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# Ti Similla

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Program for Indigenous Culture (PIC)

## Indigenous Peoples in the UP Baguio Curriculum

*All three Colleges carve out UP Baguio's  
niche in Cordillera studies*

■ By Wilfredo Alangui

*Candy Pangilinan (2009): Tao po ako. Hindi po ako Igorot.*

*Lucy Torres-Gomez (1999): Ang pangit mo naman, Igorot siguro parents mo.*

*Jun Labo (1988): The Igorots are traitors. They are civil in front of you, but once you turn your back they stab you.*

*Carlos P. Romulo (1943): The Igorot is not Filipino.*

Four unfortunate remarks spanning 69 years. The first, from a UP graduate, is an attack on Igorot's humanity that betrays ignorance; the second, from a socialite and now a member of the House of Congress, is a judgment on Igorot's physical appearance that betrays a shallow concept of beauty; the third, from a former Baguio City mayor, is a sweeping indictment of Igorot character that betrays deep-seated bigotry; and the fourth, from a Filipino stalwart and statesman, is an arrogant pronouncement on Igorot identity. To be fair, these personalities eventually retracted or explained their statements, and apologized in public in response to widespread condemnation from the Igorots and from other sectors of Philippine society. For Labo, he has since suffered a backlash, never to recover from political oblivion.

Between Romulo and Pangilinan are a host of documented and undocumented biased perceptions, attitudes, stereotypes and discriminatory actions that show how the Igorot is regarded by the majority culture. Marky Cielo's proud declaration of his Igorot lineage on national TV inspired a community of Igorot bloggers from all over the country, and from abroad. These bloggers wrote about their personal experiences and encounters with people who showed ethnic prejudice towards them, and



how they boldly asserted their Igorotness by rebuking those who have made hurtful and thoughtless comments and actions.

If anything, this continuing prejudice reflects a serious lack of understanding and knowledge about the Igorot and other indigenous peoples in the country, also because both the Philippine educational system and the media have not exactly helped correct the situation. In many instances, these institutions have perpetuated the prejudice.

In the wake of Pangilinan's gaffe, a non-Igorot UP alumna remarked: "Kulang pa rin ang edukasyong nakukuha ng mga tao sa UP." Indeed, within the University of the Philippines System, one wonders how many Pangilinans among the faculty, students and staff may still be harboring misconceptions about indigenous peoples.

The Program for Indigenous Cultures was reconfigured last year to help promote greater understanding among and between the indigenous and non-indigenous members of UP Baguio. In a brainstorming workshop on 5 December 2009, the PIC was tasked to study how IP can be incorporated in the curriculum. The workshop was attended by indigenous students and alumni, USC and OUTCROP representatives, members of the PIC committee namely College of Science Dean Wilfredo Alangui, Prof. Grace Subido, Prof. Leah Abayao and Prof. Arvin Villalon, faculty members Prof. June Prill-Brett, Prof. Ruth Tindaan, Prof. Jimmy Fong, Mr. Scott Saboy, including College of Social Sciences Dean Raymundo Rovillos, and Chancellor Priscilla Macansantos.

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Responding to the task, the PIC did a survey in February 2010 to find out how the Colleges are incorporating IP topics in their different curricular programs. The initial results are heartening. The survey showed that before leaving the university, UP Baguio students have gotten the opportunity to learn more about indigenous peoples from the various courses offered by the three Colleges here at UP Baguio: College of Arts and Communication, College of Science, and the College of Social Sciences.

The survey asked the departments to identify course offerings that incorporate IP topics and to briefly describe how the topics are treated in the courses. While the number of courses already tackling IP topics is admirable, the departments have also identified more courses that may still enrich their respective syllabi with the inclusion of themes pertaining to IP.

This is good news for many of us who believe that one of the best and strategic ways to educate and transform views about indigenous peoples is to incorporate their histories, traditions, knowledges, philosophies and worldviews in the curriculum. One hopes that discussions in class would instill in students greater appreciation for diversity so that they leave the university with a better un-

derstanding and respect for all cultures.

What follows is a sample of the IP topics that are discussed in various UP Baguio courses across Colleges.

### College of Arts and Communication

IP literature, particularly Cordillera, is tackled in several BA and MA Language and Literature courses like BLL 136 (Panitikang Bayan), 137 (Panitikang Pambata), and 139 (Panitikan ng Kordilyera), ML 230 (Cultural Criticism) and 231 (Literature in the Oral Tradition). Elements of grammar of Cordillera languages are discussed in BLL 115 (Development at Istruktura ng Wikang Filipino) and 120 (Kasaysayan ng Panitikan ng Pilipinas). The “rich cultural traditions” of the Cordillera peoples become inspiration to fine arts students in courses covering Philippine Traditional Art Forms, Sculpture, Painting, Visual Design and Photography. Faculty of the Department of Communication ask their majors to report on indigenous issues, which also become topics for writing and research. Identity politics and media representation of IPs become thesis topics for Comm 200 (Thesis) students. Communication concepts in indigenous communities are tackled in Comm 140, a course on communication theory.

CAC reports that students taking their various RGEF courses are asked to read materials on culture and traditions of indigenous peoples, especially in the Cordillera.

### College of Science

Biology students get to learn indigenous perspectives and practices as discussed in courses like evolution (in the context of sexual selection), while the rich biodiversity in the region becomes a living laboratory for students of ecology, taxonomy, terrestrial ecology, and those studying mosses, hepatics and ferns. Cordillera flora and fauna have also become thesis topics for Bio 200 (Undergraduate Thesis) students.

Elements of Cordillera culture become

useful examples in highlighting concepts in several RGEF courses. The chemistry of rice wine making, the mathematics found in weaving patterns, and indigenous technology are discussed in Chem 1 (Chemistry: A Practical Approach), Math 1 (Mathematics in Life) and STS respectively. Meanwhile, the Human Kinetics Program hopes to incorporate indigenous dances and appropriate indigenous games in some of their PE 2 courses.

