Creativity and Innovation

Statement of Ethical Principles

Texas Tech University Ethics Center 2011
“Texas Tech University is committed to ethical institutional programs that meet the teaching, research, and service objectives of each discipline and department, to policies that are consistent with those objectives, and to a working and learning environment that encourages active participation. Such exemplary environments often challenge existing worldviews, requiring trust in the process of discovery and the acceptance of uncertainty and ambiguity within ethical parameters. The university supports all its members in life-long learning—a process that is both challenging and rewarding—and encourages creative and innovative means to achieve this goal through both opportunities and incentives.”
This Module Examines

Creativity and innovation

TTU’s Statement of Ethical Principles

What are Creativity and Innovation?
Finding Inspiration
Exploring personal & social Motives
Learning about the Creative Process
What are Creativity and Innovation?

We usually understand innovation and creativity as **something new or different** introduced into our culture.

A new medicine,
a new technology,
a new way of behaving,
a new wave of fashion,
or simply a new way of looking at things.
What are Creativity and Innovation?

Creativity:
- Create Something New
  - Example: The Wright Brothers’ airplane and steering mechanism

Innovation:
- Reshape Something Old
  - Example: Colonel Sanders’ fried chicken recipe
The Wright brothers built the first airplane that could successfully take flight and be navigated.

Although the idea of man flying had been around for centuries, the Wright brothers executed the creation and testing of the first flying machine.
Colonel Sanders invented a new taste out of well-known spices; he did not invent fried chicken but he gave it a nice innovation.

Today, his recipe is one of the most valued secrets in the fast food industry.
Innovation is strongly associated with a need, a necessity. It could be a personal necessity or a social necessity.

Many innovations begin from a personal need and evolve into a social solution.
In 1821, **Louis Braille** created a new system that allowed blind people to read. He had become blind as a child.

In his time, there were other methods and techniques for blind readers to use. But those methods were complex and limited, and so he improved on them.
Social Motives

Social needs also produce innovations:

- Community Development: Independence, Abolition of Slavery
- Public Health: Vaccine for Polio
- Education: G.I. Bill
- Working Conditions: Child Labor Laws
“Innovation is the process of turning ideas into a manufacturable and marketable form.”

Watts Humphrey, Software Engineer
Ideas develop from a process that spans many stages of our lives and points of reference, and mixes these influences to prompt a solution.
Many of the innovations that we enjoy today started as dreams, visions, or crazy ideas.

Perhaps when these ideas were conceived, it was too soon for them to transition from “idea” to “practical realization.” Still, without those early thoughts, the innovation might never have been realized.
Finding Inspiration

For example:

Physiologist Otto Loewi discovered that the human nervous system also works on a chemical transmission, not just electrical transmission as popularly believed. This discovery and his method of proving it was based on a dream.

Loewi’s innovative discovery and procedure earned him the Nobel Prize for medicine in 1936.
“If we worked on the assumption that what is accepted as true really is true, then there would be little hope for advance.”

The Wright Brothers
Literature has inspired many scientists. The early 20th century saw the realization of many visions that Jules Verne depicted in his science fiction novels.

Many visionaries in Physics and Astronomy now look back at sci-fi programs like Star Trek, which searched for ways “to boldly go where no one has gone before.”
“Creativity comes from trust. Trust your instincts. And never hope more than you work.”

Rita Mae Brown, writer
Finding Inspiration

We all have the capacity to innovate; we do it all the time. We might not change culture with our innovations, but they help us to improve our lives.

*Simple examples of innovation:*

How you modify a recipe,
how you arrange your living space,
how you decide to travel from home to campus . . .
Process of Innovation and Creativity

Innovation comes from ideas. We mostly think of an idea as the Eureka moment, the “Aha!” factor, a moment of inspiration, or the epiphany.

But behind every eureka moment are countless hours of hard work, research, and creative thought.
Innovations don’t just happen. There is always a long line of events that take us from point A to point B.

Graham Bell  ...  Smart phone  ???
Process of Innovation and Creativity

“Innovation—any new idea—by definition will not be accepted at first. It takes repeated attempts, endless demonstrations, monotonous rehearsals before innovation can be accepted and internalized by an organization. This requires courageous patience.”

Warren Bennis, Founding Chairman
The Leadership Institute at USC
College students are exposed to many areas of knowledge, including sociology, politics, history, science, and the arts. Having a wide knowledge base allows you to better understand the spirit of the times, references to other fields, and common perceptions. It also allows you to recognize why certain innovations were not possible in the past.

A great innovator can connect the dots between references, acquired knowledge, experience, observation, and needs.
Process of Innovation and Creativity

Nothing happens on its own. Every piece of knowledge will prepare you and give you the material needed to engage in a fruitful creative process.

A single invention ...

*Plastic*

... millions of adaptable uses discovered through creative and innovative thought ...

Now imagine a day in your life without *Plastic*
Creativity and Innovation

“Genius is one percent inspiration, and ninety-nine percent perspiration.”

Thomas Edison
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Images

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Questions? Comments?
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