

THE GALEN TIMES

"You have to expect things of yourself before you can do them" - Michael Jordan



What this issue's all about:

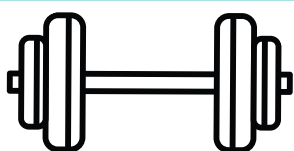
Be your own motivation

Schrödinger's Student

Anthropology Day

Events

Important Dates



Be your own motivation

As we are still faced with challenges associated with the Pandemic, we must try and find ways to co-oping both physically and mentally. We always hear people go on and on about how exercising is beneficial and mentally relaxing. There is a reason why this continues to ring in our ears. We know that exercising helps your body physically through the loss of calories and building muscle, but did you know it also provides various mental health benefits? Sometimes you may find it difficult to continue the tedious process of exercising but trust us when we say, it helps! You don't have to start big like 100 push up, 100 squats, or hours in the gym, a simple 10 minutes exercise a day is enough. With time you can increase your routine where necessary.

Maybe you can start with walking around your neighborhood park in the evening with some relaxing or motivational music. Motivational speeches are also successful ways of getting you into the mindset of exercising. You can do it, you just got to believe it. However, we also must remember that all body types are beautiful and worthy of love.

Schrödinger's Student

By: Dr. Aguilar

We're a few weeks into our new spring semester on this year of renewals...and I hope your experience here at Galen University is everything you hoped it would be. Despite the challenges of disease and distance, we press on toward the high mark of success.

It is this challenge that has given me some food for thought this month, and I thought I would share some ideas with you.

There's a saying among researchers in a particular branch of physics: "If you think you understand Quantum Mechanics, you don't understand Quantum Mechanics." This statement in its original form is attributed to the late Richard Feynman, who wrote some truly fascinating papers about the properties of light, such as one exploring the idea that light actually travels an infinite number of pathways between any pair of points before settling on what we perceive to be a straight line. Yeah... physics and mathematics get really, really strange at the more advanced levels. But that just means there's more of them to love.

I actually remember taking an Advanced Mathematics class in my Ph.D. program that felt more like a philosophy or religion course than an empirical one... think, "Number systems might only work because we believe that they do, and we can never find a comprehensive set of rules that all numbers will follow," but I'll tell you more about that in a future article.

For now, let me mention an aspect of Quantum Mechanics with which some of you might already be familiar: Schrödinger's Cat.

Erwin Schrödinger was a physicist who, in 1935 was having a chat with Albert Einstein – yes, that Albert Einstein. During the course of their conversation, Schrödinger proposed a thought experiment in order to illustrate a potential inconsistency in the way that quantum mechanics was then understood. It's simpler than it seems. A "thought experiment" is exactly what it sounds like; it is a way of thinking about a scientific theory in order to explore its consequences without actually devising a test in the real world.

This is sometimes necessary because a scientific theory is often quite a bit ahead of scientific practice. If we want to consider, for example, what would happen if an artificially intelligent supercomputer managed to take over the world, it would be cheaper, safer, smarter, etc. to just... think about it for a while rather than trying to build one and hand it the keys to the city.

Sometimes thought experiments are the only way to really investigate certain areas of scientific inquiry because we can't yet travel to the stars, visit the planets, or manipulate the tiny units of matter and energy that make up our atoms and molecules... and this last one is exactly the realm in which Quantum Physics hangs its subatomic hat. The problem with devising laws and principles about things that are really small is that we cannot directly observe their behavior. Until fairly recently, we didn't even know what a "virus" was, and now we're all being impacted by the global spread of a particularly nasty one.

But that very idea provides a solution. We may not be able to see viruses with our naked eyes, but we can certainly detect their presence when they affect those macro-molecular bags of chemicals that we affectionately refer to as "us." In exactly the same way, we might not be able to examine sub-atomic particles (and by the way, how did Ant-Man see if he was smaller than a photon of light in that movie?) but we might be able to examine their effects on something that we can monitor.

So back to the Schrödinger-Einstein Conference for Two. One interpretation of how quantum particles work (called the "Copenhagen Interpretation," named after the location of the institute where it was developed) is that they exist in something called a "superposition," a set of possible states (matter, energy, location, time, etc.) until they are observed. Until it interacts with an observer, something external to itself, a particle is in a state of potential reality... and until we check it, it isn't that it might be in State A or State B... it is in both, and neither at the same time.

Needless to say, this idea is controversial; after all, what does our observance of a thing have to do with its nature? How can looking at something “lock” it into a reality that it had not experienced until that point of examination? And yet, there are experiments yielding data that can best be understood in just this way. Light may act as a particle and a wave.

Particles can affect each other across vast spaces instantaneously, with no information traveling between them. A watched pot never boils. That light in your refrigerator... does it stay on if the door is closed? The world may never know.