### College of Social Sciences

Not surprisingly, the CSS has the most diverse coverage of IP-related topics that are tackled in their various course offerings. In the Department of Sociology, Anthropology and Psychology (DSAP), indigenous concepts and views find their way in courses that tackle peace and conflict management, psychotherapy, social psychology and perspectives on personality, marriages and families, race and ethnicity, while case studies on indigenous communities are discussed in Soc An 104 (Rural Communities in Transformation). In Soc An 153 (Social and Cultural Perspectives in Development), Reuben Muni discusses IP topics “at length and in-depth” in the sections on Ethics and Politics of Development, Alternative Paradigms and Participatory Approaches on Development. Soc An 151 (Institutional Studies), as a course on traditional societies, gives the students opportunities to discuss IP communities in their different historical contexts. An elective, Soc An 145 (Social Movements) emphasizes the emergence of indigenous peoples’ movements.

Dr. Narcisa Canilao, teaching Soc Sci 180 (Epistemological Issues in the Social Sciences), discusses IP experiences and perspectives on important issues like neocolonialism in education and language and identity, and issues pertaining to epistemic violence upon indigenous knowledge. Canilao believes that other social science courses can incorporate IP topics in their syllabi. One example she cites is in Philo 195 (Philosophy of Language), where “the

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Cordillera Studies Center Works-in-Progress Lecture Series  
26 August 2010 Lecture: Dr. Alejandro Ciencia, Jr.

## When the Supreme Court Reverses its Own Ruling: The Case of the Mining Act of 1995

■ By Arellano Colongon, Jr.     *“Members of the Supreme Court are like other political actors”*

Dr. Alejandro Ciencia asserts that it is anomalous that political scientists have written little on Philippine judicial decision-making when, in fact, the powers of the Philippine Supreme Court (SC) have greatly expanded in the post-Marcos era. Indeed, there is a perceived judicialization of politics or a growing ‘activism’ of the judiciary in Philippine politics, yet it draws little attention from scholars. Do we care, for instance, about what makes a sacred institution like the Supreme Court reverse its own ruling? To fill in this gap, Prof. Ciencia engages in a pioneering work that focuses on judicial decision-making in the Philippines, analyzing the SC’s reversal of its ruling in December 2004 on the constitutionality of the Mining Act of 1995.

### The Mining Act of 1995 and the La Bugal Case

On March 3, 1995, then President Fidel Ramos signed into law Republic Act 7942 (Mining Act of 1995). He immediately entered into a Financial and Technical Assistance Agreement (FTAA) with the foreign-owned Western Mining Corporation Philippines (WMCP) covering 99,387 hectares of land in Southern Philippines. On August 15, 1995, then DENR Secretary Victor Ramos issued the Implementing Rules and Regulations (IRR) through DENR Administrative Order (DAO) No. 95-23. In March 1996, the IRR was repealed and superseded by another IRR issued as DAO No. 96-40 on December 20, 1996 in view of the Marcopper Mining Disaster that same year.

In February 1997, a petition was brought to the Supreme Court questioning the validity of the Mining Act, its IRR, and the FTAA entered into by President Ramos with the WMCP. The case is known as *La Bugal-B’laan Tribal Association, et. al, versus Secretary Victor O. Ramos, et. al*, G.R. No. 127882. The petitioners argued that the provision on ‘service contracts’ which were in the 1973 Constitution was ‘an option disallowed by its mere omission’ in the 1987 Constitution. They argued further that the 1987 Constitution provides that ‘foreigners can take part in mining activities in the Philippines only via FTAA’s.’ However, ‘an FTAA that allowed foreign management was in fact a service contract’ (as is the case of the FTAA with the WMCP), which was, therefore, illegal. Thus, the petitioners argued, the Mining Act of 1995 must be declared invalid.

In January 2004, the Court ruled in favor of the petitioners (8-5 with one abstention), i.e., that “FTAA’s are service contracts and, as such, are prohibited by the 1987 Constitution.” However, after subsequent motions for reconsideration by public and private respondents, the Court reversed its own ruling with a vote of 10-4 by December of that same year.

How would scholars of judicial decision-making explain the reversal?



Dr. Alejandro Ciencia, Jr. of the College of Social Sciences

### Models of judicial behavior

To answer the question, Ciencia presented three models of Supreme Court decision-making, namely: the legal, strategic, and attitudinal models. He focused on the attitudinal model as an alternative and plausible explanation for the (non-unanimous) ruling reversal of the Court on the Mining Act of 1995.

The legal model, the dominant paradigm in legal scholarship, explains that the Supreme Court decides cases in light of the facts of the case vis-à-vis ‘the law.’ It depicts judicial decision-making as a highly structured, norm-governed process that allows very little room for justices to exercise personal discretion because they simply adhere to precedent, and use legal reasoning. Similar cases require justices to apply similar rules employed in past similar cases and to render similar decisions. In this model, reversal of a decision would be attributed to the discovery

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of previously hidden relevant facts and the acquisition of ‘additional knowledge.’

Ciencia cites the commentary made by legal luminary Joaquin Bernas as an example of an analysis from the legal model, or a ‘law-centered account of the reversal.’ Ciencia quotes Bernas:

A change of mind in constitutional cases is always a possibility because of the varied modalities of constitutional interpretation.... The original decision followed a textual approach supported by historical argument. The new majority [however] subjected the textual and historical approach of the previous majority to what may be called a structural and prudential critique (Bernas, in Ciencia 2010).

