Working Group: Preparing Students for the World

CO-CHAIRS

**Jill Sible**
Assistant Provost for Undergraduate Education / Biological Sciences

**Matt Wisnioski**
Associate Professor Science and Technology in Society

Summary of Activities to Date

The Preparing Students for the World group met a total of four times this semester with each of their meetings building on prior ones. In between meetings, group members completed readings and other activities that would help inform them about the future and facilitate the visioning process. In addition to the white papers provided by the Beyond Boundaries team, committee members used sources on the topics of technology and global history, preparing students for the workforce of the future, history of higher education, predictions of the future, and leadership. In between meetings, members completed individual activities that required them to think about radical (and positive) suggestions for preparing students for 2047 and about what would be the same or different in 2047 than today. The group also used findings from the undergraduate student input session and an additional in-person student survey that was conducted to further inform their discussions.

Figure 2: Agenda
Group’s Discussions

The Preparing Students for the World group discussed how students engage in higher education. These discussions focused on what group members had found meaningful as students; what guiding principles they believe an education should have; what they think about the future including barriers that will be encountered; the differences between fads, trends, and deep forces; and VT’s strengths. The group then used these findings to develop three scenarios, each focusing on one area: Experiential/participatory learning, T-shaped learning, and Ut Prosim.

A Meaningful Education

By sharing each other’s meaningful student experiences, committee members were able to get to know one another better and identify aspects of an education that make an impression on people. This discussion helped set the stage to identify further the principles that would guide how students should be prepared for the future. Below are the guiding principles as agreed upon by the committee.

Guiding Principles

- Person centered
- Engage the whole person
- Reflexivity
- Accessibility
- Inclusivity
- Flexibility

Members discussed that learning should be centered on the person. The focus should be on the student’s learning and establishing a desire for them to learn for the sake of knowledge and not a grade. To keep education centered on the individual, the whole person must be engaged. Therefore, it becomes important to educate the whole student and to use approaches such as T-shaped learning. The committee envisions learning that involves opportunities for student reflexivity about experiences in and out of the classroom. Members agreed that students’ education must be inclusive of viewpoints, ideas, and voices and should provide access for all students. Furthermore, flexibility in how students learn is also important. Problems of the future are too large for individual disciplines to help students tackle. Rather, silos should be removed so that students are encouraged to explore and collaborate across disciplines.

Envisioning 2047

While thinking about the future, the committee discussed speculations vs. predictions vs. design and thought about these in relation to fads, trends, and deep forces. Committee members were focused more on the deep forces that would shape the world and higher education by extension. Prior to this meeting, they surveyed students on campus about what they thought would be similar or different from today in 2047. Findings from the survey were used to inform their discussion. Below are the deep forces that they identified.
Deep Forces

- Globalization
- Climate change
- Population growth
- Urbanization
- Information technology
- Economic inequality
- New educational models

Group members discussed that due to existing demographic information and forecasts for the next few decades, the population is expected to grow causing for communities to become denser. The “traditional college student” is also likely to change (e.g., older and with a completed career) requiring more flexible curriculums. The world will be more interconnected with an increased use of technology and the exchange of cultures. As the process of globalization continues into 2047 students will require global learning experiences that include diversity (e.g., study abroad). The group also discussed that current literature indicates that climate change is another deep force. Environment changes may impact students’ college educational experiences (e.g. majors offered). Other forces that are likely to impact the world are economic inequality. As a result, there is speculation that higher education may become harder to access. Members discussed the need for Virginia Tech to have continuous accessibility. All of these forces will foster educational models that will include an increase in interdisciplinary majors and experiential learning.

Virginia Tech’s Challenges

- Geography
- Scale
- Rewarding Faculty
- Diversity

In preparing future students there are a number of university challenges that the group identified. Virginia Tech’s geographic location can make it difficult for students to access global and diverse opportunities. As a result, it is crucial for the university to continue working towards diversifying the learning environments on campus. The scale of the university also makes it difficult to ensure that students across campus have access to the same level of quality opportunities. Additionally, as new learning models develop, faculty will need to be rewarded and supported in the work that they do to offer students innovative educational experiences (e.g., interdisciplinary courses).
Draft Tools

Work in Progress

The group used the guiding principles, external deep forces, and the university’s challenges to create three scenarios. Each scenario focused on one of the following areas: Experiential/Participatory Learning, T-Shaped Education, and Purpose-driven Learning (Ut Prosim). These scenarios have been designed to brainstorm on how Virginia Tech will prepare future students.