So what Schrödinger proposed was a way of examining the effects of a quantum particle by potentially turning it into a killer of cats. The idea is that a cat may be placed in a solid container along with a device that measures atomic decay... radioactivity...from a small amount of some substance like plutonium, the original Heavy Metal. During the course of an hour, there is the possibility that the plutonium will decay and emit a particle, and the possibility that it will not. If the particle is emitted, a sensor will go off, triggering a small device that smashes a container of poison, killing the unfortunate feline. If the particle is not emitted, the cat lives to purr another day.

The question is, when does the state of the cat (alive or dead) stop being a potential reality and become actual reality? According to the Copenhagen Interpretation, it is at the point of observation. Since the effect of the particle not being emitted (or not-not emitted) is not knowable until it is observed, any effects of that possibility also exist in a state of quantum superposition. In other words, once the experiment begins the cat is both alive and dead until the box is opened. This is, of course, exactly what happens on Christmas morning. You think that the big paper-wrapped box contains the new PS5... but until you open it, it both does and doesn't, depending on the quantum pathways Santa navigates on his way to your house.

Ultimately, whether the cat is alive or dead doesn't matter (in a non-ethical sense – don't try this at home, kids), until the box is opened. Until then, it has no interaction with the outside world, and while you might say, “But the cat will know if it was alive or dead,” that may be... but cats are notorious for keeping their secrets from us mere mortals.

Whether or not the cat itself counts as its own observer, since we can't interact with it until the box is opened, is yet another unanswered aspect of the experiment.

Thinking about this question for a while has led to a number of hypotheses about reality, the nature of the uni-(or multi!) verse, statistics, luck, and cats. But while we wait for the scientists to figure this all out, I'd like to suggest another thought experiment of some relevance to our own institution of higher learning.

Online education has had something of a forced adolescence due to the virus I briefly mentioned above. It is experiencing growing pains. Its voice is cracking, and there's weird new hair everywhere. It's starting to ask questions that its parents are uncomfortable answering. It wants a car.

One of the more notable effects of its presence is that teachers and students are having to communicate, and relate to one another, in ways that are yet to become comfortably familiar. I sometimes find myself tired from sitting in a chair and talking for a couple of hours, even more than if I had been standing in front of a live class for the same amount of time, and doing even more physically demanding activities (moving around, drawing on a whiteboard, pointing to students' raised hands, etc.). One might think that teaching online is more relaxing, easier to conduct, but in my experience, it is not. And I think I know why.

Any good politician (and any number of bad ones) will tell you that there is such a thing as “feeding off the crowd.” When we see the body language, the gestures of acceptance, the smile of understanding, the gleam of intelligence in a few of the eyes... we react to that. Our brains release the feel-good chemicals because we know we are being effective. We can see, visually, that we're getting through, and we can see if we're going on too long about something so that we can change the subject or speed things up to keep the energy going. These are valuable skills to learn in any activity involving presentation, but once they are understood and practiced for a bit they can sustain the speaker for a while.

With online education, we're staring at a screen, typically of rectangles with names in them, because cameras and microphones are off. Now, there are lots and lots of advantages of online education... I am a major advocate of those advantages. But... it is different, and it takes some getting-used-to.

When students participate, especially in voice, but chat messages are often a pleasant enough alternative, some of that psychological energy flows through the room. A two-hour discussion-based class can seem to fly by. A Q&A session can be lively and entertaining. Even a theory-heavy lecture-style presentation can be enjoyable, and memorable if meaningful questions are asked and insightful comments are offered by students.

But when there is silence on the other end of the speakers... that's kind of a drag, in both the metaphorical and cognitive senses. It's bad enough when the teacher asks, "Are there any questions?" and doesn't get back either a yes OR a no (there's a superposition for you), but when a direct question is asked of the class, and nobody replies, or everyone is waiting for someone else to go first... or people aren't paying attention to their screens, or everyone is locked in a box without any external interactions to collapse their quantum waveforms into a detectable certainty... we begin to wonder if our students even exist in this reality at all.

And I get it... I have spoken about this from a teacher's perspective, but students have it harder as well. They aren't getting as much visual stimulation as they might when looking at a whiteboard filled with my questionable handwriting, amateurish diagrams, and arcane formulas. They aren't seeing the expression I make when I'm genuinely invested in getting them to understand why programming variables are called variables (it's because their values vary, you see). They don't see my gestures of relief when somebody gets the question right... and they know that however much they don't make eye contact with the screen, they still have the same chance of being called-upon as any of their classmates. Harrowing, I know.

But here is how we can help each other. Teachers can make things easier by using as many visual aids as possible, and making sure that their thoughts are reflected in their voices. They can check, as often as is reasonably possible, that everyone is still following along. They can encourage students to make their own notes, and devise ways to reward this, rather than just passively absorbing a presentation while YouTube is playing in another tab. Sometimes when I am presenting I will type key terms into the chat myself, saying, "This is an important word to know," so that they are looking at slides, hearing my voice, AND reading additional text. The more of their senses I can engage, the better.

And students – yes, you out there – you can try not to be cats.