‘Textual interpretation’ equates the meaning of the constitutional provisions with the literal meaning of the actual words used in the said provisions. ‘Historical interpretation’ means interpreting the meaning of the constitution in light of the ‘intentions of the framers.’ Moreover, ‘structural interpretation’ requires judges to regard ‘the search for meaning of the constitutional text...as not just the task of the judiciary but also of the co-equal executive and legislative branches.’ ‘Prudential interpretation’ requires the judge to weigh and measure the costs and benefits that result from a particular policy decision. Thus, to say that the reversal was a result of the Court’s ‘structural and prudential critique’ of the January 2004 ruling is to say that the SC acknowledged the Mining Act as an expression of the policy preferences of Congress and the president who signed it into law (a structural argument). The SC also paid greater attention to the economic consequences of its decision (a prudential argument) in light of the country’s fiscal crisis in 2004.

Political scientists prefer to use the strategic and attitudinal models in explaining judicial behavior. The strategic model portrays the SC and its justices as constrained, policy-oriented and goal-oriented actors who would arrive at decisions only after seriously taking into account the

policy-preferences, capabilities, and the likely actions of other actors and institutions (i.e., other branches of government) that could hinder them from achieving their preferred policy goals. In this model, a reversal of decision could be the result of the alignment or non-alignment of policy preferences and political strengths of the Court and another branch of government (e.g., the executive). A shift in the political strength of the executive could result in ruling reversals, signifying a strategic withdrawal by the Court from an earlier position.

### **An Attitudinalist Account of the Reversal**

Ciencia focused on the attitudinalist account of the reversal. To test the plausibility of this model, he looked into three possible attitudinal explanations: (1) composition change; (2) issue change; and (c) policy position change. He argues that composition change played a minor role in producing the votes necessary for the reversal. It was the change in the votes of continuing members of the Court (rather than the new appointees in December 2004) that provided the crucial votes that led to the reversal. Five of those who were with the majority in the first decision nullifying provisions of the Mining Act changed their vote. They were Chief Justice Davide, Justices Puno, Quisumbing, Corona, and Tinga.

To test for issue change, Ciencia did a content analysis of the judicial opinions and pleadings on the mining case aimed at ascertaining whether there was a change in the case facts that the justices were responding to in their January and December rulings and opinions. Ciencia concluded that the formal legal issues of the Mining Act case have largely remained unchanged between the first and second rulings. However, critical were new facts and issues introduced which, for the most part favored the pro-Mining Act position. For instance, Ciencia noted the inclusion of the Chamber of Mines of the Philippines (CMP) as ‘intervenor’ in the petitions after the January 2004 ruling. He argues that the CMP’s intervention indi-

cated that, for the SC majority in December 2004, what was at stake in the mining controversy was not anymore the mere FTAA of a foreign firm with the Philippine government, but the future of the Philippine mining industry as a whole, if not the entire Philippine economy.

Furthermore, Ciencia explained the role of the CMP’s counsel. One was Florentino Feliciano, a former Supreme Court Justice who is a widely recognized expert in international law and international finance. Ciencia asserts that Feliciano provided greater credence to the respondents’ (government and the CMP’s) reading of the Constitution. The other counsel was former UP Law Dean Pacifico Agabin, who wrought damage to the anti-Mining Act position especially in light of the fact that the text of the January 2004 majority ruling cited his writings. Agabin’s works were used to argue that the 1987 Constitution had disallowed service contracts, and were thus unconstitutional. Ciencia asserts: “In making the clarification that the Philippine Constitution has not banned all forms of service contracts, Agabin did not simply offer an alternative reading of the charter. He also sought to employ the ‘authority’ vested in him by the petitioners—and by the original ponente, Justice Conchita Morales—to debunk their very own claims.”

It must be noted, however, that the Court in December 2004 was faced with conflicting ‘facts’ regarding the benefits of mining. While it may be said that Court adopted a ‘prudential approach’ in deciding on the Mining Act, Prof. Ciencia argues that invalidating the Mining Act could have also been a ‘prudent’ decision had the court given credence to the researches showing the negative effects of mining. Ciencia notes that in this case, the attitudinalists would insist that personal attitudes bear upon the judge’s appreciation of the ‘facts of the case’ when presented with conflicting claims whose veracities cannot be established outright.

At this point, it appeared that ‘issue change’ would explain the ruling rever-

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On August 16, 2010, the College of Social Sciences hosted a public forum dubbed as 'Ballot Power' at the UP Baguio Auditorium. The forum was sponsored by the Northern Luzon Coalition for Good Governance (NLCCGG), a coalition of 24 civil society organizations and active individuals based in the Ilocos, Cagayan Valley, and Cordillera regions. The forum aimed at engaging newly elected officials in monitoring government and its projects. Formed in 2006 and headed by Pura Sumangil, NLCCGG members have agreed to work together to institutionalize citizen-government partnership by enhancing the capacity of citizens to engage the government towards responsible stewardship. The group is supported by The Asia Foundation (TAF) and the Affiliated Network for Social Accountability in East Asia and the Pacific (ANSA-EAP, a project managed by the Ateneo School of Government). The NLCCGG is also preparing for the October 2010 Barangay Elections.

#### The participants

The forum revolved around the Social Weather Station (SWS)'s presentation of its survey of the people's evaluation of the May 2010 automated elections. Ms. Guerrero, Vice President and Chief Operations Officer of the SWS, presented the results of the election survey. A panel of reactors gave their comments. They were Dr. Alejandro Ciencia, Jr. (Assistant Professor of Political Science, UP Baguio), City Councilor Philian Weygan (Baguio City LGU Representative), Bishop Carlito J. Cenzone (Church Sector Representative), Commissioner Rene V. Sarmiento (COMELEC Representative), and Ester S. Alkonga (NLCCGG/Civil Society Representative).

#### Highlights from the SWS presentation

The study was based on six nationally representative surveys—five surveys taken of Filipino voters from February to June 2010 and one survey taken of poll work-

# Ballot Power

■ By Arellano Colongon, Jr.



ers in June 2010. The national surveys covered themes such as trust in election institutions, quality of the May 2010 elections, perceptions about the Automated Election System (AES), and experiences of voters and poll workers during the elections.

