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REPORTS FROM THE FIELD



SCIENCE FOR MONKS

Science for Nuns:
Findings and Observations on a Nuns Workshop

Kathmandu, 2018

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Reports From the Field:

Inverness Research supports the Science For Monks program through a process of “groundtruthing” where we help the program articulate its theory and intentions, and then make site visits to the field to check the congruence of theory and field realities. This report is part of a series of Reports From the Field where we ask senior researchers to write about their site visits sharing what they learn from their in-depth interviews, observations and discussions with monks and faculty. The reports are intended to maintain an informal tone and reflect the researcher’s impressions as well as the data they have gathered.

Background on this report

This report shares the findings and observations that Kapil Bisht, a freelance writer based in Kathmandu. Kapil attended the first ever Science for Nuns workshop in Nepal, which was held from July 29 through August 2, 2018 at the Khachoe Ghakyil Ling Nunnery in Kathmandu, Nepal. Two scientists from the U.S. taught the workshop. This report presents major findings from the nuns’ experiences of studying science for the first time and their opinions on a possible partnership between science and Buddhism, and how this collaboration could benefit them, Buddhism and society.

Background on the Science for Nuns Workshop

This workshop was the first ever Science for Nuns workshop to be held in Nepal. It took place from July 29 through August 2, 2018 at the Khachoe Ghakyil Ling Nunnery in Kathmandu, Nepal. Fifty-eight nuns, all residents of the host nunnery, participated in the five-day program. The workshop was led by David Presti, with Bryce Johnson as an adjunct teacher. Sonam, a monk from the Drepung Monastery in India, translated the teachers’ lectures into Tibetan. Kristi Panik, a psychiatrist, conducted a couple of sessions where she answered questions from the nuns on mental health issues.

The program is a platform for nuns to learn science and lay the groundwork for a deeper exchange between science and Buddhist philosophy. Nuns have long been on the sidelines of the Buddhist tradition when compared to monks. This workshop redressed the balance in a way by giving nuns the opportunity to learn science, something that monks have had the privilege to do for well over a decade in India through Science for Monks as well as other programs that are active in India.

Major Findings

1: Most nuns were drawn to science after years of hearing His Holiness the Dalai Lama stress the need for Buddhists to learn science. They also saw science as a vast resource to help them help others.

On a practical level, learning science was important to the nuns because it was one of the tests on their upcoming geshe-ma exams. However, the nuns saw the bigger picture too. The knowledge from science would last them a lifetime and prove handy in situations ranging from teaching Buddhism to helping a sick person. The nuns saw reflections of Buddhist tenets in science's investigative approach. Since most nuns had never had a formal education, they were clueless about science. That combined with His Holiness the Dalai Lama's tireless calls for Buddhism and science to work together had roused their curiosity about science. They came to the workshop because they finally saw a chance to acquaint themselves with a discipline held so highly by His Holiness.

The nuns who attended the workshop were all at the senior most level at the nunnery. Many of them had been a nun for over two decades. Almost all the nuns had led monastic lives for over 15 years. Most nuns cited the geshe-ma exam as a major reason for participating in the workshop. (The geshe-ma exam, which is held annually in India, has a science paper in addition to the usual Buddhist philosophy and other tests).

However, the exam was not the sole reason for joining the workshop. The nuns cited many other long-term benefits of learning science, such as gaining knowledge about the brain, one's own body and how it works, the environment, about plants and other life forms. The nuns saw science as an opportunity to learn more. They saw similarities in science's investigative approach and Buddhism's pursuit of reality.

“Science arrives at the truth by thorough checking and investigations. Buddhism does that too. Of course, there are also differences between the two. But if we know the two disciplines well, we can draw from the two and become clear in our understanding. Then we will be better able to teach Buddhism to others.”

“I like investigating things. Science involves investigation and examination, so it offers what I am drawn to. Besides, the Buddha had advised that people should examine his teachings and, only if they stand to reason, adopt it.”

