COHERENCE: DEFINING, INTEGRATING, AND TEACHING DURABLE SKILLS

Working Group Report #2

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INTRODUCTION

The Vice Chancellor for Academic Affairs (VCAA) charged an IGHE Working Group with exploring the possibilities for establishing a common set of signature habits and skills necessary for a 21st century education – appropriate to DKU's setting and aspirations as outlined in our Animating Principles – that all DKU students should obtain, regardless of their major. This charge was motivated by a recognition that skills can serve as a common language to facilitate internal and external conversations about the purposes and outcomes of a DKU education. They can also complement other curriculum measures that aim to address key challenges faced by DKU's unconventional interdisciplinary programs.

By design, DKU's academic programs intentionally build structures to enable scaffolding and interdisciplinary teaching and learning. These structures include a vertical common core and overlapping tracks and courses across majors. However, the absence of a common language to articulate the common goals and purposes of the sequences and overlaps has made it difficult to create cohesive connections across the curriculum. The lack of connections also hampers the development of a meaningful and systematic integration between academic and co-curricular activities, which is essential for fostering a holistic educational experience for students.

The innovative and interdisciplinary nature of DKU's programs can also be difficult to explain to various stakeholders, including students, faculty, parents, employers, and graduate schools. Establishing a common language for articulating the value and distinctiveness of a DKU education will enhance the legibility and appreciation of our interdisciplinary approach, ultimately benefiting our students in their academic and professional pursuits.

To better understand how skills can serve as a common language for an interdisciplinary community, the Working Group explored a wide range of literature on various types of skills, including hard skills, soft skills, durable skills, and 21st century skills. It also reviewed several examples of new universities that have incorporated more attention to skills in their curriculum. After examining several institutions that have successfully integrated skills into their curricula, the Working Group conducted a brief critical analysis of the DKU curriculum regarding its strengths, gaps, and opportunities. Through group exercises aimed at defining complex skills such as critical thinking, creativity, and communication in the DKU context, the Working Group identified key questions and concerns that will help guide future efforts. It highlighted the importance of giving careful attention to managing faculty and student workload and to providing continuous faculty support and resources.

The Working Group's discussions and analyses culminated in a set of recommendations for DKU to initiate an incremental process of defining and integrating essential durable skills into the curriculum. This process will help build out a scaffolding of distinctive DKU habits and skills that undergird these courses and majors and that offer recognizable hallmarks of a DKU education. Ultimately, it will add more specificity to our Animating Principles and major-level outcomes, improve curriculum coherence, structural clarity, interdisciplinary connections, major legibility, and have a long-term positive impact on students' intellectual development and career versatility.

DKU'S ANIMATING PRINCIPLES AND LEARNING OUTCOMES

DKU has long recognized the importance of learning outcomes in its educational framework. Previously established learning outcomes at the institutional, program and course levels have provided a solid foundation for guiding the initial curriculum design, the curriculum realignment, and the shaping of DKU's core identity. Given our previous work around learning outcomes, the skills-oriented approach should not be a foreign concept to DKU. These existing structures and past experiences demonstrate that the DKU curriculum is well-suited for implementing a more systematic skills-oriented approach, adding greater strength and specificity to a student's four-year trajectory at DKU. Focusing more on skills will build upon and significantly enhance our current practices and approaches.

Seven Animating Principles

DKU has established seven Animating Principles that serve as the foundation for its educational philosophy. They are designed to guide DKU's institutional approach to teaching and learning with clear expectations for student development. Those principles promote key competencies that encompass a broad spectrum of essential skills, including critical thinking, communication, collaboration, research, leadership, and ethical reasoning.

Yet these principles are articulated at such a lofty level that they often provide little specific traction in the curriculum. Moreover, interpretations of each principle vary significantly across campus, as do the ways community members seek to approach them. For DKU's Animating Principles to provide a meaningful common language, they need to be broken down into a more specific set of competencies that can be scaffolded across the curriculum.