The following constitute the summary of findings: (1) The quality of the May 2010 elections was markedly better than that of previous elections, as evaluated by voters and poll workers. This is also seen by comparing the new surveys with counterpart SWS surveys done before and after the previous elections. (2) The evaluations improved mainly due to the speediness and credibility of the election results, under the new AES, notwithstanding fairly widespread fears of its vulnerability to sabotage. (3) The respondents' pre-election expectations as well as post-election reports about other types of election irregularities were not markedly less in 2010 than in earlier elections. (4) Although the AES was accompanied by new types of problems for them, both voters and poll workers were generally pleased

by the AES and favor its continued use in future elections.

Does a candidate with a 'popular' name have an advantage over neophytes? This was one interesting question raised during the open forum. Ms. Guerrero replied that respondents would still vote based on track record in public service associated with the name. She added that popular-

ity does not guarantee being elected, citing the case of a popular noontime show host who commissioned a question to find out if he has a chance in the senatorial race. The survey revealed that there was no doubt about his popularity nationwide, but that the respondents said they would not vote for him. (He did not run, thank God!). A related longitudinal data from 1992 to 2010 showed that there are more respondents who believe that a candidate wins due to true popular support, with or without political machinery.

#### Insights for Northern Luzon

Councilor Weygan emphasized the need for civil society engagement in the affairs of the local government. She encouraged greater communication between civil society and the local government. Relevant to this point, Ms. Guerrero of the SWS shared the story of two local polling centers in the Philippines that the SWS trained in the '90s, and which have survived up to today. The research centers of Ateneo de Naga in Naga City and the Holy Name University in Tagbilaran City, Bohol have regularly conducted surveys not just on local voting preferences, but on various local governance issues. Local polling has become the local government's mechanism for citizen feedback on government performance. This practice has encouraged greater transparency and accountability in local governance. The local governments have also learned to appreciate scientifically generated information regarding people's perception, both positive and negative. ■

# Buwan ng Wikang Filipino: Pagkilala sa mga Wika ng Filipino

■ Ni Ana Isabel Caguicla

*“Maraming mga kaakibat na isyu ang pagpapatupad ng MLE sa Pilipinas”*

Noong ika-20 ng Agosto 2010, idinaos ang U.P. Baguio Forum sa Multilinggwal na Edukasyon (MLE) sa Bulwagang Juan Luna, Unibersidad ng Pilipinas Baguio. Ito ang tampok na aktibidad ng pamantasan para sa pagdiriwang ng Buwan ng Wikang Filipino sa taong 2010. Nagsilbi rin itong preliminaryong aktibidad sa paglulunsad ng Pambansang Summit sa Wika 2011 na siyang ambag ng Kolehyo ng Sining at Komunikasyon sa Ginintuang Anibersaryo ng UP Baguio.

Layunin ng forum na matalakay ang estado, preparasyon, implementasyon at mga isyung kinakaharap ng MLE. Upang maisakatuparan ang layuning ito, hinikayat ang partisipasyon ng mga opisyal ng pamahalaan, guro at estudyante mula sa Hilagang Luzon (Rehyon I, Rehyon II at CAR).

Nagsilbing mga tagapanayam sa forum ang mga opisyal ng DepEd sa Hilagang Luzon. Kabilang sa mga nagbigay ng pamayam ay sina Dr. Modesta Bastian ng CAR, Dr. Marcelli Macob ng Rehyon I, Dr. Purificacion Macarubbo ng Rehyon II at Dr. Ellen Donato ng Baguio City.

Nagbigay si Dr. Macob ng panayam tungkol sa Preparasyon para sa mga Guro (Teacher Preparations). Sa kanyang presentasyon ipinahayag niya ang pagsuporta ng Rehyon I sa bagong palising pangwika ng DepEd kung saan Ilocano ang ginawang midyum ng pagtuturo sa mga core subjects mula grade one hanggang grade 3. Inilatag niya ang mga kaukulang preparasyon para sa mga guro para sa



**Dr. Ellen Donato, Schools Division Superintendent, Baguio City**

epektibong implementasyon ng MLE sa kanilang rehiyon. Pagbibigay ng oryentasyon, pagpapalaganap ng impormasyon at mga pagpupulong hindi lamang sa mga guro kundi pati na rin sa mga magulang ang ilan sa mga nabanggit na paghahanda. Binigyang-diin ni Dr. Macob ang pangangailangan sa patuloy na pagsasanay sa mga guro upang higit na maging epektibo ang dulong na MLE sa pagtuturo.

Iniatas ang panayam tungkol sa Mga Tulong na Materyal sa Pagkatuto (Learning Resources) kay Dr. Macarubbo. Ibinahagi niya ang mga materyal na nilikha ng mga guro sa Rehyon II para sa pagtuturo ng wika at matematika sa grade one. Nagsagawa siya ng isang teaching demo para maranasan ng mga nakilahok sa forum ang isang klase na tinuturuan gamit ang wikang Ibanag. Ipinagmalaki ni Dr. Macarubbo ang pagkukusa ng mga guro sa Rehyon II na magdebelop ng mga materyal sa pagkatuto tulad ng mga big books at mga modyul para epektibong maipatupad ang MLE sa kanilang rehiyon.

Sa pagtatapos ng forum, nagbigay si

Dr. Donato ng panayam tungkol sa MLE sa Global na Milyu (MLE in a Global Milieu). Sa kanyang presentasyon, binigyang-diin ang mga benepisyo ng pagkatuto sa mother tongue. Maliwanag sa mga pag-aaral na kapag nagkaroon ang isang bata ng mastery ng kanyang wika at umabot na ito sa punto kung saan hasa na ang kanyang kritikal na pag-iisip, maaari niyang ilapat ito sa pag-aaral ng ikalawang wika.