“Science is not about blind faith. It deals with the ‘how’ and ‘why’ of things. It asks questions and pursues answers. The destination is the truth, so it's a good thing to learn.”

“Like His Holiness the Dalai Lama says, The aim of both Buddhism and science is the same; only their paths differ. The destination is the same. Both disciplines experiment. Ultimately, they want to find reality, to tell illusions from truth. Experimentation is the way to get there. Buddhists carry out experiments in their minds; scientists experiment in the outer world.”

“I think experimentation is the major similarity between science and Buddhism. Scientists experiment about everything. Buddhist philosophy also calls for experiments on all ideas. For example, the concept of impermanence.”

“I think Buddhism and science are very similar. Buddhism says don’t believe something without experimenting, without knowing, studying and experiencing it. If it’s true, then believe it. Science is the same. Scientists work on and experiment on things sometimes for over a hundred years. They don’t just say things are like this and that; they say things because they have found reasons to support it. The Buddha was a scientist. He experimented and thought about everything. That is how he learned. Only then did he teach others. And only after they had tested and tried his teachings were they written down into scriptures. When we were children we believed that the sun and moon are gods. Now we know that people have been to the moon. We have photos of that on the Internet. Without that technology we would never know what the moon actually looks like. Science has helped us to see the truth.”

Curiosity about science was another big motivating factor. The majority of the nuns had never had any formal education, so the workshop was an opportunity to know what science was all about. They also wanted to know how science and Buddhism differed. All the nuns knew about His Holiness the Dalai Lama’s championing for the need for Buddhism and science to hold dialogues. They had wondered why His Holiness was so passionate about science. That was something they wanted to figure out.

“After a while you begin to wonder why His Holiness stresses so much on science. I wanted to find out the reason behind his insistence on all monks and nuns learning science.”

“His Holiness repeatedly talks about the importance of learning science, so I became curious about what science really is.”

“His Holiness always urges monks and nuns to study science. I had heard about science workshops in south India for monks and nuns and wished that we would get such opportunities as well. I have thought about studying science a lot.”

“My main reason for being interested in this workshop is His Holiness. He has held discussions with scientists for over thirty years. He always tells us during teachings that we need to learn science, that we need to combine science and Buddhist philosophy. That is the way.”

“The most important reason for my studying science is His Holiness the Dalai Lama. He always asks us to study science because it’s similar to Buddhist philosophy. His Holiness always gives the example of the Buddha. He says that the Buddha was the most powerful scientist. The Buddha experimented all the time.”

“We all follow His Holiness’ teachings. He always encourages us to study science and to work with science in order to make Buddhism more practical. He says Buddhism and science can benefit each other.”

For some nuns, the dissimilarities between Buddhism and science were an attraction too. Their religious training had taught them the mind’s pre-eminence whereas science focused on the brain. This piqued their interests. It was a commonly held opinion amongst the nuns that a combination of Buddhist philosophy and science would enable them to teach Buddhism more effectively.



“Science has the power to create wonderful things, as is evident everywhere today. But it can also be used to make things that harm others, for example, bombs. So if we study science we can better understand scientists and perhaps offer something that we as nuns have learned. We can have a dialogue with scientists, and science will be the bridge.”

“I wanted to know science’s perspective on things and how it differed from what Buddhism says.”

“Everyone nowadays seems to be interested in science, so I was curious to know the difference between science and Buddhist philosophy.”

“Investigation is part of both science as well as Buddhism, but I wanted to know more about the differences between the two.”

2: The nuns identified similarities between several Buddhist concepts and scientific facts. On many things the only difference between the two was one of terminology; the principle is the same.

The words ‘atom’ and ‘molecule,’ although foreign to the nuns before the workshop, struck a chord with the nuns because there are identical concepts expounded in Buddhist texts. The nuns found that another idea on which science and Buddhism agree was the mental process that creates experiences. When experiments in class proved that colors do not exist “out there” but rather occur because of the interplay between photons and the cells in the eyes, the nuns saw in this fact the Buddhist notion of the mind as the creator of perspective.

