roughly $80M has been invested in projects focused on improving measures of social and behavioral skills.
  2. IES/NCER’s position is that all social and behavioral competencies are malleable, that quality settings can improve these competencies and that improved competencies lead to improved academic performance.
  3. In late 2015, IES/NCER will launch a compendium of social-behavioral research.
  4. Most funding for social-behavioral competencies supports *intervention research*. This includes the implementation of existing measures and the development and initial trial of new measures.
  5. Future funding should support: field-initiated research, research on academic mindsets, developing concept clarity and common language.

Q&A for IES/NCER followed.

- **Peggy Carr (Associate Commissioner) – National Center for Education Statistics (NCES), IES**
  Carr presented on the *Assessment of Collaborative Problem Solving* and the work of NCES in international and large-scale assessments, preschool through graduate school. The following information was shared during that presentation:
  1. Efforts are underway to incorporate the assessment and measuring of 21st century skills in large-scale assessments like Educational Testing Service’s (ETS) opportunity test, OECD’s PISA, SIM City Glass Lab, and NAEP TEL.
  2. Challenge to incorporating hard-to-measure 21st century competencies/skills in these assessments is around defining the constructs, test development & psychometric design and data management.
  3. Psychometric models must be developed and tried to figure out a way to use group work and activity to assess, but to isolate and evaluate the contributions and skills of the individual; this is important for process and outcome data.
  4. Large-scale assessments are beginning to incorporate new technologies, like affect detection (ETS).
• **Marc Chun – Hewlett**

Chun presented on the current, related intersections and collaborations between the philanthropic and research communities. To anchor the conversation, Chun offered the belief that assessment is a key system driver for education reform. The field-generating and building research efforts in this area follow the publication of these five studies/reports:

1. AIR study
2. RAND study
3. JFF report
4. NCR report
5. Asia Society & RAND

Chun also outlined five investment areas—with examples of related Hewlett investments—for group consideration:

1. R&D around hard-to-measure competencies
2. Construct definitions
3. Employers’ competency definitions
4. Performance assessment
5. Low hanging fruit

• **Richard Bollinger – The John Templeton Foundation**

Bollinger presented an overview on the John Templeton Foundation, including its seven investment areas. He then spoke specifically about the Character and Virtue Development (CVD) funding portfolio and its funding process. The following are key points from that presentation:

1. The CVD portfolio is $40M and currently includes 48 projects. All projects align to the 19 character strengths identified by Sir John Templeton
2. The CVD funding process is to identify priorities within performance, intellectual and moral virtues, then determine and fund need areas. Regarding measurement, the Foundation encourages the creation of reliable and valid measures, team approaches to measuring complex constructs, hubs to access free measures and instruments
3. A current goal is to increase collaboration and explore the intersection of intellectual and social virtues in academic success and wellbeing and to enhance cross-foundational/disciplinary interactions

**PART II: Panelist Questions & Answers (Q&A)**

• **Q1: What are the current gaps and opportunities?**

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<thead>
<tr>
<th>Gaps</th>
<th>Opportunities</th>
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<tr>
<td>• Fragmented solutions</td>
<td>• Need to build more accessible tools, guidance and training for practitioners and parents to encourage these competencies</td>
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<tr>
<td>• Complicated solutions that are inaccessible to everyday practitioners</td>
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<tr>
<td>• Disagreement around terminology</td>
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• Too much testing
• Gaps between researchers and practitioners
• Consistent terminology & shared definitions
• Synthesis work
• Meta-analysis
• Promoting competencies as malleable
• Integrate measurement & hard-to-measure competencies into extant large-scale assessments (ex: PISA)
• Increased alignment with communities & practitioners
• A repository

• Q2: Are unobtrusive measures showing up anywhere
  o IDEO (Stanford University D School, Hewlett grantee)
  o Gaming (ex: SIM City)

Part III: Guided Presentation of RAND research team, Stecher & Hamilton

Questions with full-group participation
• How might we collect existing measures?
  o Query funders and interview relevant grantees
  o Partner with NRF as they launch their depository (as abovementioned)
• How might we analyze and improve existing measures?
  o Repository should report on the level of each construct’s malleability, at least to the extent known by researchers
  o Figure out how competencies/construct correlate to causal outcomes
  o Build tools for application
• How might we encourage use & maintain a repository?
  o Make it accessible for all researchers
  o Proliferation of registries
  o Advertise and incentivize use of a repository
  o Maintain proper and current tagging
  o Look to precedents’

Presentation of the four options proposed in the RAND study (abovementioned):
• Four challenges to moving this work forward:
  (1) Technical
  (2) Political
  (3) Implementation
  (4) Public acceptance

  • Option 1: Identify low-hanging fruit/expert panel
    Gather information and launch technical panel on constructs that already have reliable measures. This option focuses on the work that has already been done.
• **Option 2: Pooled funds**
  Pool funds in an effort to systematically collaborate, coordinate efforts and reduce duplicative efforts. This pooled fund could range $1M-$10M, and include different levels of efforts. Proposed a focus on relatively small projects, initiated by investigators, with a peer review process.