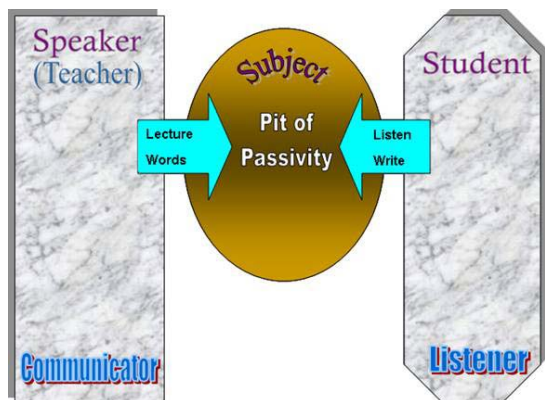
Bagaman ito ang dakilang layunin ng MLE, maraming mga kaakibat na isyu ang pagpapatupad nito sa Pilipinas. Nariyan ang suporta ng gobyerno sa bagong palising pangwika, restriksyon sa kurikulum, kahandaan ng mga guro at sapat na mga kagamitang panturo.

Ang mga isyung tinukoy ni Dr. Donato ang naging laman ng mga talakayang naganap pagkatapos ng bawat panayam. Nagkaroon din ng palitan ng mga saloobin tungkol sa pagpili at pagtatalaga ng dominanteng wika sa isang lugar kung saan ginagamit ang iba't ibang mga wika. Mula naman sa hanay ng mga estudyante, lumabas ang isyu tungkol sa implikasyon ng MLE sa kanilang pagkakatuto. Sa daloy ng mga talakayan, higit na luminaw ang halaga at kapangyarihan ng wika bilang kasangkapan sa pagsulong ng isang mahusay na edukasyon.

Sari-sari ang mga opinyon at ang mga tugon subalit ang tiyak, malayo pa ang daang babagtasin ng MLE bago ito makarating sa layong nais nitong tuparin. ■

# On Teaching

■ By Melba Patacsil



Teachers should be the first persons to know if learning takes place in the classroom. Whose problem is it when students do not pay attention? When they do not show interest? When they do not participate? Or worse, if half the class is failing?

Shown above is the traditional way of teaching where the teacher lectures on the lesson and he/she expects the students to listen. The problem is when the teacher and the students become passive participants in the classroom. They fall into a pit of passivity where no learning process transpires. And if there is no learning, there is really no teaching that transpires.

The heart of a true teacher should know that education must be an engaging experience, one that stimulates the learners, challenges them with authentic experiences, encourages them to work in groups, motivating them to seek, integrate and create knowledge. A love of learning should not end inside the classroom. Instead, the classroom should allow students to love learning throughout their life.

Today's generation of learners are different and educators have not been sensitive to these changes. In educational settings, are we concerned about how students learn? Now, more than ever, the call is for a student-ori-

ented learning. The burden is upon the teacher to cause the students to learn.

Loving learning becomes spontaneous only when there are authentic experiences and when students become excited. What then should a teacher do to make learning spontaneous?

**The answer is to innovate**

Innovation is the act of introducing something new. There are two components of innovation: one is the creation of knowledge and second is the application of this knowledge. A teacher should work on innovation because the quality of education that teachers provide to students is highly dependent upon what teachers do in the classroom. Experiences inside the classroom are big factors in student learning. Students become excited when there are new things and innovation increases student interaction during lectures and classroom activity.

Good innovation should have the following characteristics: 1) Foster deep and meaningful learning; 2) Instill knowledge in students; 3) Help students to focus on learning objectives while experiencing fulfillment in doing the activity; 4) Answer student needs and interests.

Teachers should keep on developing new ways in presenting concepts in their subject. The traditional way of teaching the usual concepts to students today is a big setback to quality education. If we are serious about educating students, it is important that we break down our own out-of-date views about learning and replace these with new images of learning new knowledge.

## Innovation in Teaching Chemistry

As a chemistry teacher, I know that a lot of students fear my subject. To encourage them to love chemistry, I make use of the following approaches: *Classroom as playground*

Here I construct games that explain a concept in chemistry. One game that I have asked them to do in my class is a pie-chem. Pie-chem is like a puzzle where pathways in biochemistry are placed on a table to look like a pie. Each group chooses a pie by random,

and each member of the group is given 10 minutes to explain each pathway, identifying the main reactants and products in every pathway and connecting such pathways to the other group.

Pass the ball. This is a game that I usually do during lectures. To get my students' attention, I ask them to pass a ball once I start talking. Once I say a key word, the passing of the ball stops and the student holding the ball will be the one to answer the question.

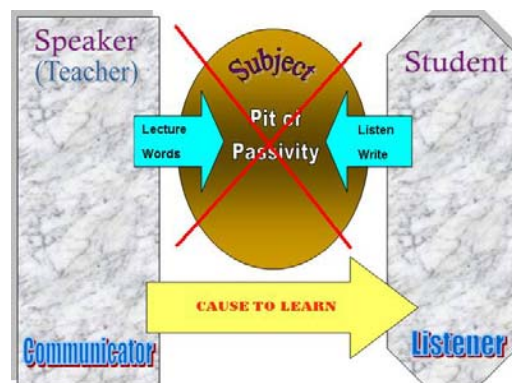
Team building is another game with groups of four members. Before the game I give readings to my students. Each group will make its own list of questions. Each group will take turns in asking the questions. The first group to give the correct answer gets one member from the group that asked the question. At the end of the game, the group that has the most number of members wins.

## Journal assessment

To encourage my students to do research I ask them to assess research journals in chemistry. From the journals, each group will propose possible research studies. In the paper they will explain the methodology that they will use as well as the importance of their study.

## Reflective case study

Here I give a list of topics to my students that they are allowed to choose from and do research on. They are asked to submit a paper and summarize their findings. Based on their research they write their own reflections and positions on the subject. ■



# T-RAYS RESEARCH

■ By Alipio Garcia

The terahertz (THz) region of the electromagnetic spectrum lies within the range of frequencies from microwave to infrared, or in terms of number of oscillations per second or Hertz (Hz), from 100 billion to 10 trillion Hz. These invisible radiations are also called T-rays.