Most nuns identified atoms and molecules as being concepts that are explained in Buddhist philosophy. Like in science, Buddhist texts talk about small units (atoms and molecules) that unite to form larger units.

“Both Buddhism and science believe that atoms make up objects.”

“Science says that a color is not out there, meaning that the brain constructs it. Buddhism states the same thing.”

“Science says that it’s the brain that helps us perceive things. Buddhism traces our ability to make sense of the world to our mind. But I think both agree that perception depends a lot on mental processes rather than mere physical existence.”

“Atoms join to make molecules and molecules combine to create cells. This idea is same in Buddhism and science.”

Lessons on sight were the most popular with the nuns. They seemed to have a child’s wonder and excitement when they talked about the light demonstration that Bryce put on in the evening. Excitement aside, the nuns saw in scientific explanations on light familiar Buddhist views. Like science, which states that single colors are in fact the result of interplay between various other colors, Buddhism expounds the theory of interdependence. Nothing exists – can exist – on its own.

“Science and Buddhism agree that small particles join to form larger units. Also, the scientific notion of nothing being out there, for example, a color is similar to the Buddhist concept of emptiness.”

“Buddhism talks about interdependence, which means that a combination of elements makes up an object. Science says the same thing: two colors combine to form a new color; atoms and molecules merge to create a cell.”

3: The nuns also identified disparities between Buddhism and science. Science emphasizes on the brain as the hub of decision-making and perceptions whereas Buddhism credits the mind as the force that guides all our actions. Science and Buddhism also diverge in their views on the senses.

When asked about differences between science and Buddhism, the nuns invariably pointed out that science traces all life functions to the brain whereas Buddhism sees the mind as the ultimate driving force behind life events. Steeped in a tradition that traces life events to a chain of actions (karma) that go back several lifetimes, they were both surprised and confounded by science's insistence on the brain as the command center for all physical and mental activities. However, the nuns had an amazingly open mind to these new concepts, never dismissing them or labeling them as incorrect. They expressed genuine interest in these ideas which, to a Buddhist practitioner, must have been hard to grasp.

Buddhism believes in the sensory organs' ability to perceive on their own. For example, the tongue has a consciousness or ability to taste: it can decide on its own what a particular taste is. Science maintains that the experience of taste is connected to the interaction between molecules and receptor cells on the tongue and subsequent brain processes. Other differences pointed out by the nuns included Buddhism's belief in karma, afterlife and the soul. They were also perplexed at science referring to a brainless organism (sponge) as a living being. In the Buddhist view, they reasoned, a creature without a brain or consciousness is dead.

“Science traces everything to the brain while Buddhism believes in the mind, consciousness and soul.”

“Science says that the brain controls everything. Our belief is that the mind controls everything.”

“According to science, what we sense depends entirely on the brain. This is the same as what Buddhism says. However, in Buddhism it's the mind that controls everything.”

“Buddhism is all about how consciousness perceives things. Science is all about how the brain processes things.”

“We Buddhists believe in past lives, cause and effect (karma), reincarnation. I don't think scientists believe in these.”

“Buddhism believes in karma, fate and soul, whereas science says that all actions happen because of the brain. So it's like denying the concepts of karma, fate and soul.”

“Scientists say that a person is intelligent because of his brain. Buddhists say that it's because of his past life's imprint.”

“Buddhists believe in natural wisdom—the wisdom one is born with. But scientists believe all wisdom is learned.”

“Buddhism believes in past lives. Science doesn’t. It hasn’t found evidence for it yet. Buddhists strongly believe that our previous lives create a deep imprint on our future lives. According to this view, an exceptionally intelligent child is like that because of her past life. Her intelligence is an imprint from her previous life.”

“According to Buddhism, the tongue has a consciousness for taste, whereas science states that we can taste because of molecules and what those molecules trigger in our brains.”

4: The nuns are fully aware of science’s contribution and importance to human life. They believe there is an immense potential to do good if science and Buddhist philosophy combine.

