I. INTRODUCTORY TOPIC DESCRIPTION

TECHNOLOGY

Teacher/student decision: How might we narrow the topic and focus the investigation based on the curriculum context, areas of interest, intended purpose, and anticipated product/use?

As an omnipresent influence on our world, both currently and historically, Technology is a broad and rich arena for student research, offering many potential areas of investigation, inquiry paths, and research purposes. The arena of Technology, encompassing technological advances, devices, and systems, their uses (and abuses), histories, and impacts on human experience, is applicable in almost any subject area or curriculum context. Technology offers both teachers and students a wide array of options for investigation, based on the researcher's purpose and the anticipated outputs of the research: the uses that will be served and the products that may result.

Because of the breadth and flexibility of Technology as a domain for research, teachers (or students) may need to limit the topic area before initiating the inquiry process. This could begin by focusing on a particular technological field (e.g., robotics), advance (e.g., the rise of the Internet), device (e.g., printing press, smart phone), or phenomenon (e.g., social media, laptop computers and tablets). Limiting could also occur by considering the role and impact of a technology in a particular field of study, such as physics, music, politics, or mass media.

The identified purpose(s) and anticipated product(s) of a student's investigation will also focus the topic and influence the process. If a student intends to use the research to define and inform a thesis-driven academic argument, the topic (and search process) should focus on issues and controversies in an area of Technology or an analysis of the impact of Technology in a particular field or realm of human endeavor. Alternately, if a student is investigating a topic of personal or career interest, and intends to use the research to inform an explanation of how a particular technology works or has been developed, a career or consumer decision, a design problem or plan, or a community-related project, this purpose and its intended results/products should also narrow, focus, and frame the inquiry process.

II. POSSIBLE AREAS OF INVESTIGATION

Teacher/student decision: Which area of investigation might be most meaningful or relevant to a class or student and provide a purposeful context for investigation?

1. Technology's Role in a Historical Event (e.g., the impact of social networking on American politics or recent historical/social developments in the Middle East)
2. The Influence of Technology on Human Behavior (e.g., how social media has changed interpersonal relationships)
3. The Impact of Technology on Learning and Education (e.g., tablets in the classroom)
4. The History of a Technological Advance (e.g., smart phones)
5. The Use of Technology by Industry, the Military or Law Enforcement (e.g., robotics or drones)
6. A Writer's Views about and Representations of Technology (e.g., Ray Bradbury)
7. The Technical Aspects of a Device or System (e.g., how computer chips are produced and work)
8. A Comparative Analysis of Technological Systems (e.g., iOS vs. Windows systems)
9. Investigation of Career Options in a Technology-based Field (e.g., multi-media production)
10. Consumer Research about a Technology-Based Product (e.g., the technical distinctions between plasma and LED TV's)

III. (A) POSSIBLE GUIDING QUESTIONS FOR INQUIRY AND RESEARCH

The following questions can be used to initiate inquiry and to guide students in identifying paths for investigation. The questions are presented somewhat generically, with the idea that a particular technological advance (e.g., smart phones) and/or technologically enabled phenomenon (e.g., social media), identified by the teacher and/or students, would serve as the focus of the questions, inserted where the questions currently say [the technological advance].

Teacher/student decision: Which questions best lead to initial inquiry paths, given the chosen area of investigation, purpose, and intended product? Are other questions/paths relevant?

1. What is the history of [the technological advance]? How was it conceived and developed, and how has it evolved over time?
2. How does [the technological advance] work? What are its component technologies, and how does it integrate with other technologies?
3. What is the science behind [the technological advance]? How did scientific research and/or engineering lead to its development?
4. What are the advantages of [the technological advance] over other technologies? What are its drawbacks or limitations?
5. How has [the technological advance] influenced society and people's lives so far? What long-range impacts might result from its use, both positive and negative?
6. What are the differences in the ways various cultures or social subgroups view and use [the technological advance]? Why do these differences exist?
7. What would life be like without [the technological advance]?
8. How have various authors viewed or depicted [the technological advance]? How do their views compare?
9. What controversies surround [the technological advance] and its use? How do observers with a range of perspectives view [the technological advance] and the controversies surrounding it?
10. How is [the technological advance] viewed and discussed by academicians in related fields? What are the academic debates surrounding its development and use?
11. What career options and opportunities are related to [the technological advance]? How might someone learn about and pursue those options?

III. (B) POSSIBLE GROUPED INQUIRY QUESTIONS

1. What is the history of social networking? How was it conceived and developed, and how has it evolved over time?
2. How does social networking work? What are its component technologies, and how does it integrate with other technologies?
3. What is the science behind social networking? How did scientific research and/or engineering lead to its development?
4. What are the advantages of social networking over other technologies? What are its drawbacks or limitations?
5. How has social networking influenced society and people's lives so far? What long-range impacts might result from its use, both positive and negative?
6. What are the differences in the ways various cultures or social subgroups view and use social networking? Why do these differences exist?
7. What would life be like without social networking?
8. How have various authors viewed or depicted social networking? How do their views compare?
9. What controversies surround social networking and its use? How do observers with a range of perspectives view social networking and the controversies surrounding it?
10. How is social networking viewed and discussed by academicians in related fields? What are the academic debates surrounding its development and use?
11. What career options and opportunities are related to social networking? How might someone learn about and pursue those options?