• **Option 3: Center for Interpersonal & Intrapersonal Assessment**
  Develop something akin to an IES research center with a unifying theme. Would require sustained funding over at least a five (5) year period to research a particular domain. Researchers could work together to create and carryout an agenda. Findings could be piloted in practice with an advisory body to monitor progress.

• **Option 4: Coordinating broad committees/boards.**
  Launch one or two coordinating bodies to solicit, review, fund and evaluate proposals from the field. Coordinating bodies would serve as an thought leadership and allocation body.

**Session 3 | Where should we be going? Possible Future Goals and Strategies**

Attendees broke into four self-selected groups, each focused on one of the abovementioned options. Facilitated small group discussions happened over lunch. These conversations included the following:

- Reflection on the strengths and challenges associated with their selected option.
- Discussion about the roles of public &/versus private funding bodies
- Recommended changes or additions to the selected option
- Commitments and proposed next steps

**Session 4 | Moving Forward with Shared Priorities, Coordinated Strategies**

**Takeaways from Session 3 Breakout Groups**

- **Option 1: Expert Panel**
  - Include practitioners
  - Select measures that practitioners and young people value
  - Prior to organizing, identify intended outcomes & what those results mean for children and youth

- **Option 2: Pooled Funds**
  - Different funding bodies have different requirements and restrictions. Consider multiple pooled funds organized by topic or funder type
  - Governance is critical for this option. Intentional planning and deep legal review needed throughout the process
Given requirements and restrictions, there may not be enough money to justify needed grantee effort
- Consider diverse funding opportunities

**Option 3: National Center**
- Tangible direction to pursue
- Sustainable option with longitudinal study opportunities
- Need to work on the concept of a center—not be bound by a self-contained place
- Feasible as a public-private-partnership

**Option 4: Coordinating Bodies**
- Coordinating bodies could take on new and existing measures
- Coordinating bodies would need to include a broad range of stakeholders
- To do this well, well-articulated short-term steps are needed, coupled with a strong theory of action and tapping into a pool of expertise—maybe from current grantees.

**Final Remarks**

- **John Easton – The Spencer Foundation**
  Easton underscored the need for careful planning and deliberation. He suggested that any decision would be viewed with much scrutiny and that it would send a strong signal to the field. Specifically, he suggested more time and attention to these three areas:
  1. The inclusion of a broad network of stakeholders
  2. The underlying principles
  3. Damaging effects of over-testing

- **Kumar Garg – White House, Office of Science and Technology Policy**
  Garg shared that the White House hosted the meeting in part because it is currently grappling with *what school is supposed to prepare students for (Training for what? Success as measured by what?)*. Specifically, OSTP is thinking about the following:
  1. How to take “whole child” practice and thought leadership efforts and translate it into policy
  2. How to promote individual contributions and cross-collaborations
  3. How to approach field-building with a bigger lens that includes common measures
  4. How to identify and train the next generation of researchers
  5. How to best share information and data

- **Nadya Chinoy Dabby – U.S. Department of Education**
Dabby acknowledged the enthusiasm expressed by meeting attendees for continuing this work. She encouraged the group to consider these questions:
(1) How do we want teachers to experience this body of work?
(2) What do they mean for this to be useful and meaningful for them?
(3) Who are the people that can do that scaling?
(4) What does this look like in the context of complicated schools?
(5) What are implications at the federal/state/local levels?

- **Marc Chun – Hewlett**
  Chun highlighted Hewlett’s interest in launching a repository. He then discussed the immediate next steps: to form a short-term task force to sift through the meeting takeaways and notes and determine next steps. He also announced that Hewlett will make an investment to keep this work moving forward.

- **Barbara Chow – Hewlett**
  Chow thanked the group and restated the need for good communications, continued conversations and thoughtful planning.

**Afterwards**

**Policy Discussions**

The White House OSTP offered attendees the chance to attend optional afternoon breakout sessions on the following topics:
(1) Student support: increasing student interest, persistence, the “Reach Higher” initiative
(2) OSTP STEM initiatives, including how to increase girls and women in STEM fields
(3) The “Maker” movement
(4) Adult learners, higher education, and the 21st century skills most important for the workforce
(5) Approaches to higher education success

**Reception**