The nuns referred again and again to how His Holiness the Dalai Lama takes every opportunity he gets to encourage monks and nuns to study science. This rhetoric seemed like a case of parroting a revered figure, but it gradually became clear that the nuns were fully aware of science’s standing in the modern world. They didn’t know science but they knew it could do immense good. It was this potential that they wanted to tap and combine with their Buddhist training. And they wanted to do it to succor those in need. It was the science they learned in the workshop that helped them move one step closer to applying that noble idea of helping others with a combination of Buddhist training and scientific knowledge. Without downplaying the role of religion and their own rigorous training, the nuns believed that they had acquired something practical and relevant to the time by learning science. Learning science, to their altruistic minds, was acquiring a new set of skills for serving others.

Even the older nuns in the group, who I assumed would not be as open to new ideas as the younger ones, were aware of the benefits of science. As the workshop progressed, their understanding of science grew. The vague idea of science as something beneficial gradually took a coherent shape. They began to see opportunities in science. Their ideas expressed an overarching goal to help people who were suffering.

“Buddhism can teach us to save the environment; science can save lives.”

“I work in the nunnery’s clinic, so learning science will be useful.”

“Nuns can be nurses in hospitals. Two nuns from our monastery now work in a hospital.”

“Science is concrete, Buddhist philosophy is abstract. Science and philosophy can unite to present a crystal clear picture, like a mirror. Things would become clearer with the combination of these two.”

Out of the nuns who were Nepali, the largest proportion came from remote villages in Tsum Valley, a mountainous area near Nepal’s northern border with Tibet. There are no roads to Tsum. Basic amenities like medicine are scarce. Tibetans made up the second-largest proportion of the group. The Tibetan nuns came from similarly far-flung areas in Tibet. Although some of these nuns hadn’t been home for over a decade, they remembered clearly

the plight of their villages. They believed having even the most rudimentary knowledge of science would allow them to teach people about health and hygiene for example, as opposed to just bestowing benedictions or performing religious rituals for them. And it made sense to learn about one's body: even learned nuns have headaches.

“In remote villages, knowledge of basic science can help us educate people about their health. They can be taught to take better care of their bodies.”

“In remote villages, where most inhabitants know nothing about science, a nun who knows the anatomy of the ear and how it works can teach the people about it. That way those people can learn how to take proper care of their ears. That is as good as a philosophical teaching.”

“A nun with scientific knowledge can help people get rid of superstitions. For example, when superstitious people have some pain they think it's because of a malevolent spirit. A nun who knows science can try and figure out the scientific reason for the pain.”

“In my village in Tibet the Chinese distributed packaged food that was way past its expiration date. No one there knew how to read or had any idea that food like that could be harmful. If a nun with scientific knowledge was there she could warn the people about the bad food.”

The nuns saw science as an instrument for altruism, with Buddhism as an inner compass to guide people toward doing more for others. Many nuns saw that scientific knowledge would allow them to implement their fundamental belief of serving others. The nuns also acknowledged science's standing in society today: more children know about science than about Buddhism. There was an idea that knowing science would help find common ground to engage with non-Buddhists.

“Buddhism is profound and one needs a deep understanding of it to grasp what it is saying. If we know science we can use it as a bridge to communicate with non-Buddhists, and it's always better to know about your own body.”

“It's always an advantage to have knowledge of science. We nuns can use it to compare or to draw parallels when we teach Buddhism to others.”

“There are more people, definitely those who've been to school, who understand science better compared to Buddhism. So it's easier to explain to them about Buddhism.”

“If we explain Buddhist teachings with scientific evidence, it becomes easier for non-Buddhists to understand how to help others, live peaceful, happy lives, how to protect the environment and society.”

“This is the 21st century. If we want to help people and society, we need to take ideas from science and Buddhist teachings and merge them to form explanations. This will be more beneficial to others. That is why it’s very important for nuns to learn science.”

5: Learning by doing was a fresh change from the lessons the nuns had been used to, where teachers talked and students listened. Moreover, the hands-on nature of the lessons not only appealed greatly to the nuns but they also saw in them the Buddhist approach of learning by experimenting.