Don't wait for someone to observe you externally to demonstrate that you're alive. Bring yourself to the particular party. Think about what is being presented, and then think about what you are thinking about what is being presented. Ask about applications of what you are learning... and if you aren't sure what potential applications might be, then that could be your first question. Talk about your own experiences with the material being covered if it is applicable, and consider what others' experiences might have been like if it isn't. In the hard sciences and math, try to see the pattern being presented, how foundational ideas are used to support higher ones, and be thankful that at the undergraduate level math still makes sense.

And ultimately, because this is already getting too long, commit to making the best of this situation, because it might last a while... but it gets better, and if you give just a quantum of effort, it can even get good.

Anthropology Day



Anthropology 101 Live Session

JOIN US MONDAY, FEBRUARY 15, 2021



Anthropology day is an annual event held on the third Thursday in February. It is an opportunity for anthropologists to celebrate their discipline and share it with the world. It is a worldwide event where different schools and universities can be creative and find different ways to enlighten others on the world of Anthropology.

Galen University has been engaging in this celebration through the Anthropology Club since its establishment. The Anthropology Club has hosted different outreaches throughout the years, such as going to Secondary and Tertiary schools to talk about the career opportunities and fields of studies in Anthropology.

Due to the pandemic, we had to find a new way to reach out to the public. This year we have planned to take Anthropology Day to a virtual platform.

The Anthropology Club will be hosting two different Facebook live discussions to share the different perspectives in Anthropology. The first live discussion will be on Monday, February 15, at 7 pm. In this live discussion, we will be introducing three Anthropology lecturers from Galen University.

The goal is to gain an understanding of how anthropology can help in Belize's society. The second live discussion will be introducing past graduates from the Anthropology program at Galen University. We will be exploring their achievements and plans after graduating with a degree in Anthropology.

Finally, members of the Anthropology Club will be appearing on the morning show, Open Your Eyes, on Friday, February 19. We will be discussing our experiences studying at Galen University and upcoming plans we have with the Galen University's Environmental Club.

- Jessica Perez, President

13th – 27th February 2021

Big Brainstorm



Calling on all young thinkers and activists interested in tackling the biggest challenges facing young people today.

The Big Brainstorm is a chance to explore ideas for a landmark report being prepared by the UN Secretary-General, which will make recommendations to “advance our common agenda to respond to current and future challenges.”

Big Kick-Off | 13th February

To kick off the Big Brainstorm, join us to explore how the international community can listen to and work with young people.

Big Pitch | 27th February

Your chance to present your ideas, with prizes for the most innovative and actionable ideas.

Spotlight Sessions | Throughout

Get involved in topics including climate change and education. Listen to talks from experts, participate in creative exercises, and see what Action Groups have been working on.

We'll be following an Open Space Principle – everyone is welcome to:

- ↪ **Form an Action Group.**
Gather your ideas and present them at the 'Big Pitch'.
- ↪ **Join someone leading a group.**
Share your ideas and help present at the 'Big Pitch'.
- ↪ **Join us for Spotlight Sessions or the Big Pitch.**
Share your opinions and vote for your favourite ideas.

You'll need a stable internet connection to watch sessions and interact with your Action Group. The main events of the week will be hosted in English. Action Groups can work in any language as long as one person can present ideas at the Big Pitch in English.

To register your interest [click here](#)



DIVERSITY AND INCLUSION FOR TOURISM RECOVERY IN A POST-COVID BELIZE

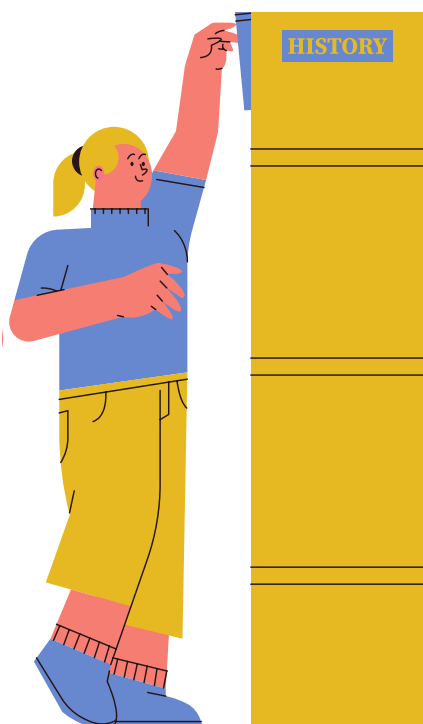
IMPLEMENTING STRATEGIES & OVERCOMING CHALLENGES!



FEBRUARY 23, 2021 • LIVE AT 1:00 PM (BELIZE)
HERITAGE EDUCATION NETWORK BELIZE



Important Dates:



- **February 20th-** Withdrawal period ends. Last day to withdraw from a class with a 'W' (withdrew) with **financial penalty**.
- **February 22nd-** Withdrawal period with a 'WP/WF' (withdrew passing/ withdrew failing) begins. **Financial penalty**
- **February 22nd-** Class schedule for 2020-3 Summer semester posted on Student Gateway (**view only**)



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