Major Learning Outcomes

Initiated in 2020 and further developed in 2022, the curriculum realignment process engaged faculty clusters from all the academic programs to review the program curricula and their expected student learning outcomes. The establishment of the major learning outcomes followed a framework that required faculty groups to consider the alignment between the program with the seven APs, the connection between interdisciplinary (Divisional Foundation and Interdisciplinary courses) and disciplinary (Disciplinary and Elective courses) learning outcomes, and the program's contribution to students' readiness for the Signature Work. These program learning outcomes have been extensively discussed and elaborated by the faculty clusters and received feedback from a broad range of faculty to facilitate necessary adjustments made to the curriculum during the alignment process.

Yet work remains to be done to connect different majors and tracks. While program learning outcomes are well-suited to disciplinary programs, they pose challenges for highly interdependent interdisciplinary programs that need to foster connections and coherence across different disciplines. Many major learning outcomes are divided into separate sets to balance the interdisciplinary and disciplinary content, and the general competencies and specialized expertise, hindering the internal integration of the interdisciplinary and disciplinary courses within a program. Meanwhile, major learning outcomes were developed without sustained reference to one another or a common referent. As a result, many of them do not reflect commonalities across

different majors even when they share similar tracks or courses. Furthermore, our major learning outcomes are connected to the institution's Animating Principles only irregularly and haphazardly.

Course Learning Objectives

Every DKU course is required to go through a course approval process reviewed by both Duke and DKU committees, following a universal course syllabus template that explicitly asks instructors to describe "what will students learn in this course" and "what will students do in this course?" Newly appointed faculty are also required to participate in the Learning Innovation Fellowship (LIF) before they start. Through the LIF sessions, new faculty learn about how to develop their course learning outcomes and how to contextualize their courses in the curriculum. However, due to the lack of specificity in the Animating Principles and the lack of publicity and utilization of the major learning outcomes, the alignment between course objectives and program or institutional goals are never systematically factored into the course approval process.

Student Affairs/Student Experience

Student Affairs (now Student Experience) has established a set of values to guide the development and delivery of co-curricular student experiences. These values – cultural humility, health and wellness, critical thinking, leadership, social responsibility, and respect – overlap with some of the terminologies used in the Animating Principles. Units within Student Affairs have also gone through exercises to articulate their program learning outcomes, preparing staff to align their practices with these overarching values. This initial attempt to align Animating Principles and Student Affairs' values has created a foundation for deeper integration and collaboration. By building on this groundwork, there is great potential for a more integrated and holistic educational experience, where academic and co-curricular components complement and reinforce each other.[1]

USING SKILLS AS A COMMON LANGUAGE

21st century institutions of higher education have been exploring the potential of skills-based curricula. So, too, employers around the world are increasingly emphasizing the value of a broad-based and skills-oriented education, urging universities to shift from traditional credentials and credit hours to skills as the new currency within the employment and education marketplace.[2] The Carnegie Foundation for the Advancement of Teaching, which created the "credit hour" that has dominated learning for the last century, is now leading a movement to push back against a time-based model of schooling; instead, it is urging universities to "rethink how knowledge, skills, and dispositions are acquired and measured."[3] So, too, global employers are increasingly demanding multidisciplinary skills-oriented majors,[4] as demonstrated by the World Economic Forum's skills taxonomy. In China, as in much of the world, employers are facing a pressing need to reskill their staff, thus adding an extra layer of skills demands on universities.[5] This trend will likely manifest in increasing parental expectations to understand the specific skills that students are exposed to during undergraduate education.

In response to the growing demand for skills-oriented education, many organizations and universities are actively working to define and specify skills to make them more understandable and applicable across the learning-earning landscape. The following section will explore definitions of skills in various contexts.