Until recently, T-rays were the least studied of all electromagnetic radiations, mainly due to the unavailability of efficient THz sources and detectors. The difficulty of generating T-rays from the low frequency side (i.e., electronic sources) and from the high frequency side (i.e., photonic sources) gave birth to what is known as the “technology gap” or “terahertz gap.” Despite these challenges, the enormous potential of T-rays for technological applications pushed research efforts along the lines of generation, detection, and manipulation. T-rays research today owes its progress to the technological advancements in photonics and electronics that started in the early 1990s.

## The nature of T-rays

Contrary to common notion, T-rays abound in the universe. Most terrestrial substances emit terahertz radiation as a consequence of any or a combination of several innate processes like rotational and vibrational transitions in molecules and organic compounds, lattice or phonon vibrations in crystals, intraband or subband transitions in semiconductors, and energy gap transitions in superconductors. Unfortunately, T-rays that are readily available to us are incoherent and very low in intensity. Similarly, earth-bound T-rays emanating from the sun, stars and other light sources out there suffer hopelessly from diminished intensity as they penetrate the earth’s atmosphere.

One major research interest therefore is the search for a compact and efficient source for T-rays. Maxwell’s equations have provided us with the specifications necessary for a good THz source such as high carrier mo-

bility and high dielectric breakdown. In order to mainstream or commercialize T-rays technology, particularly in the fields of health care and security, it is imperative that the costs of production, detection, and manipulation of this type of radiation be significantly reduced and made comparable with current technology which is dominated by x-rays.

## T-rays science and technology

From the technological viewpoint, the most important property of THz radiation is its ability to penetrate virtually all materials with the exception of water and metals. This property, plus the fact that T-rays are non-ionizing (unlike x-rays), makes THz technology ideal for imaging applications. Concealed weapons inside leather suitcases or non-metallic packaging can be detected with ease. Because most substances have characteristic emission in the THz range, detection and identification of substances like explosives and drugs can be made instantly. Although water absorbs T-rays very easily, it still allows a penetration depth of about a millimetre, thus making it possible for the non-invasive detection of epithelial tumor or cancer cells. Ex-situ analyses of human tissues can be enhanced by freezing the tissues first, exploiting the increased penetration depth of T-rays through ice compared to that of water. Dental imaging will be one definite domain for T-rays technology, largely due to the low water content of samples.

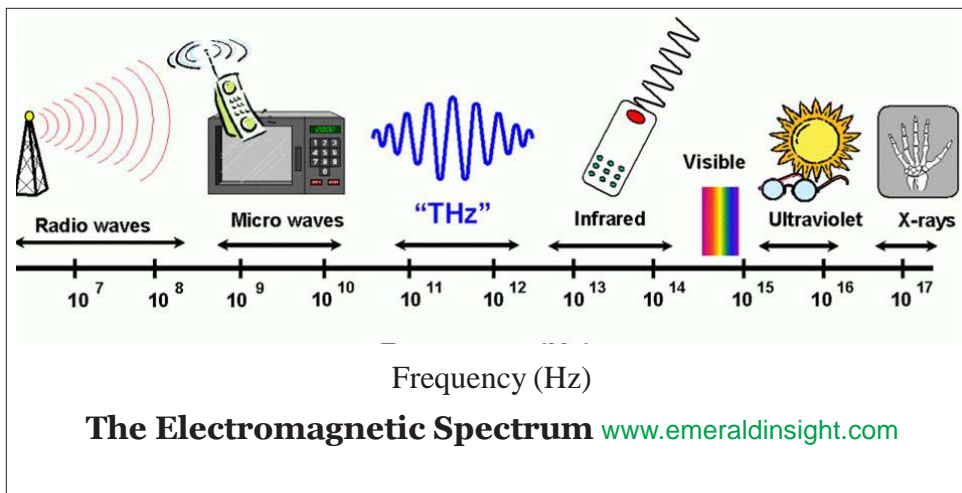
T-rays have also been demonstrated to distinguish hybridized from denatured DNA, paving the way for the development

of label-free DNA chips. The ICT sector will also benefit from T-rays technology, in the form of wireless and satellite communication and high speed data-processing. The ability to recognize unique human THz emission will improve reliability of biometrics. In the field of materials evaluation, THz spectroscopy has been shown to yield information on interface quality.

This is the result of one of our researches in collaboration with the Institute of Laser Engineering in Osaka University and the National Institute of Physics in UP Diliman. The same collaboration identified another potential material for THz source – quantum dots. Using multilayer quantum dot structures, our team was able to show an increased intensity of THz emission, approaching 70% of the maximum intensity measured from standard sources. As THz technology continues to mature, more sectors will reap direct dividends, including basic earth sciences (geology, chemistry, etc.) and astronomy (in identification of cosmic materials).

## A social concern

There is one growing concern among human rights sectors regarding the use of THz technology. When somebody is scanned (say, in an airport security) with T-rays, it is possible to produce a completely nude image of the person. This is because of the penetrating ability of T-rays on clothing materials. The fast pace of THz research may render this technological possibility in 5 years or less. It may be a wise move to consider Dr. Romeo Dizon’s advice to “invest in metallic underwear.” ■



## University of California at Berkeley

### Workshop on Inverse Problems: Connections for Women

# A Visit to Berkeley

■ By Priscilla Supnet Macansantos

*UP Baguio's Chancellor meets up with fellow women polymaths*

I had been to the University of California at Berkeley sometime in the 1980s, on one of my visits to California, while studying for my MS Mathematics degree in Delaware. Ave Tolentino, former member of the Chemistry faculty at UP Baguio, and then employed by UC Berkeley, drove me around the campus, up the hill where the UC Berkeley Botanical Garden is located. I was not aware that the Mathematical Sciences Research Institute (MSRI) was then being built atop the same hill, overlooking the San Francisco Bay, and the sprawl that is Berkeley and its environs.

