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Michael Dennin's Group Report
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What does the university need to do to ensure that faculty have the digital fluency to engage with students where they are? Our group was charged with addressing this critical question of digital fluency, and we explored the following three ways to identify and bridge digital fluency gaps:
1. Better understand where students are (and what they experience in the classroom)
2. Gather information more broadly and systematically
3. Create a campus-wide task force

Although these items/recommendations are not exhaustive, they represent a range of (short-term and long-term) strategies for dealing with the digital fluency issue. For (1), a sub-group of the team conducted a class activity to demonstrate what one could do to better understand our students and their experiences. For (2), we developed a set of (potential) survey questions designed to gather relevant information more broadly and systematically. Lastly, for (3), we explored how the university could form a task force to implement (1) and (2) and come up with longer-term solutions.

1. Better understand where students are (and what they experience in the classroom)

To understand whether students experienced any gap in digital fluency when interacting with faculty, we conducted a class activity in Informatics 153: Computer Supported Cooperative Work in April 2022. Students were given the definition of digital fluency and were asked to describe any instances of the digital fluency gap they have experienced in the past 12 months. We also asked them to envision a solution to address this issue. Sixty students submitted their answers, ranging from half a page to a whole page long.

All students noted that they had experienced some digital fluency gaps in the past year. Most of them described the instances when taking online classes or interacting with professors through digital communication channels. The most mentioned issues were how to use Zoom fluently, e.g., attending to chat during lectures and sharing the correct screens or audio during lectures. Students also said several broad technology gaps, for instance, how to embed digital materials, e.g., YouTube videos, in the slides and play them without copying and pasting the URL, and how to communicate with students through digital platforms such as Piazza, Slake, or Discord. Students refer to these as the "*learning ecosystem*" and wish faculty could be more fluent with the,

Despite the gap, most students thought the experienced digital literacy gap was not problematic or significantly affecting their learning experiences. Many students praised their professors for being competent in their knowledge and technical areas, noting what was missing was only the "*media literacy*" due to the generational differences. One student noted: "*There is a common situation in college – professors have less proficiency on media control than students. Professors of computer science may also face this situation because they may focus more on deeper digital technology problems and ignore simple problems.*" "*A professor's role should be more focused on teaching than technical issues.*" Students have also been

sympathetic to faculty for the sudden transition to online teaching due to COVID. Students proposed three ways to address this issue (See Appendix 1).

2. Gather information more broadly and systematically

Relevant information can be gathered more broadly and systematically through a campus-wide student survey. Appendix 2 presents two sets of (potential) survey questions. The first set focuses on what technology needs students have at the beginning of their college career. It also includes questions for a follow-up assessment. The second set is aimed at assessing the ways in which students consume the media and process (mis)information that they receive. Two examples are provided: (1) uses a news article that presents some questionable, but shocking, information to check whether students would spread it (that is, share with their friends), or check its validity first and (2) uses a news article whose headline is technically correct, but conveys a wrong message to test on whether or not students tend to believe the headline without reading the text and getting a more complete picture.

3. Create a campus-wide task force

Digital technologies are constantly evolving over time, and they will continue to reshape the way we study and learn from one another. Although valuable, one-time actions may not be sufficient to deal with all issues of digital fluency effectively. We propose a task force as a vehicle to support the above two action items and come up with long-term strategies.

Where to start? Some universities (e.g., Virginia Tech[1]) adopted a library-oriented approach to forming a digital literacy initiative or task force team. While this is one possible model, it is important to note that there are other units/groups that can play an important role, such as CEP, DTEI, OIE, OIT (Educational section), and student organizations.

What to consider or emphasize? It is recommended that the task force address issues of digital fluency gaps in a holistic, inclusive, and sustainable manner. It may serve as a stepping-stone to a more permanent mechanism (or campus programs) that can effectively manage constantly changing digital technologies and pedagogical environments. In doing so, it may identify and take advantage of some relevant programs or initiatives, such as DTEI workshops, Freshman seminars, and the "Communication" course designation.

Potential Outcomes and Results: The charge of the task force and the resulting outcomes are tied. The charge of the task force is to develop long-term strategies to address digital fluency gaps and relevant issues. Some of the possible outcomes are summarized in Appendix 3.

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[1]

https://vtechworks.lib.vt.edu/bitstream/handle/10919/104030/Digital%20Literacy%20at%20Virginia%20Tech%20Singapore%20Sharing%20Session.pdf?sequence=1

Appendix 1.

1: Providing more resources and training to faculty: many students mentioned that it is crucial to provide sufficient and continuous training to faculty and provide additional IT support, not only on hardware and network but also on media use, to help them with technical challenges quickly.

> *"From my perspective, digital fluency gaps are inevitable due to the different generations growing up with different tools and technology. However, providing resources to bridge this gap could help older generations become more familiar with new tools."*
>
> *"An example of this proposed solution would be holding workshops or training sessions that help individuals build the skills and competencies needed."*
>
> *"Schools can regularly conduct technical education training for professors. First, technology is constantly being updated. Continuous learning is necessary. Secondly, technical training can reduce the situation that professors encounter technical difficulties on the way to class to avoid delaying the progress of the course."*

2. Understand students' needs and expectations: several students talked about the lack of timely class updates would lead to overcommunication among individual students. Understanding students' information needs and communicating with them timely can avoid this situation.