Definition of Durable Skills

There are different terminologies used in the literature to define different types of skills. For example, "hard skills" are typically considered as specific technical competencies required to perform tasks, including manual skills (drawing in CorelDraw, performing heart surgery), technical skills (programming in Python, mastering UX design), and specific cognitive skills (speaking Chinese, performing high-order derivations, writing technical reports). "Soft skills," by contrast, are often identified as interpersonal, social, emotional, and cognitive abilities that are not necessarily job specific. These may include communication skills (teamwork mastery, effective human management), personal skills (self-motivation, emotional intelligence), and broader cognitive skills (analytical thinking, creative thinking, systems thinking).[6]

- **The Working Group notes that the border between hard and soft skills is porous**. For example, the ability to manage teams effectively might be a soft skill for most employees and a hard skill for someone working in human management. Likewise, analytic thinking may be part of the job requirements of a university professor and a desired soft skill for other workers. Moreover, many complex competencies are often made up of both hard and soft capabilities. For example, the often-cited soft skill of "critical thinking" includes understanding how algorithms work and how to calculate and interpret descriptive statistics, skills usually learned in the natural and social sciences, as well as the use of reasoning, logic, and interpretation traditionally associated with writing papers in the humanities and social sciences. Some skills that are described as one thing, such as "project management," combine skills that are traditionally described as soft (e.g., interpersonal engagement) and hard (e.g., optimizing the order of operation).

- **Rather than adopting this binary classification of soft and hard skills, the Working Group prefers the term "durable skills."** Durable skills encompass a broad range of transferable competencies that will remain relevant and valuable no matter how society, the economy, or technology develops. Though there is broad consensus on the importance of durable skills, their exact taxonomies can vary among institutions depending on the institution's mission, vision, cultural and regional contexts, and disciplinary focus. As industry workforce needs and educational research continue to evolve, the list of durable skills also continues to be updated.

External Examples: Breaking Down Skills

Examples of how durable skills are broken down across different contexts can be seen in universities like African Leadership University and Minerva University.

- **African Leadership University** *groups 135 specific skills into seven overarching skills that address four big questions—how to think, how to be, how to do, and how to learn.*

Overarching Skills	Specific Skills
Leading others	*Empathy; Diversity; Relationship building; Feedback; Collaboration*

Leading self	*Self-awareness; Proactivity; Lifelong values; Self-improvement; Self-regulation*
Entrepreneurial thinking	*Systems thinking; Identifying opportunities; Human-centered thinking; Creativity and Innovation; Continuous Iteration*
Critical thinking	*Authentic Inquiry; Evidence/Research analysis; Arguments and judgments; Synthesis*
Quantitative Reasoning	*Data contextualization; Uncertainty and modeling of the real world; Empirical research; Data-based decision-making; Quantitative problem-solving*
Communication for Impact	*Audience; Writing process; Voice; Organizing for effective communication; Storytelling; Presentation*
Managing Complex Tasks	*Scoping; Structuring; Planning; Coordination; Execution*

- **Minerva University** decomposes its core competencies, such as critical thinking, creative thinking, effective communication, and effective interaction, into various levels of specificity. This includes sub-competencies (e.g., reasoning and quantitative analysis) and skill categories, which are further broken down into specific skills. This structured approach illustrates the hierarchy of competencies and organizes them into clear categories, facilitating effective communication and understanding of its core competencies.

Core Competencies	**Sub-Competencies**	**Skill Categories** *(They are further broken down into specific skills.)*
Critical Thinking	Reasoning	*evidence-based, source quality, deduction, induction, bias identification, bias mitigation, fallacies, estimation, ethical considerations, ethical judgment*
	Quantitative Analysis	*algorithmic strategies, computational tools, probability*
	Data Analysis	*descriptive stats, regression, confidence intervals, significance, correlation, distributions*
	Representation	*modeling, visualization, variables*
	Decision Making	*decision selection, utility, game theory, strategize, purpose*
Creative	Interpretation	*critique, context, interpretive lens*