Members believe that educational models in the future will require for a growth in experiential learning beyond the classroom, allowing for more hands on experiences and exposure to diverse populations and settings. Students will experience T-shape learning and gain knowledge across disciplines and settings (e.g., communities) to better prepare them to solve complex world problems. They will need to contribute to areas outside their expertise. Courses and co-curricular activities will provide a seamless integration of learning experiences. Students will be able to make strong connections across their learning in and out of the classroom. Communities of faculty, staff, students, and community members will be created for students; the whole world will be a place for learning. In these communities students will use their interdisciplinary knowledge and further develop it along-side of faculty, staff, and community members. They will be forced to interact with people that are different than them. Students and faculty will be engaged in purposeful driven work that fuses learning, scholarship, and outreach. While technology will continue to develop in the next three decades, it will merely serve as a tool to educate students and not by replacing human interaction. The following are the three scenarios that have been developed to this date and are being discussed by the group.

Experiential/Participatory Learning

Students will live in a world that will be highly diverse and interconnected, requiring them to know more about other people and have diverse experiences beyond the classroom. To better prepare students for the world in which they will live, in 2047 Virginia Tech will require all students to complete at least (but are not limited to) one multi-semester long experiential/participatory learning activities. Activities that fall under experiential/participatory learning will include service learning, leadership training, research, internships, study abroad, vision trip, community involvement, educational trip, student organizations, and project-based courses. The options that students will have to fulfill the experiential/ participatory learning requirement are person-centered, reflexive, accessible, inclusive, flexible, and engage the whole person.

To ensure that the experiential/participatory activities are of high quality, there are several aspects that must occur. First, students will be prepared prior to initiating these experiences with course work and other knowledge (e.g., historical context if different location). Preparation prior to these learning activities will allow students to feel invested, be self-motivated, and take ownership during their experiences. Second, the experiences must yield lasting bonds with faculty, students, and those in which they engage. The experiences must be diverse in ideas or interactions. Third, the experiences must not end abruptly; this might mean that the experiential learning activity lasts
multiple semesters. The experience will be integrated into the remainder of the student’s learning experiences through a cross disciplinary capstone university course, poster symposiums, seminars for students to reflect on these experiences, etc. It is important for students to reflect on new acquired knowledge and how to make sense of it in relation to rest of their life (academically, professionally, and personally).

To make these opportunities accessible to all students, the university can offer experiences that vary in time (e.g., one week, a month, etc.) and also address the additional cost by including it into the tuition price, have scholarships and grants available to students, find ways to pull from the large network of alumni, and the use of technology.

*The T-Shaped University (Interdisciplinary)*

The world that VT graduates of 2047 enter will present ever more broad-ranging, complex and difficult problems to solve. It is unlikely that one discipline, working in isolation will be able to resolve these problems. Even today it is hard to consider any of the significant problems facing society without considering all of their ramifications: economic, social, political, health, environmental, etc.

It is more likely that the solutions to these problems will come from teams of interdisciplinary researchers, each member with a different discipline-specific expertise, but each well trained in interdisciplinary team work.

Working with disparate specialties is not a passive activity; members of cross-disciplinary teams need to be able to actively *contribute* to areas outside their expertise. Learning how to do this does not come naturally and needs to begin while students are still in the University.

The T-Shaped Graduate of VT2047 is one who has a vertical expertise in their particular discipline as well as the interdisciplinary skills to horizontally reach out to other disciplines and contribute meaningfully to their work. This starts with the T-Shaped Student of 2015.

Separating the work or contributions of one person from another in an interdisciplinary team is extremely difficult and is in effect self-defeating. Project oriented work needs to focus on the project and not on the grade; individual grades are essentially shorthand and tell very little about the contributions of a specific team member.

As we move towards interdisciplinary teams the University needs to reconsider the role of faculty: their new role as interdisciplinary team managers; the place of individually evaluated research; the purpose of tenure.

When working on difficult problems, teams will often try solutions that are “out there” and are eventually proven to not work. We need these teams to risk “failure.” If we want these teams to continue to push boundaries, they can’t be afraid of getting a bad grade. Grading Interdisciplinary work should be evaluated on a pass/fail basis, focused primarily on how well the team worked together.
Students across the University should graduate with discipline-specific portfolios, which focus on demonstrated skills and competencies of their chosen field.