The nuns thoroughly enjoyed the experiential method of teaching. Before the workshop, the nuns’ experience of learning was entirely didactic. Interest levels were high throughout the workshop. One reason for this was the novelty of the ideas being taught, like the anatomy of the brain. The telling factor, however, was the teaching style. Through activities and experiments the teachers introduced the nuns to a different, more engaging, way of learning. The nuns relished the activities and experiments they did in class. In this way, complex ideas became easier to grasp.

The nuns thoroughly enjoyed the workshop for its hands-on approach. Without exception, they told me how there was never a dull moment in the five days spent in the classroom. Popping candies into their mouths to experiment about taste, gazing at colored paper and then seeing after-images on white sheets of paper, the demonstration on different colored light that was given in a pitch dark room, optical illusions, striking spoons on their desks and hearing a sound akin to a bell tolling—these were some of the highlights for the nuns.

“The hands-on, activity-based workshops leave a deep imprint on our minds.”

“Time flies in the classroom!”

“The teachers didn’t just talk. They allowed us to experiment and try things for ourselves. That made learning easier and fun.”

“The way of teaching is very interesting. They talk but they also make us work. We grasp ideas very quickly because of this way of teaching.”



“How the brain works is fascinating!”

“My favorite lesson was the first day, when we learned about the brain.”

“The lesson on the brain was interesting. Learning about cells was also interesting, how one cell passes message to another. Atoms were completely foreign to me.”

“My favorite lesson was the one where we did the experiments on taste and the one where they explained how rainbows form.”

“We knew that ears help us to hear and the eyes help us to see. But we didn’t know the process that allows us to hear and see. Learning about that was interesting.”

“The combination of lectures and activities is very effective.”

“Learning about sound vibrations was revelatory!”

“The experiments we did in class have roused in us an investigative approach to learning. We got into the habit of examining. Whenever you examine you get a result. It might not be correct, but it will be something. It will be better than guessing. It will at least diminish doubts.”

The nuns’ enthusiasm for science was evident even when the classes were not in session. Many nuns spent their tea breaks copying notes from the board or refining the diagrams they’d drawn, as though they were making intricate sand *mandalas*. It was a common sight to see the teachers sitting at tables during the breaks, surrounded by inquisitive nuns who asked one question after another. Several times, the deluge of questions left the teachers with no choice but to stop and continue the question-answer sessions the next day. Many nuns told me that they stayed up late into the evening studying and rewriting the notes they had taken in class.

As much as the nuns were amazed by scientific explanations, they were intrigued by the teacher's admissions that science doesn't have answers to everything.



6: The majority of the nuns predicted that a combined workshop for monks and nuns would prove ineffective. They reasoned that nuns would be too shy to speak in a class in which monks were present.

Except a handful of nuns, most believed that a workshop with both nuns and monks would prove ineffective as nuns would not be as forthright and expressive in the midst of monks. Questions would remain unasked, they said, defeating the purpose of the workshop. The nuns had little doubt about the richness of the ideas that would arise from debates and collaborations between nuns and monks, but they felt the two groups would need to spend more time in order to overcome their shyness. That kind of openness couldn't come in a matter of days.

Some nuns were of the opinion that the days of the demure, diffident nuns had long passed; nuns are not shy like before and they would participate actively in workshops with monks. One nun said that the presence of monks would make the atmosphere more serious. As a result, the nuns would be more focused and less likely to joke and chat in class as much as they do when they are in a class with only nuns. Those in favor of having lessons with monks were invariably the younger nuns, with the older ones tending to stick to the stereotype of shy nuns. Some nuns thought longer workshops would eliminate this problem, but the majority felt that a couple of days weren't enough to allow the nuns to cast off their demureness. The overriding opinion was that nuns-only workshops would be more productive.

7: The nuns were unfazed despite being in a science class for the first time in their lives. They proved eager and enthusiastic learners, participating actively in class and surprising faculty and observer alike with their forthrightness and the depth and quality of their questions.