Thinking	Problem-Solving	*right problem, break it down, gap analysis, constraints*
	Ideation	*project navigation, heuristics, analogies, iterative design, optimization*
	Research Design	*hypothesis development, sampling, comparison groups, interventional study, interview and survey, observational study, case study*
Effective Communication	Clarity	*composition, organization, professionalism, thesis*
	Communication Strategy	*audience, quant communication, confidence, persuasion, medium, negotiate*
Effective Interaction	Behaviors Strategy	*science of learning, behavior explanation, emotional IQ, leadership, teamwork, responsibility*
	Systems Thinking	*system analysis, emergent properties, complex causality, networks, system dynamics*

DKU Examples: Exploring Collaboration and Creativity

As a global liberal arts and sciences university situated in China, DKU should define its own list of durable skills. DKU's Animating Principles provide a good starting point for this analysis but require further breakdown into specific and actionable skills to be effectively taught and assessed. The Working Group explored how different disciplines might contribute to giving enough specificity to the constitutive skills in our Animating Principles such as collaboration and creativity.

- **Collaborative Problem-Solving is one of the seven Animating Principles at DKU**. But what does collaboration mean? One break-out group discussed how research can give more precision and guidance to the definition of collaboration. Collaboration is not simply about putting people in a group setting and dividing up tasks. Different roles are needed for teams to be successful, from organizers and expediters, to moderators, devils' advocates, and translators. To be collaborative problem-solvers, students need to experience these roles, learn about each other's skills and weaknesses, and practice setting goals, building trust, and creating positive habits. By identifying and breaking these habits and skills into explicit activities, faculty can offer effective feedback to students.

- **Creativity is one part of DKU's principles of Independence and Creativity**. Another group explored took an interdisciplinary approach by framing creativity through different disciplinary perspectives embedded in their teaching practices. A natural scientist described a DIY (Design it Yourself) project in which students demonstrated what they learned in physics with a self-designed lab that shows inventive possibilities for real life applications. Likewise, a humanist explained how, if we think of creativity as thinking outside the box,

students need to both gain basic familiarity with existing solutions (the box) and find all the reasons to question the box itself. Two key features of this process are trial and error and working in teams to bring multiple perspectives to bear. The Working Group also explored research that highlights different components of creative thinking, such as how to use analogies in problem solving, apply iterative design to conceive and refine products or solutions, and evaluate and apply optimization techniques appropriately.

As the discussion proceeded, it became clear to Working Group members how a skill-oriented approach can help actuate and render general and broad learning outcomes more concrete. The two examples above present possibilities that both research literature and the expertise and experience of DKU faculty can inform cross-university ways to talk about the different dimensions of complex durable skills, including those highlighted in our Animating Principles.

Benefits of Skills

To better understand the skills-oriented approach, it is important to recognize the broad range of benefits this approach can bring for key stakeholders.

- **For learners,** universities that articulate and track the underlying skills they impart can strengthen and support students' abilities to utilize subject and disciplinary knowledge and to tackle intellectual puzzles and solve social problems. The skills-oriented approach eases the acquisition of specific learning outcomes by breaking down abstract and lofty competencies to concrete and tangible skills that can be tied to specific activities, assignments, and experiences. This clarity facilitates transparent assessment, allowing educators to determine whether learners have acquired the practical tools necessary for their chosen field. As a result, learners receive more specific feedback on their learning and progress and are better equipped to articulate what they have learned and accomplished.

  A skill-oriented approach can also help to connect classroom learning with experiential and applied learning as well as to strengthen interdisciplinarity by reinforcing skills that transcend academic divisions. In this approach, learners are empowered to intentionally engage with the curriculum that scaffold and reinforce a well-rounded skill set essential to their academic and professional aspirations. By actively shaping their learning experience, students can use these skills as a thread to connect various elements of their education, both within and beyond the classroom, fostering a cohesive and integrated approach to their overall development. These intellectual and academic benefits will ensure learners a successful academic journey that prepares them to solve ever-evolving social problems, adapt to unpredictable career shifts, and lead productive lives.

