"Pan" and Literacy for Trinidad and Tobago Teachers

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C O N N E X I O N S

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Collection structure revised: March 9, 2011
PDF generated: January 18, 2013
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Chapter 1

Steelband history for local teachers[1]

As we tell our story of the pan....
Let us not forget the pioneers [2] of these remarkable instruments that have now become a global musical phenomenon. As the history unfolds follow it through our text and the links that are provided. Place yourselves in the scenarios and think positively of the contribution that "pan" can make to the Literacy of the at-risk students in our schools.
Where the pan was born
" There are not many working-class neighborhoods that can claim to have produced an original musical instrument recognized around the world. But Laventille, a hilly, low-income suburb just east of commercial Port of Spain, Trinidad, justly prides itself in being the birthplace of one of the most popular musical instruments created during the 20th century–the steel drum or "pan," as it is more correctly called. Laventille was settled in the mid-1800s by freed African slaves. There, the African tradition of drumming evolved over the years into rhythm bands of young, often rowdy men, who paraded the streets during Carnival and other celebrations pounding skin drums and, when those were outlawed, hollow bamboo drums. In the mid-1930s, these street bands began to use metal objects like garbage can lids, automobile parts, pots and pans, and biscuit tins because they were louder and stronger than bamboo, and they evolved into all-steel bands, or "steel bands" by the end of the 1930s." David Mangurian A short history of the shining drum [3] (2001)

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    "Everybody wondering how the steel band start
When you get to know, it will break your heart
I tell you now, it was founded by one Winston Spree
And this is how he started his first melody:
Be do be dom, tom ping, tom ping."

Calypso verse
---Calypsonian Lord Kitchener,
prolific writer of steel band music,
in his 1975 "Tribute to Spree Simon",
the "father" of pan.
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[1] This content is available online at <http://cnx.org/content/m18349/1.9/>.
[2] http://www.trinisoca.com/steelpan/
[3] http://www.iadb.org/idbamerica/English/MAY01E/may01e2.html

1.1 But we cannot forget Ellie Mannette...narrative by Norman Darway

"But, we cannot forget 1947, Ellie Mannette sink the fifty-five oil drum, because, 1947 again, carnival, Ellie Mannette had a pan called "Barracuda" in "Invaders". The pan was sounding different to the rest of the band. Tokyo men who were bigger than dem at de time, because they were young fellas, come looking for "Invaders" with a chant 'we looking for Invaders we want to cut off Ellie Mannette hand', they invade the band and got the 'Barracuda pan' that Ellie Mannette cherished most at that time and took it to the hills. For about two weeks they hang the pan on a tree with a message to Ellie to come and get it. But Ellie did not go for it and this is how he went into the fifty-five oil drum and he sink the pan. There were people who brought in the forty-five drum, but he went into the fifty-five oil drum and he sink it for a competition that he wanted to play in an' in that competition in 1947, he came second again, to a guy from Elza Popin. Chick McGrew Springer defeated him. Chick McGrew came beating with two hands. In 1943/44, Ellie Mannette put rubber on the sticks. So, he sink the pan and he put rubber on the sticks. There was a competition at Point Cumana for St. Peters Day, and there is where the first time most of the band see rubber on the sticks, when Invaders came there, and this is how the rubber start appearing on the sticks. Ellie Mannette was very creative and he was a gifted turner and could have done ah lot ah things on dat machine, it was unbelievable an' dis help him a lot, because when you look at de iron they dos beat in de band, Ellie was the first person who people see tuning the iron to the pitch of the pan. He would put it down there and burn dat iron and burn it until he get dat sound. That is why "Invaders" had dat unique sound. But the man, who was rivaling him, is Sonny Roach from "Sun Valley". Sonny Roach was also a gifted tuner and this is where in 1949 "Invaders" played in a competition at the Savannah 'It's magic' and won the competition. Sonny Roach band "Sun Valley" came second and "Cross Fire", who split from "Tripoli", came third. Then there was another competition where "Invaders" won and "Sun Valley" came second down town and Sonny Roach went home with "Bajan" Cecil and penned a tune called "Sun Valley Coming Down."

Articles, Pictures and an Activity

Thanks to TrinbagoPan.com [4] for this rich account of the history of pan. There are also updated PICTURES OF THE PAN on their site . You'll also want to READ and REVIEW most of the articles that have been written on the site about the topic. How do the ideas and views in these articles fit with your notion of education?

Darway's full story

You can follow the whole of Darway's story here: Steelpan Pioneers [5] . Be sure to raise questions that you'll want your students to research and discuss. Think of activities that you'll want them to do in teams.

Questions for discussion and research...

- Several strands emerge in the above sections for discussion:
- Who really invented the steelpan?
- What was the socio-economic status of the people associated with the first steelbands? How were they received?
- If you were a teacher in this era would you be associated with the pan?
- What is the link between pan and calypso?
- If you had to do a brief history of the pan what media or tools [6] will you use to tell your story?
- Are you a modern-day pan player? Will you encourage interested students to belong to the school steelband and why?

Discussion and a class project re the invention of pan...

"THERE was no inventor of the steelpan, according to Elliott "Ellie" Mannette, who received an Honorary Doctorate from the University of the West Indies (UWI) St Augustine Campus in 2000. Speaking at a public lecture/discussion titled, "The Birth and Development of the Steelpan", at the UWI Learning Resource

[4] http://www.trinbagopan.com/
[5] http://cnx.org/content/m18349/latest/ http://www.trinbagopan.com/darway/
[6] http://cnx.org/content/col10600/latest/

Centre, Mannette said: “Pan as an item was not invented by any person. It evolved and there are a number of people, including myself, who advanced it through certain stages of that evolution.” In much the same vein, dwelling on the issue of standardisation of the instruments, Mannette felt it was the way to go. “Everybody wants credit for inventing something, but that doesn’t make sense,” he said. “Firstly, let us get a common ground to work with, not necessarily my work or Bertie Marshall’s work." Adapted from the article by Terry Joseph 2000 [7] .