> *"One of which is on canvas where the professor doesn't post any information about the class such as quiz dates, grades, resources, and syllabus."*
>
> *"...I can imagine if similar issues arose mid-quarter and a professor couldn't post assignments or announcements online that it would give many students a headache which in turn could turn to a flood of emails to the professor who would also get a headache."*
>
> *"Therefore, establishing clear lines of communication between students and faculty will be the most ideal solution to address any problems in the digital fluency gaps. Some examples of this include posting in the syllabus important emails, Piazza, ed Discussion, and office hour times. To further reduce problems, faculty should also provide important guidelines like email/question answering times and etiquette."*

3. Fostering the students-faculty collaborative relationship: many students talked about their positive experiences in assisting professors with technical issues. They deem it as a collaborative relationship and are willing to partner with faculty to create better teaching/learning experiences.

> *"There were some technological challenges we faced, but my peers were able to quickly help professors better understand and navigate through the various digital tools we used for remote learning."*
>
> *"Students should also remain cordial and helpful instead of acting out."*
>
> *"I believe that having students like me provide tech support to their professors is the ideal solution to this problem, whether it is remote or in person."*

Appendix 2.

Set #1. This short survey, done in conjunction with OIT, will assess what technology needs students have at the beginning of their college career. Another assessment will take place after 2 years at UCI.

1. What technology have you used in the classroom that helps you learn?
   Open-ended response: _____

2. What technology helps you learn? Choose any/all that apply
   a. chatrooms / discussion boards
   b. smart phone
   c. interactive polls in class
   d. laptop
   e. Google docs / sheets
   f. Other, specify: _____

3. Regarding the technologies selected above, please rank the priority, from highest to lowest, in terms of what helps you learn.
   Open-ended response: _____

4. The level of technology integration into the classroom is:
   a. way too little
   b. slightly too little
   c. just right
   d. too much
   e. way too much

Survey for mid-career undergraduates:

5. What aspects of technology that help me learn are underutilized by professors at UCI?
   Open-ended response: _____

6. Regarding (5), please elaborate on how professors might better use this tool to maximize your learning.
   Open-ended response: _____

Demographic information:

- Gender, race/ethnicity, family income level, parents level of education
- Major (intended or actual)
- Domestic or international student

Appendix 2 (continued).

Set #2. This survey is aimed at assessing the ways in which students consume the media and process (mis)information that they receive. The first piece contains a news article that presents some questionable, but shocking, information. The students are asked whether their impulse would be to spread it (that is, share with their friends), or check its validity first. The second piece contains a news article whose headline is technically correct, but conveys a wrong message because it is taken out of context. Reading the actual article text (and not just the headline) would clarify everything. The students are tested on whether or not they tend to believe the headline without reading the text and getting a more complete picture.

1. Read this news article and answer the question at the end.

   > Killer sparrows are moving from the East A new sub-species of sparrows has been reported to spread from the East. These innocent looking birds show unusually aggressive behavior, not normally observed in other types of sparrows. Multiple cases of small flocks attacking people have been reported. Individuals who experienced an attack complain of multiple painful bites and scratches, and many have suffered a severe allergic reaction. A community in the Eastern part of Irvine was hit especially hard. Exercise extreme caution when leaving the house. Small children and elderly individuals are at a higher risk to be hospitalized.

   What would be your immediate action after reading such a news article (choose one):
   a. Share with your friends, because you are worried about them.
   b. Search the web to find out more about this.
   c. None of the above

2. Read this news article and answer the question at the end.

   > A local man dies after receiving a new anti-diabetic treatment. Tuesday, January 22. Jerry K, Irvine, has been waiting to receive a new anti-diabetic treatment for 17 months. He suffered from a type-1 diabetes, taking daily medication. Two years ago, BioPharmaCorp announced the release of a long-anticipated, new diabetes 1 treatment that not only helped relieve most of the symptoms, but addressed the very cause of the disease. Clinical trials demonstrated that the treatment is very safe and highly effective. Jerry had been put on a waiting list and recently received the news that treatment would be administered in his home town, Irvine, in January. After a week-long preparation and a two-hour procedure at the hospital, the man was released. The doctors said that they were happy with the outcome of the procedure. Unfortunately, Jerry was hit by a car and died on the spot minutes after leaving the hospital.

   What is your opinion about the new anti-diabetic treatment described in this article (choose one):
   a. It is a dangerous treatment because a man died after being treated.
   b. It is not a dangerous treatment, according to this article.
   c. I do not have an opinion about this treatment.

Appendix 3.

- Identify strengths and weaknesses of digital literacy on campus including students, faculty and staff
- Identify what steps peer institutions have taken to address issues of digital literacy
- Identify the resources available on campus to increase digital literacy of UCI constituents
- Develop a recommendation for new resources needed to support campus digital literacy (in a way that promotes diversity, equity, and inclusion)
- Utilize existing resources in the recommendation
- Recommend a long-term plan for achieving digital proficiency
- Set realistic goals for achieving intermediate targets (5 year plan) and long-term targets (10 year plan), the goals have to be specific and achievable