- **For faculty members**, this approach allows them to articulate, specify, connect, and track student learning more effectively. By integrating durable skills into the courses, faculty members can further make learning visible to students. This clear articulation of learning expectations in terms of skills breaks learning into concrete and tangible steps and components, which can be clearly and intentionally connected to teaching and learning activities and assessments. When the durable skills are distributed across the curriculum, skills are introduced, practiced and advanced in different courses.

This distributed approach helps address concerns discussed in the Working Group that all faculty would be expected to teach every skill. It became clear that though some skills may be emphasized more in one kind of courses ("estimation" or "regression" are more likely to arise in social and natural science courses, for instance) and some are taught differently in different courses (system dynamics and complex causality in human interactions vs. in the natural world), all students can benefit from knowing some basics of those skills, and faculty members will be able to connect their courses with other courses to facilitate interdisciplinary teaching and learning.

- **For staff members** who offer academic support and co-curricular programs, the skills-oriented approach offers a tangible tool to bridge the co-curriculum and curriculum so that a cohesive and integrated educational experience can be created for students. By emphasizing essential durable skills, academic advisors, tutors, and co-curriculum program coordinators can design their programs and services intentionally to strengthen educational goals set for our academic programs. This alignment between co-curriculum and curriculum extends and complements class learning through informal learning opportunities such as workshops, field trips, mentoring, advising, and on-campus employment. It also provides a solid framework for staff to understand the value and impact of their academic support services and co-curricular programs. This enhanced understanding can boost staff morale, motivation, and sense of purpose, which as a result might improve staff retention and engagement. Furthermore, greater alignment will foster a stronger collaboration between faculty and support staff, positioning staff as valuable partners and educators in building a holistic learning and support system where students can integrate their academic and co-curricular experiences.

- **For the institution**, a durable skills approach has several advantages. It recognizes the importance of articulating the tangible skills that undergird a liberal arts and sciences education while simultaneously blunting pressures to focus on narrow technical skills and majors. The ability to demonstrate a tangible list of skills that students acquire can also improve a new universities' legibility and identity and strengthen connections with stakeholders and partners in industry, community, and government. By focusing on durable skills, a university can better prepare students for deepening their content expertise in graduate school, changing jobs over the course of their career, becoming more capable to contribute to the resolution of complex social problems, and navigating the uncertainties of modern society. And a skills approach can highlight the contributions that all faculty make to educating students.

  So, too, a skills-oriented approach can complement other curriculum measures (e.g., a broader project focused on the organization of majors and the core content that students are expected to master) by providing a structured framework for articulating essential skills that can be used to connect different courses and disciplines. By integrating skills development with content mastery, the curriculum can gain better clarity, coherence and legibility that provide intellectual and academic benefits for students, faculty, staff, and the institution.

RECOMMENDATIONS

There is general agreement among the Working Group that integrating a skill-oriented approach to DKU's curriculum and teaching practices can significantly enhance DKU's curricular coherence and improve its program legibility. Our primary recommendation is that DKU should begin a process to define essential durable skills derived from the Animating Principles and from course and major learning outcomes. The end goal is to establish a set of DKU's signature skills and habits of mind that include sufficient specificity that they can be translated into actionable and teachable elements to help create alignment and connection between the animating principles, the major learning outcomes, and the course objectives (see Figure 1). We aim to build out a set of *signature DKU habits and skills that will be more operationalizable than our Animating Principles, more transferable than many of our major-level learning outcomes, and more actionable than our course objectives.*