Besides broadening a student’s education, a T-Shaped Student also has an individualized education – no two students will have the exact same portfolio.

*Purpose-driven Learning at Virginia Tech in 2047: Ut Prosim Imbued Education*

In 2047, students will come to Virginia Tech because they thirst for learning to become experts in biology, management, agriculture, psychology, or theatre, but also because they are called to serve humankind and our planet, and are not willing to wait for a degree or diploma before they can start contributing and making a difference.

These students might be 17 or 18, straight out of a high school education, if these still exist, but they might be much younger, with strong foundational knowledge (possibly even as a VT K-8 student) and ready to apply that learning. They might be 67, having completed a successful career in one field and are now eager to both lend their expertise and build their own capacity with new learning as a part of a scholarly and engaged community.

Students will still come to Blacksburg to experience life in residence at one of the most beautiful college campuses in the world, but they know that their learning will not be bounded by geography. Blacksburg (and for some, a satellite or virtual alternative) will be home base, a place for meaningful face-to-face interactions with fellow human beings committed to learning and a shared cause. But students, faculty and staff, working together in close-knit teams, will travel the world to learn and to serve. The whole world will be the extended campus.

Virginia Tech will honor its rich history as a land grant university and military school. Most importantly, Virginia Tech will honor its motto, *Ut Prosim*, as the bedrock of the institution and the feature that distinguishes a Virginia Tech education from any other. Students and faculty who come to Virginia Tech know that they will be engaged in purpose driven work, in which the tripartite mission of learning, scholarship and outreach fuse through collaborative experiential learning.

In 2015 and undoubtedly 2047, the manifestations of *Ut Prosim* need to be different to serve a society, where much is constantly in flux. Service demands a strong capacity in problem solving as well as engaging socially in communities. No longer will a scientist working alone in his or her laboratory be able to make major contributions to solving world issues nor will Peace Corps volunteers be certain of having a positive impact without deep disciplinary skills and a broader understanding of the complex world in which they are working.

The primary learning goal will be to develop T-shaped (and π-shaped) students with the distinguishing feature that at Virginia Tech, there is intentional development of learners in how they connect with each other in community. Students will have the option to engage with deep learning in one discipline or a more interdisciplinary major or both. Students, faculty and staff will come to Virginia Tech and affiliate with others around an issue of mutual concern, and students...
will apply what they are learning in service of this issue. These affinities will form the basis of communities that engage in collaborative experiential learning in a model that is emergent, both flexible and adaptive. Self-reinforcing communities will consist of ~150 members, diverse in all conceivable ways, which operate functionally in working groups of 15 people (10 groups per community). There may be multiple communities centered around the same issue as well as cross-fertilizations across different communities. A community will be constructed with all of the necessary capacities: intellectual, financial, human, social, and cultural. Communities will disrupt the hierarchy by engaging people across all levels of education - K12, undergraduate, graduate, faculty and people outside of Virginia Tech. Mentorship will be built in at all levels.

Some organizational elements that exist today will continue to serve in this new model of learning. Departments or some kind of disciplinary unit organized around deep knowledge will still serve as a place for people to come together to gain and share expertise, resources, and culture. Institutes may serve as entities that provide support and resources to communities working on particular issues.

However, other aspects of university organization and culture will need to change. The rigid college structure does not serve the dynamic, interdisciplinary, and inclusive nature of the community model. Moreover, expectations, rewards, and support for faculty would need to change with engaged scholarship rewarded. The current curricular, credit bearing structure is not a good fit for this work, and is a barrier to facile collaborations between Academic and Student Affairs. These collaborations would need to be seamless to support the work of these communities. Relationships with the broader community outside of Virginia Tech, local and global, would need to be strengthened.

Future Conversations

The two goals of the Beyond Boundaries initiative are advancing Virginia Tech as a global land-grant institution; and strategically addressing the challenges and opportunities presented by the changing landscape of higher education. In consideration of the initiative’s two goals, future conversations in relation to these scenarios will need to consider the following points:

- What are the barriers to establishing experiential, T-shaped, and purpose driven learning at Virginia Tech?
- What does this mean for time to degree?
- Will a college education continue to be viewed as a 4-year degree?
- Does the relationship between faculty and students change? If so, how?
- How do these student education experiences directly help Virginia Tech advance as a global land-grant institution?