The common assumption coming into the workshop was that the nuns would be shy. The faculty and I couldn't have been more wrong. Within the first hour of the workshop nuns were asking one question after another. Although most questions were the kind one would expect of people who were in their first science class ever, there were some impressive queries. David Presti, who led the workshop, remarked, "I'm amazed at the questions that they ask in class. I doubt if students at our university would ask questions this complex and deep." Bryce wasn't surprised at the quality of the questions, but he was surprised at the nuns' forthrightness.

A sample of questions asked by the nuns in class:

What is the connection between the mind and the brain?

You told us today that the brain is what helps us to have consciousness. If that is so, how can an organism that doesn't have a brain [sponge] be called an animal?

What is the difference between a man's brain and a woman's brain?

Is there any connection between the brain of a mother and the brain of her child?

As a neuroscientist, what would you recommend an unhappy person to do to become happy?

How is it that a chicken can still move after its head has been chopped off?

When anger arises in us, does it impair the brain's functioning?

Why do our minds tire after looking at something for some time?

What creates sweet taste?

If sunlight has all the colors there are, then why don't we see every color when white light is shined onto a surface?

If we close our ears very tightly, vibrations cannot enter it. But we can still hear sounds. How does this happen?

8: Learning science for most of the nuns was a way to acquire knowledge and skills that would enable them to help others. In addition, they would have something in common with the younger, educated generation, who are more familiar with and have more faith in science than Buddhism.

The nuns were aware that although the objective reasoning that Buddhism teaches is a wonderful thing to know and share, it is not a cure-all. Real life demands practical solutions, not

just adherence to a philosophical outlook. They admitted that there are situations where science is far more useful than Buddhism.

“Let’s imagine a person who has a severe headache or someone who is depressed. Treating his sickness or alleviating his depression is the best thing you can do for him. To do that you need to have some basic scientific knowledge. It might not be enough to cure them, but it can be sufficient to guide them to someone who can.”

“A Buddhist monk or nun cannot perform an eye operation. But we can at least point people to a doctor if we know about the eyes.”

“Philosophy won’t help a relative who’s in the hospital. If we know a little bit about the body and health, we can at least know if they are getting proper treatment.”

“We often encounter people who are not well, so if we know how the brain and body works, we can help people who are in pain or have a problem.”

“A nun who knows science is better equipped to help others overcome their problems, be it physical or mental problems.”

“Simply put, knowing science makes life easier.”

“Through science we can learn to take better care of ourselves. For example, we can know what is making us ill.”

The nuns also saw learning science as a way to making themselves relevant to the wider world. When interacting with non-Buddhists, scientific knowledge would serve as a connector. Faith without reason wouldn’t appeal to people in today’s world, the nuns said. They felt learning science would enrich their knowledge and give them more to draw from when doing their duties as a nun.

“Nuns learning science will be very beneficial. There is so much to learn from science. And one person who knows science can help spread that knowledge to many others.”

“Science is concrete, Buddhist philosophy is abstract. Science and philosophy can unite to present a crystal clear picture, like a mirror. Things would become clearer with the combination of these two.”

“Science is about observing the outer world; Buddhism is about contemplating the inner world. If the two unite, they will produce something new, like the coming together of two hands to produce a clap.”

“More children today know about science than they do about Buddhism. So science can be the medium for us to communicate with them. Knowing science will make it easier for us to teach them about Buddhism.”

“If we learn science we can know the benefits of planting flowers and trees. Then we can pass on that knowledge to others. In India they have planted so many trees and

created beautiful places. Here in Kathmandu they cut the few trees that we have. As a result it's so dusty. People get sick because of the dust."

The scientific approach was yet another aspect to adopt. Science is about understanding phenomena and finding answers to the 'how' and 'why' of issues. By studying science, the nuns hoped, this investigative approach would become a habit with them, something that would enhance their problem-solving skills. The ability to help others and to be better at it was the end goal of the nuns. It was a commonly held belief amongst the nuns that science would help them reach that goal.