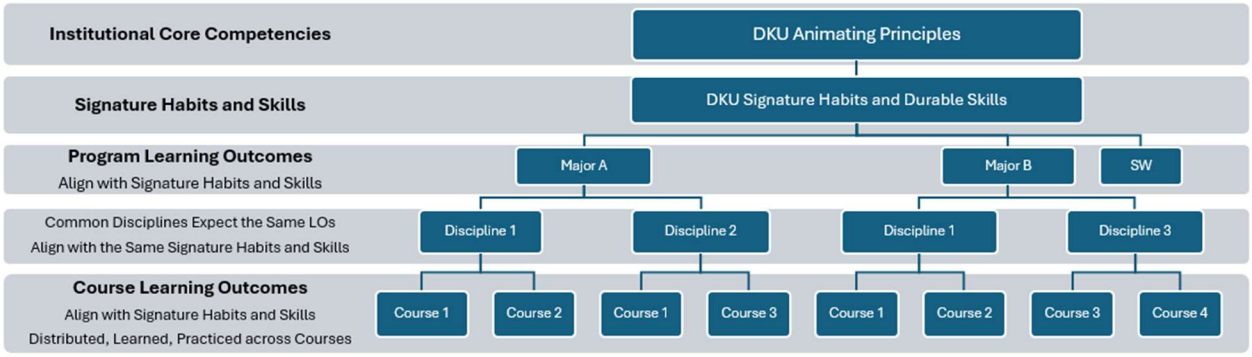

Figure 1: Curriculum Alignment and Connection through Skills

Instead of a full-scale implementation, the Working Group recommends a multi-year and multi-stage implementation that starts with a pilot with a few key courses, and gradually expands to more courses until it is fully institutionalized with all courses. At each stage, the implementation starts with articulation and communication of skills, transitions to integrating skills to teaching practices, and finally focuses on the assessment of skills (See Figure 2):

- **Articulation and Communication of Skills**: At this level, the focus is on defining and communicating the durable skills that DKU students are expected to develop. It will start from breaking down the seven Animating Principles to specific competencies and skills. Faculty will identify skills taught or practiced in their courses that align with skills contributing to the Animating Principles. The definition of skills will be widely communicated to increase understanding and awareness of these skills among faculty and students. We expect that this process will generate conversation among faculty about our common enterprise as we work together to identify, discuss, and refine key ideas.

- **Integrating Skills to Teaching Practices**: Once the definition of skills is well articulated and shared within the DKU community, faculty will embed the identified skills into their teaching practices and learning activities. This will involve linking the development of skills to various teaching strategies that prompt students to actively practice and refine the targeted skills.

- **Assessment of Skills**: The final level focuses on developing assessments to ensure that students are evaluated not just on content knowledge, but also on their proficiency in the targeted skills. This will involve development of rubrics that define specific criteria related to skill proficiency, and deployment of assessment methods that require students to demonstrate their application of targeted skills in contexts that are appropriate for the course.

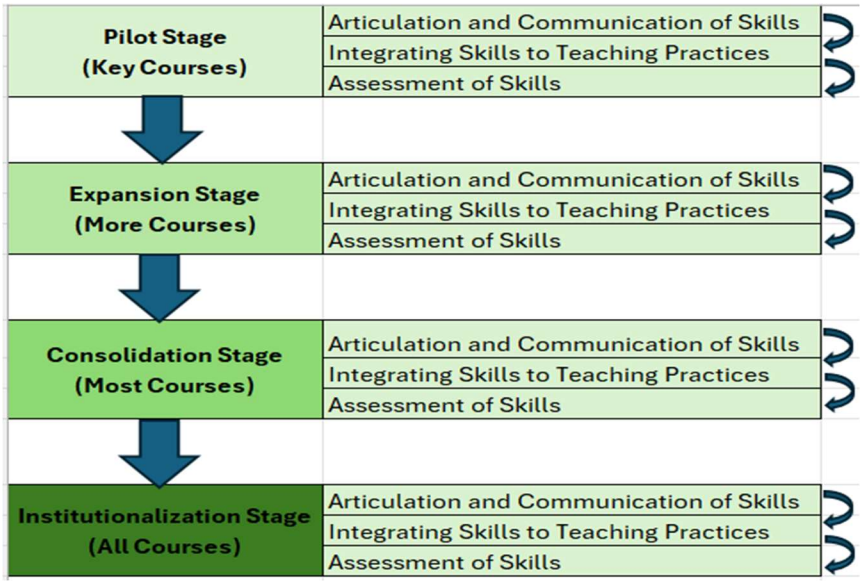

Figure 2: Multi-Year and Multi-Stage Incremental Implementation Process

Strategic Pilots in Key Areas

The work of identifying DKU's signature habits and skills must be undertaken by faculty, whose effort ought to be informed by research studies and embedded in DKU's contexts. They will build on what has been established, such as the Animating Principle and the major-level learning outcomes, to weave together the existing elements of our curriculum into a synthetic, legible, and measurable whole.

