

Branches from the Same Tree Report Release

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Smithsonian Secretary

David J. Skorton

ACKNOWLEDGMENTS

Thank you, Dr. Bear, for that introduction.

More importantly, thank you for your hard work and leadership throughout this process. Bringing this report to fruition was a huge undertaking. You did a superb job in focusing us all on the task at hand and bringing precision and rigor to the process.

I also want to thank the director of the Board of Higher Education and Workforce, Tom Rudin; the entire study staff; and all the members of our extraordinary committee.

Given our topic, this committee was naturally a bit – shall we say – eclectic. Any time you put scientists, engineers, physicians, artists, musicians, dancers, historians, philosophers and others into the same room, it's going to make for some lively discussion. They're not necessarily inclined to listen to the chairman. Fortunately, I was used to that from my days as a university president.

This was one of the most impressive and dedicated committees that I've had the pleasure of working with. And I'm extremely grateful to everyone who contributed their time, their expertise, and their passion to this important work.

Finally, I want to express my appreciation to Dr. McNutt for her steadfast support over the last two years – and to everyone at the National Academy of Sciences for hosting us this morning.

A PLACE FOR SCIENCE AND THE CREATIVE MIND

Back when this building was designed nearly a century ago, the president of NAS was a paleontologist by the name of Charles Doolittle Walcott. As it happens, Walcott was also the Secretary of the Smithsonian at the time. And he described the building in terms that are particularly relevant to our purpose here today:

“We call it the building for the National Academy of Sciences and the National Research Council,” Walcott said, “but in reality it should be the nation’s home of science in America, and will be looked upon by our fellow citizens and the world at large as the place where the creative mind will be able to do much to bring about a better existence for the future people of the world.”

Let me repeat that – because it’s important. Walcott envisioned this building as both “a home of science” and a place for “the creative mind.”

He recognized, without saying so explicitly, that scientific inquiry and creativity are not opposing forces; they go hand in hand. And this building – with its beautiful architecture, the magnificent artwork on display throughout its halls, and its many representations of the impact of science, engineering, and medicine on all aspects of our lives – embodies that principle.

As I’ve said before, this is not a particularly novel idea – at least, not historically speaking. Indeed, it can be traced from the Renaissance to the Enlightenment to the modern era. From Leonardo da Vinci to Thomas Jefferson to Ada Lovelace, there are countless examples of historical figures who excelled across scientific, artistic, and humanistic disciplines.

But it’s also an idea that is increasingly under challenge in the 21st century. Especially in the decade since the Great Recession, we have seen a trend in higher education toward specialization in STEMM disciplines that are seen as the surest path to employment – and away from broad learning experiences that embrace the relationship between science, creativity, and humanism.

This is why the report that we are here to discuss is so important.

BRANCHES FROM THE SAME TREE

As you know, the title of our report is “Branches from the Same Tree.” It comes from the opening passage of an essay on “Moral Decay” that Albert Einstein published in 1937. In the essay, Einstein wrote:

“All religions, arts and sciences are branches of the same tree. All these aspirations are directed toward ennobling man’s life, lifting it from the sphere of mere physical existence and leading the individual toward freedom.”

We set out to test that proposition. Put a bit differently, we wanted to explore whether the sciences, arts, and humanities are, indeed, mutually reinforcing. Specifically, we were charged with examining whether “educational programs that mutually integrate learning experiences in the humanities and arts with science, technology, engineering, math, and medicine (STEMM) lead to improved educational and career outcomes.”

In just a few minutes, my fellow committee members are going to discuss some of our most relevant findings and recommendations, so I won't go into too much detail now. But before I turn things over to my colleagues, I want to emphasize three critical points.

First, a growing number of leaders are concerned that an education focused on a single discipline does not adequately prepare people for the challenges and opportunities presented by work, life, and citizenship in the 21st century.

We're hearing this from leaders in higher education, but also – critically – from private-sector employers. That's because, as the nature of work evolves, there is growing demand for skills in communication, collaboration, critical thinking, and continuous learning. And those skills are strengthened by the arts and humanities.

With that in mind, many of these leaders are now rejecting the false choice between specialization and a traditional liberal arts education. Instead, they are advocating a different approach – a broad, holistic education that integrates the sciences, technology, engineering, mathematics, and the biomedical disciplines with the arts and humanities.

In the report, we refer to this approach simply as “integration,” and we provide dozens of examples in the hope that they will be a resource to those who are looking for new, innovative, and creative ideas to put into action on their campuses and in their classrooms.

Second, this study was conducted under the auspices of the National Academies of Sciences, Engineering, and Medicine. Therefore, in our analysis as a committee, we did not defer primarily to our collective opinions. Instead, we relied heavily on the evidence.

And the evidence, in our view, is quite compelling. We found extensive anecdotal evidence of the value of integration. This is bolstered by some empirical evidence from existing research and, as I alluded to a moment ago, a groundswell of interest in developing new approaches.

Yet as we note in the report, the evidence is incomplete. So, while we are confident in our recommendation that faculty and administrators should develop and implement integrated curricula, we are also urging them to continually evaluate their own efforts.

This will enable us to more effectively measure the

impact of integration on student learning outcomes. And it will help us to better prepare students for the challenges of work, life, and citizenship that lie ahead.

And third, while the hard work of producing this report is finished, the even harder work of acting on its findings is just beginning. To that end, everyone here, and everyone watching the webcast, has an essential role to play.

As a committee, we won't be disappointed if you don't agree with all of our conclusions. We fully expect to encounter questions, skepticism, and even dissent. These are the necessary ingredients of a healthy dialogue. They are also encouraged – I should add – by the kind of broad thinking and learning that we hope to advance.

But we will be disappointed if our report fails to spark discussion and, yes, debate – if it simply sits on shelves and gathers dust, as academic reports sometimes do.

Our hope is that the study will inspire scientists, humanists, and artists of all kinds to consider the value of integration in their respective disciplines – and that it will serve as a catalyst for important conversations and bold experimentation on campuses across the country.

CONCLUSION

Whether or not that happens, again, is largely up to you.

Ultimately, it's the faculty who make decisions about the curriculum at any given institution. That's the way it should be. But to those of you who have the privilege of participating in those decisions – and even to those who don't – I have a simple request.

Please download our report. Read it. Mark it up. Think about which ideas resonate and which ones don't. But most importantly, talk about it with your colleagues. Start a conversation. And consider new and better ways, whether you find them here or not, to prepare the next generation for the challenges of the future.

If you do that, then – to quote the late Steve Jobs, who believed strongly in the kind of integration we're talking about today – it will “make our heart sing.”

And now, I'd like to turn things over to my colleagues on the committee.

Thank you.

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