This visit, many years after that first one, was less leisurely. I came to attend the Workshop on Inverse Problems at MSRI - the two-day "preliminary" program - whose speakers were all women mathematicians, and the bigger number of invited participants female graduate students. (During succeeding workshops on the same theme of Inverse Problems, the participant groups were not as homogenous.)

The title of the workshop was prefaced "Connections for Women," a somewhat intriguing one for me, until I realized during the first day that MSRI, like a considerable number of US Math Departments and Institutes, had included in its programs segments devoted to the work and participation of women mathematicians and scientists, as a way of encouraging the participation of more women in Mathematics research. After the final lecture on the first workshop day, a roundtable was convened, in which senior women mathematicians discussed with female graduate

students special concerns, challenges and strategies relative to building a career in mathematics. The situation in major Math Departments in the US (and in many parts of the world) is one where there are only a handful of women mathematicians in the faculty, where despite increasingly vigorous efforts to address this lopsidedness, the numbers have yet to change significantly.

The workshop itself consisted of talks by researchers on the theory and applications of Inverse Problems in Mathematics. As the workshop announcement states, "Inverse Problems are problems where causes for a desired or an observed effect are to be determined. They lie at the heart of scientific inquiry and technological development. Applications include a number of medical as well as other imaging techniques, location of oil and mineral deposits in the earth's substructure, creation of astrophysical images from telescope data, finding cracks and interfaces within materials, shape optimization, model identification in growth processes, and modeling in the life sciences." The modules/lectures included an Introduction to Microlocal Analysis, Asymptotic Expansions for Small Inhomogeneities in Electrical Impedance Tomography (EIT), Imaging in Clutter, and Intro-



**SIDE TRIP TO AUSTIN.** With daughter Monica, (left), first-ever Filipino to be awarded a James Michener MFA Fellowship in Creative Writing at the University of Texas

duction to Seismic Imaging.

The theoretical stuff of microlocal analysis is pseudo-differential operators, which provide an approach to the solution of differential equations, particularly if there are singularities (irregularities). On the other hand, applications that were discussed in some detail had to do with noninvasive medical imaging using EIT (for instance, the use of x-ray-like waves to identify and characterize tumor-like growths inside the body), and seismic imaging (finding water and mineral sources below the earth's surface without massive excavation).

I had visited two other Mathematics Institutes in the past - the Hanoi Institute of Mathematics in Vietnam in 1998 and 2002, and the Institute of Mathematics and its Applications (IMA) in Minneapolis, Minnesota in 2003. Like MSRI, these institutes function independently from universities,

*continued next page*

though both the IMA and the MSRI are located close to universities (the IMA is in the campus of the University of Minnesota, and the MSRI, on top of the hill overlooking UC Berkeley). They draw many of their mathematician researchers and student participants from the nearby university but there are visitors and affiliates from all parts of the country and the world as well, contributing to the workshops, informal discussions, and other research-oriented activities.

The MSRI website describes the institute thus: "The Mathematical Sciences Research Institute in Berkeley, California, is internationally renowned as a center for mathematics research and postdoctoral education. The Institute hosts about 80 researchers in residence at any given time, each a leader in his or her field. They participate in scientific workshops and programs that target the world's most challenging scientific problems and that last up to one academic year. The Institute is an independent non-profit organization that enjoys extensive support from individuals, foundations, corporations, government agencies, and more than 90 universities and institutions. An indication of MSRI's reputation is that since its founding in 1982, the Institute has been one of the largest single projects of the National Science Foundation's Division of Mathematical Sciences. More than 1500 mathematical scientists visit MSRI each year, many for substantial periods."

In North America and Europe, as well as many parts of the world, Mathematics and /or Science Institutes like the MSRI have been set up precisely to advance Mathematics and scientific research beyond the confines of academe, making available substantial resources for research, and allowing researchers to work with their colleagues and students, away from the

demands of teaching, for periods ranging from a month to a year. There is reason to believe the set-up works. Just recently, Brown University was given funding to put up a Math Institute, the eighth NSF-funded Math Institute in the US. Perhaps in the not-too-distant future, the Philippines might consider putting up a similar institute – not the academic department that is merely renamed an institute, but a separate unit whose primary mission is to do research.

Needless to say, I found the brief visit to Berkeley in August very satisfying. The excellent MSRI site makes it one of the most coveted destinations for research mathematicians wanting to visit an institute. The MSRI building, including its library, has wide windows, and the sight of the UC campus below, and the bay in the distance, gives one a sense of vastness, and brings one to a better sense of one's place in the world. I could not get enough of the scenery, though, as

I could not spend as much time as I wished in the well-appointed and equipped Institute library.

On my way out on the final day of the workshop, a classmate, whom I had not seen since high school came to see me, and she drove me around the streets of Berkeley, those that bordered the UC campus. Close to campus, one still gets the feel of a small University town, a charming, comforting air that one does not feel in bigger cities. My high school classmate and I took dinner at a Thai restaurant, a homey place where the elderly proprietor found the time to tease the toddler child of a customer. As we drove out, we caught sight of a small bookstore aptly called Serendipity.

There are places one may have visited once before. But returning to these places can bring discovery and delight. It was like serendipity, this visit to Berkeley. ■

## Announcements



Master of Arts in Language and Literature  
Admission Test for 2<sup>nd</sup> Semester, AY 2010-2011  
October 18, 2010, 9:00 am  
CAC TV Room

Bookfair  
October 11-15, 2010  
UP Baguio Library



10th Annual Conference: Philippine Society  
for the Study of Nature  
UP Baguio  
October 20-24, 2010

### From Indigenous Peoples, *from page 2*

case of the disappearance of IP languages can be a demonstration of the integral relation between language and the construction of cultural identity.”