To strategically pilot a skill-oriented approach, we recommend selecting pilot courses based on criteria such as the size of the student body to be impacted, the presence of team-taught/developed courses that feature collaborative teaching, and existing organizational structures to support coordination. By targeting courses with a large number of students, the pilot could maximize its broad exposure and representativeness of feedback. Prioritizing courses with strong interdisciplinary components would encourage the integration of diverse perspectives from the instructional team. Tapping into existing organizational structures such as course leads/coordinators would allow us to leverage their expertise and institutional knowledge to streamline coordination efforts and provide oversight of the pilot. With those points above, there are several potential areas that are good candidates for the strategic pilot:

- Common Core courses
- Chinese and EAP courses

- Two-credit writing courses
- Large-enrollment courses

Each pilot group can first identify Animating Principles that their courses primarily contribute to, and then render abstractions in the Animating Principles concrete by translating them into specific durable skills. Utilizing research findings, reflecting on own practical experiences, and engaging different disciplinary perspectives, faculty identify underlying sub-skills and habits of mind to define what each durable skill means and how they transfer from one course to another. Content will continue to be important, but instructors may need to adjust their teaching practices, learning activities, and assessments to ensure that these identified skills and habits of mind are facilitated, practiced, demonstrated, and assessed through targeted tasks and projects.

Incremental Implementation FAQs

To navigate the complexities of an incremental implementation, key concerns around challenges of integrating a skills-oriented approach need to be carefully addressed. The Working Group highlighted four critical questions in particular to guide future discussions and decisions on effectively rolling out this approach.

Question 1: What's the difference between skills and learning outcomes?

Learning outcomes define what learners should know or be able to do with the knowledge they acquired by the end of an educational activity (e.g., a class, a course, or a program). They often encompass three broad categories including knowledge, skills, and attitudes. While learning outcomes outline the intended achievements or goals expected of the learner, they do not offer a roadmap for how students achieve those outcomes. They are typically tied to the specific content knowledge of a particular course or program, making them difficult to transfer directly to different contexts without additional modifications.

Skills, on the other hand, offer tools and methods used to achieve those outcomes. They help break down learning outcomes to specific components, each of which can link to a specific learning task or activity. Take a learning outcome stated as "students will be able to conduct a scientific experiment to test a hypothesis in biology" as an example. This learning outcome represents the expectations for students in a Biology class, and several skills are required to achieve this outcome, such as data collection, data analysis, interpretation, and reporting. Some of the skills can be transferred to a Chemistry or Psychology course, even though the learning outcome used for the Biology class may not.

DKU has established learning outcomes at the institutional, program and course levels, but the skills embedded in those learning outcomes are not clearly spelled out. Through the skills-oriented approach, faculty can bring more specificity to their learning outcomes, identifying underlying skills that are required to achieve those outcomes.

Question 2: "Do I need to cover all the durable skills defined by the University?"

As seen in many new course proposals, new DKU faculty members often try to demonstrate their commitment to the university's vision by attempting to tie their course objectives to all seven

Animating Principles, which can render the results overly broad. This approach is reinforced by the current course evaluation questions which include a long list of learning outcome questions that seem to suggest that all courses are evaluated against all the skills deemed important by the university. These issues, stemming from the lack of clarity in the distribution of learning outcomes, create pressure on faculty to cover an extensive range of skills, regardless of their course's core priorities and primary focus.

These factors contributed to the Working Group's concern that faculty may be expected to teach all skills to ensure comprehensive learning for their students. Yet this is not what a durable skills approach requires. Instead, systematic curriculum mapping that distributes essential skills across the curriculum will enable faculty to understand how their courses align with different skills and where students have opportunities elsewhere to master those skills.