"We're in the 21st century. We need to be able to offer things in a way that people can absorb. There needs to be proper reasoning in what you say. So if we learn science we can have a sound and rounded knowledge to draw from when explaining things to other."

"Science attempts to find answers to the 'why' and 'how' of issues. Anyone who studies science internalizes this process. Locating the source of things becomes a habit. So nuns who have studied science can see if there is a solution where the source of a problem is."

"Science inculcates the habit of seeking evidence and experimenting, so we can know for ourselves what is wrong and right, harmful and beneficial. Besides, not everyone takes things for granted, so we will need to prove to them scientifically that something is true."

9: All the nuns interviewed expressed a strong interest in studying science in the future. They hoped that there would be longer workshops.

"I am going to collect science textbooks that the younger nuns at our nunnery study in their science classes and spend my month-long winter break studying them."

"Most of the nuns attending this workshop are seniors. We might spend our free time learning science together. We are too old to join the formal science classes that are taught at this nunnery, so we will use the Internet to learn."

"After the workshop I'm going to read different science books. When I was a child we didn't have science as a subject at this nunnery, so I never got to learn."

"I will look on the Internet to learn more science."

"I really want to attend longer science workshops – fifteen days or more – in the future."

"Until now, science was a huge door that was closed to me. This workshop has opened that door slightly. Now I want to know more."



10: With the help of science the nuns hoped to extend their contributions beyond monastic settings.

The nuns felt science could help them transcend their roles in society, which has traditionally been limited to performing religious rituals. After learning science they could teach simple yet important ideas like caring for the environment. Some hoped to train as nurses and serve in community health posts in distant villages. For others scientific evidence would become a means to helping people make right choices.

“Most of us come from very remote villages. Take my village for example. People there are devout Buddhists but they don’t know science. Superstition is rife. Illnesses are often blamed on malevolent spirits. If I know science I can at least convince a sick person in the village to take a tablet and not expect rituals to cure him.”

“Teaching Buddhist monks and nuns science has the added benefit of eventually helping them to help others. Our practice teaches us to be altruistic. If we learn science our minds will be further sharpened. As a result, we will be better able to help people in need.”

“By working together Buddhism and science can make more powerful impacts. For example, the Buddhist teachings forbid destroying plants. On the other hand, they also say that plants are not alive. The teachings can’t explain why we shouldn’t damage plants. Science tells us that plants have cells and if you cut plants some cells die. This explanation bolsters the Buddhist teachings about caring for plants.”

Conclusion

You only needed to sit in class with the nuns to know that they were enraptured by what they were hearing. The nuns listened intently and took notes furiously. They drew beautiful, detailed diagrams of nerve cells, the brain and the eye. They were like explorers who had stumbled into uncharted territory—thrilled by what they had just learned and hungry to know more. Their curiosity was delightful. You marveled at their questions. It was deeply moving to hear them ask a question about science with the aim of finding a solution for someone’s suffering. There was little doubt that the nuns had benefited from learning science. Neither was there any doubt in my mind after observing the workshop and interviewing the nuns that science and Buddhism could do immense good together.

It was also evident during my interviews with the nuns that science was beginning to take on a more concrete form for them instead of being that great unknown that they only understood as something that His Holiness extolled. Within a day or two they’d realized that science had the potential to make their practice more effective. Several nuns saw learning science as a step toward putting their decades-long training in altruism into practice. Excited as they were in the possibilities that learning science would bring, they didn’t romanticize its impact. They had general ideas for helping – a nun who knows science might be able to explain to villagers why it’s important to save trees – but they knew they had a long way to go. However, there was no doubt in their minds about the importance of learning science. To use the metaphor of the wheel that Buddhists so often cite, the nuns had nudged something valuable into motion by attending the science workshop. It was a small step, but it was one in the right direction.

“Right action comes from understanding the truth. Science gets us to examine and investigate the truth.”