For RGEP courses, women and race, class and ethnicity, and issues in gender relations across cultures may be covered in Soc Sci 13 (Gender and Society). Hist 3, (History of Philippine Ethnic Minorities), is arguably the most comprehensive and important course on IP in the UP Baguio curriculum. The course objectives not only intend for the students to develop appreciation for the rich cultural tradition in the country, but also to impress in them the usually ignored “role of ethnic minorities in the formation of the Philippine nation.” This is also the only subject that devotes the entire syllabus to ethnic minorities and indigenous communities. If only to ensure that no UP Baguio graduate does a Candy Pangilinan, one wishes to make Hist 3 a required course for everyone.

‘Mainstreaming’ IP in the curriculum is not unproblematic as one might get entangled in issues of misrepresentation (e.g. what should the content be and from whose point of view?), of epistemic violence (e.g. the tendency to impose western knowledge systems to all others, effectively marginalizing alternative ways of knowing), and essentialism (e.g. indigenous cultures are homogenous and unchanging). As for UP Baguio, the initial survey results seem to suggest that the Colleges have taken a perspective sensitive to indigenous peoples.

The survey is far from complete, and there is need for more systematic research to understand how we might enrich the manner by which we advance IP perspectives and IP-related themes in university curricula. This way problematic issues engendered by mainstreaming can be addressed. ■

*Images on pages 1 and 2 were taken from Tabayag (Collection of Bencab), 2006.*

### Supreme Court reversal, *from page 4*

sal. However, it may be argued that the reversal was due to a change in the justice’s policy position or ‘ideology.’ Prof. Ciencia asks: Could the reversal be the product of a conversion to a new policy position instead of an issue change? Looking at the justices’ past voting behavior on similar issues involving rendering a decision on the validity of actions of officials from the executive branch, Ciencia classified the justices as being ‘pro-economic underdog’ (liberal), ‘pro-economic upper dog’ (conservative), or ‘moderates.’ He then compared the justices’ vote in December 2004 with this general pattern. He concluded that the voting behavior of the justices remained consistent and stable, supporting the hypothesis that ‘issue change’ and not ‘policy position change’ was the likely explanation for the ruling reversal on the Mining Act. Ciencia added, however, that the influence of personal policy or ideological preferences in judicial decision-making could not be ruled out completely. He pointed this out when he showed how the justices chose which facts to appreciate given contradictory information whose veracities could not be established outright.

Ciencia’s pioneering study shows an alternative (political science) perspective for understanding the Supreme Court’s ruling reversal in the Mining Act in December 2004 beyond the legal model. He has shown that the attitudinal model, specifically ‘issue change,’ is a plausible account for the reversal and identifies the fiscal crisis of 2004 as the specific ‘case stimulus.’ While the ‘issue change’ explanation echoes Bernas’ commentary that the new majority subjected the original decision to ‘prudential argument,’ the notable difference is that Ciencia offers an explanation for the voting behavior of individual members of the SC, especially in non-unanimous decisions, while Bernas’ explanation is primarily concerned with the decision-making of the Court as a collective body.

Ciencia ‘humanizes’ the Supreme Court with this explanation. Members of the Supreme Court are like other political actors who have their own ideologies and attitudes that shape their policy preferences, despite the ‘myth’ that the SC only renders decisions based on precedents and legal reasoning, as implied by the legal model. The strength of this alternative explanation is that it does not have the pretension that it is the only explanation for judicial decision-making, yet it is a plausible explanation of the reversal. In fact, it recognizes the structural embeddedness of the members of the Court (i.e., they follow certain principles and tradition of how to render judicial decisions), while rightly recognizing the attitudinal elements that lead to variations in the justices’ individual decisions—as proven by non-unanimous decisions made by the Supreme Court.

Dr. Ciencia’s lecture demonstrated the excitement and relevance of engaging in political research. This occasion was one of the many avenues by which he showed the enthusiasm and passion behind his work. If the growing number of thesis proposals on judicial decision-making is any indication, Ciencia is inspiring students of Political Science not just to follow his lead in this area of specialization, but also to engage in social research that contributes to public discourse. ■

*Prof. Ciencia did his dissertation on judicial behavior. He earned his Ph.D. in Political Science from UP Diliman in April 2010, and is back to teaching at the College of Social Sciences, UP Baguio.*



FA 190 (Art Seminar)

# Benhur Villanueva: Sculptor for the people

■ By Fara Manuel

*Materials from a 'native clearing' are crafted by a master's hands*



The Artist Talk featuring Baguio-based sculptor Benhur Villanueva left resonating views about art on its intrigued audience. Attended by members of a Humanities class, Visual Arts students and faculty, the talk was structured in a way that the artist became of primary importance and his work became secondary. In the world of art, this rarely happens.

Benhur shared age-old insights on how to approach artistic blocks, conquer the fear of a blank canvas or issues arising from lack of materials. The affair highlighted points like: immediacy and necessity for art-making, how limit brings about creativity and ingenuity as key to a good art.

Benhur Villanueva 'talks' to things, more particularly, bronze, marble and wood. Benhur would randomly pick a piece of wood which makes its way to a figurative assemblage. For him art has become a necessary fact of life, his methods spring from the need to produce a new technique and incite new concepts about the human form. His stylized human forms depict a deep, emotive connection with nature – you can almost feel the warmth emanating from the pieces.

Education and advocacy are intertwined in Benhur's craft. As an art educator for over 30 years, he has pursued teaching as a way to awaken people's minds and hearts to art. Among his recent advocacy is teaching art to the blind; his pupils are the members of the Northern Luzon Association for the Blind. As sculpture is the language of

touch, it becomes natural for his blind pupils to acquire the skill. Amidst defiant views from within and without, art has become a useful language made accessible to the blind artists in Benhur's passion to transform.

Art is for the people. This is crystallized in public art, Benhur's choice of medium. His artworks like "The Builders (2010)," in Baguio's Botanical Garden, opens up art as a subject of discourse by common people, not limited to art academics. Art can be many things to different people but for Benhur it certainly is an agent for change. ■



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