Minerva University provides one example of this kind of cross-curricular scaffolding. It embeds skills within and across courses. At the course level, a set of skills are introduced and practiced through various learner touch points such as in class, in experiential education, in each assignment, and in a final project. At the curriculum level, specific skills are distributed across multiple courses at different levels and with different emphasis. In universities that adopt this approach, students can track how well they have applied a particular skill across their journey through the curriculum.

Question 3: "Will incorporating skills into my teaching compete with the delivery of content?"

Not necessarily. When done well, incorporating skills can enhance content learning and vice versa. Skills and content are not in competition; they complement each other. Content provides the context and substance for applying skills, while skills enable students to engage more deeply with the material, making it more meaningful and relevant. Incorporating skills doesn't mean sacrificing content—it's about finding a balance that fosters deeper understanding.

The Working Group recognized that incorporating skills more intentionally in individual courses and across the curriculum requires faculty to further focus on best practices in teaching and learning. Traditional educational models prioritize content delivery, focusing on the breadth and depth of subject knowledge within a discipline. In contrast, a skills-oriented approach emphasizes the development of essential durable skills that are applicable and resilient across different disciplines. Though balancing content and skills can pose challenges, many universities have successfully implemented this approach, drawing on research from the science of learning to guide their practice. For example, active learning strategies, such as project-based or problem-based learning, show how skills and content can be integrated effectively, helping students apply their knowledge in real-world contexts.

Question 4: "How can we make this implementation process manageable?"

Full implementation requires coordinated efforts and support. DKU has already made some progress in defining learning outcomes at the institutional, program, and course levels, cultivating a culture that promotes educational innovations, and offering a wide range of faculty development programs to support active learning strategies. It is encouraging that DKU has laid foundational groundwork in these areas, positioning the institution midway through the integration. The lessons learned from the strategic pilots will provide valuable insights, feedback, and potential directions

to help enhance the existing structures (e.g., break down the Animating Principles to measurable and concrete skills) and address key weaknesses and issues in the curriculum and teaching practices.

If the pilot stage is successful, a more coordinated effort can be taken to expand the integration to a wider range of courses. It is crucial to exercise caution to avoid overburdening the system and risking burnout among faculty and students. Any process should begin by generating conversation among faculty about our common enterprise as we work together to identify, discuss, and refine key ideas. From there, more specific work can be developed over time to integrate attention to durable skills into the classroom and the design of appropriate assessments.

Throughout this process, faculty support and resources will be critical**.** Embracing a skills-oriented approach will entail vocabulary-building, the establishment of new norms, and shift of teaching paradigms. During the pilot and later implementation, considerable effort to faculty development and support will be needed to equip DKU faculty to integrate DKU's signature skills and habits of mind into their assignments, courses, and programs. More generally, we should consider ways to increase the capacity and support we offer to all faculty through units like the CTL, the Office of Assessment, the Institute for Global Higher Education (IGHE), and Learning Innovation and Lifetime Education (LILE) at Duke.

Professionals and faculty fellows/leads in those units carry expertise that can ensure the skills-related work is grounded in research in teaching and learning. Peer support networks established by programs like the Learning Innovation Fellowship, faculty learning community, and Visit a Class can also be leveraged to facilitate collaborative course design and interdisciplinary teaching among colleagues. Importantly, these initiatives should reach out to a wide range of faculty expertise and experience levels, ensuring that all instructors, not just the CTL super users, receive sufficient training and support to effectively implement skill-oriented principles in their teaching practices.

Continuous tracking and improvement are essential for a skill-oriented educational model. The assessment process can help achieve the goals of this report though innovative approaches such as visual mapping of skills across courses, providing a clear framework for students and faculty to understand how essential durable skills are integrated and developed throughout the curriculum. Authentic assessment practices, such as project-based assessments and real-world simulations, offer meaningful feedback to identify both areas of strength and potential gaps in skill development. These assessments not only evaluate student performance but also guide instructional improvements.

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