Appendix 1: Questions from the Nuns

On the first day of the workshop the teachers handed the nuns a sheet of paper each and asked them to write questions that they would like to ask on it. Perusing through the nuns' questions, I found three recurrent themes:

1. **Brain versus Mind/Consciousness:** The difference between brain and mind/consciousness was something the majority of the nuns wanted to know.

“I want to know how the brain and mind are connected with each other. If the two are not connected, then how come ideas originate in the brain?”

“I want to know how our brain works and why it is important for us. Also, how to use our brains to get new ideas?”

“Science says that all happy moments and unhappy moments can be traced back to happenings in the brain; philosophy holds that karma brings happiness or sadness. How do you explain this difference?”

2. **Brain and Emotions:** Many nuns wanted to learn science so that they could gain a better insight into problems such as depression, mood swings, anger, fear and heartache.

“What is neuroscience’s explanation for the relationship between unhappiness and the state of the brain of that unhappy person?”

“When we are afraid, how does it register in our brain?”

“Is unhappiness a manifestation of some problem in the brain?”

3. **Man’s Brain versus Woman’s Brain:** This was another question that came up again and again. Although none of the nuns mentioned it specifically, they seemed to be asking if differences in the brains of men and women meant difference in intelligence.

“Is there a difference in the way that thoughts arise in the brains of men and women? Is a man’s brain different from a woman’s brain?”

Appendix 2: Recommendations

1. Teaching science that can be put to daily use.

The nuns had a strong desire to put the science they learned and would learn in the future to use. They wanted to contribute to society, especially ones in distant, marginalized areas. It would be useful if workshops in the future included either separate lessons or a couple of sessions on things like first-aid, women's hygiene and other simple health-related lessons.

2. Having rest days.

Even though the nuns were excused from their monastic duties while the workshop was in session, they were not exempted from activities that happened before and after class. They had to arise at four for morning prayers, which began at five and went on till breakfast time (7:30). On some evenings, the nuns told me, it was already eleven by the time they finished their daily duties and went to bed. The addition of the workshop made for long, exacting days. Many nuns expressed that they would have preferred to have a rest day in the workshop. A break from the lessons would provide much needed rest for the body and an opportunity for them to contemplate on the newly learned knowledge. They wanted more time for what they had learned to sink in. They organizers of the workshop might consider having a rest day even in workshops as short as this one.

3. More workshops in the future.

Everyone at the Nunnery, from the headmaster Geshe Tashi to the nuns who attended the workshop to nuns who couldn't attend this year, was very interested in having another Science for Nuns workshop at their nunnery. Geshe Tashi was always hovering around the classroom, ready to provide what was needed. Without his flexibility, openness to ideas, and hospitality the workshop wouldn't have been the same. In his nunnery the Science for Nuns project has a congenial environment to hold workshops in the future.

4. Interesting areas to explore in future interviews.

The desire to serve their communities was common among the nuns, especially those who came from politically or geographically marginalized communities. It would be interesting to ask questions to learn more about the nuns' backgrounds.

5. Feedback from the nuns at the end of workshops.

On the first day of the workshop the faculty asked the nuns to write a question that they would most like to get answered and submit it. Reading their questions offered useful insights into what they thought and expected of science. A similar exercise at the end of the workshop by asking them to give feedback on the workshop would prove helpful in improving the workshops.

Appendix 3: Interview Questionnaire

- 1) Where are you from?
- 2) Did you start your monastic life at this nunnery or have you lived in another nunnery before coming here?
- 3) Which is your favorite subject from the ones taught at the nunnery?
- 4) Why did you sign up for this science course?
- 5) What do you think about learning science?
- 6) What do others in the nunnery think of the idea of studying science?
- 7) What issues in science resonate most with Buddhism?
- 8) Do science and Buddhism agree?
- 9) Are there are conflicts between science and Buddhism?
- 10) What do you think so far about studying science?
- 11) What is most interesting?
- 12) What is least interesting?
- 13) What are your hopes for young women?
- 14) Is having a combined workshop for nuns and monks a good idea? Why/Why not?
- 15) What do you think is the role of nuns in Nepal today?
- 16) Will you continue to study and learn more science?