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    Some comments can spark a lively discussion. Pan is said to be
the only musical instrument that was invented in the 20th century.
How can it happen that more than one persons can be participants
in the "evolution of the pan"?


Has this happened with other inventions?
Can you think of other personalities who were involved?

This can be a class project.  Help your students to write and do research
about these persons. The sites listed in this module can be a convenient
starting point for you.
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The Steelband from 1962...

So much has been written about this topic and more will be added in years to come. Will there be new take off points? What will the future hold? The past was good to us [8] . " "By the time the sixties rolled around, the steelband was still a work in progress. The panyards became laboratories, and men like Williams would take the experiments one step further. His contribution was perhaps the most innovative piece of work of that era. He designed a tenor pan known as the "fourths and fifths," meaning that next to the tonic note were the fourth and fifth notes of that scale. This design is still the standard used in most steelbands to this day. And Bertie Marshall of the Highlanders would soon follow with his creation of the double tenor, a must in every steelband. The seventies belonged to Rudolph Charles, leader of the Desperadoes who took innovations beyond the tuning aspect of the instruments. He introduced the nine and twelve bass, which effectively extended the range and depth of the bass drums by increasing the number of drums from the traditional six to nine and then to twelve. Charles followed up with the quadrophonic, and improvements on the pitch of the tenor pan to what is now known as the high tenor; He also changed the appearance of the steelband with the silver chroming of instruments replacing the oil paints of the fifties and sixties. For better movement of bands through the streets, and to protect the instruments from the sun during the carnival parades, he put the stands on wheels and covered them with canopies. These developments were not confined to Trinidad and indeed Tobago, the other half of the twin-island nation. Across the seas on the smaller islands of the eastern Caribbean, in the late fifties and sixties, bands were being formed as well, at first with instruments bought in Trinidad, but later with home-made brands by men who had, over time, learned the art of tuning. For instance in the early fifties, Antigua, to the north, boasted of such bands as Brute Force and Hell’s Gate. In the decades that followed, the steelband would move beyond the shores the Caribbean to North America, England, other parts of Europe such as Holland, Switzerland, Sweden and as far east as China, Japan. Today in Trinidad alone, there are more than 100 steelbands. Across the world, hundreds more. Back in Trinidad in the late fifties/sixties, the developments in the steelband world were not simply a contribution to the family of musical instruments. The bands, comprised mainly of unemployed young black men, often found themselves in violent confrontation, something akin to the gang warfare that gripped certain cities in North America. As a result, these young men who should have been regarded as pioneers,were reviled by a large portion of the society, regarded as social outcasts, particularly by the middle and upper classes. After the island became independent from Britain in 1962, the new government moved to change the image of the panmen as they were being called. Official involvement was evident with the hiring

[7] http://cnx.org/content/m18349/latest/ http://www.trinicenter.com/Terryj/2000/Oct/paninvention.htm
[8] http://www.pantrinbago.co.tt/www/history/history1.asp

of bands to perform at social and state functions. Corporate sponsorship was also encouraged to provide the bands with funds to purchase drums, pay for arrangers, tuners and uniforms. Hence such marriages as Amoco Renegades, Coca Cola Desperadoes, (now West Indian Tobacco Company (WITCO) Desperadoes, Pan Am North Stars (since disbanded), Shell Invaders (now BWIA Invaders), Canadian Imperial Bank of Commerce (CIBC) Starlift (now Petrotrin Starlift). The involvement of corporate citizens in the affairs of these motley groups slowly helped to erase the stigma and bring about social acceptance by the wider community. Panmen are now regarded as the cultural ambassadors of the land and the steelpan has been officially recognized as the national instrument. In addition, both sponsor and band have grown to respect each other's role in their mutual existence. With this new image, the war on the streets soon gave way to another kind of warfare -a musical war on the stage. In 1963, the Carnival Development Committee which was formed to put a sense of organization into the street festival, started the panorama competition with each band vying for recognition as the superior band in the land. In this competition, every band is required to play a 10-minute rendition of a calypso of choice. The winners and other participants are rewarded financially and there are other perks, such as trips overseas and engagements at home. Over the past three decades, several bands have shot into the national consciousness as they repeatedly claimed the coveted title as panorama champions. Bands such as Desperadoes and Renegades (9 wins each), All Stars (4), Phase Two Pan Groove (2), Exodus (1) are now household names with international followings. Indeed, over the past four decades, the steelpan has come a long way, moving from the panyards of the most depressed areas of a society to some of the most prestigious concert halls around the world. The Desperadoes, for instance, have performed at the Royal Albert Hall in London, Carnegie Hall, the Apollo and Lincoln Theaters in New York, the United Nations building, and the Kennedy Center in Washington, D.C. Other bands like Renegades, All Stars, Phase Two, Exodus have wooed audiences from London to Paris to Japan, mesmerizing them with their renditions of some of the most complex works of the classic composers such as Bach, Beethoven, Mozart, Sibelius, Rossini, Borodin. As the world gets ready to enter the new millennium, the students of Spree, Mannette, Williams, Marshall, Charles who with their genius and creativity gave this century perhaps its sweetest gift, are preparing to take pan to higher heights. No one knows what the final product will be, but we know for sure that it will continue to make a joyful noise unto the world of music."

Acknowledgements
PanTrinbago website [9] for the continuous sections of text that deal with the history of the steelband.

> NOTE: READING and Writing: Like the music that pan produces in the hands of our players, so too students will be able to weave words in harmony and rhythm in the stories that they will be inspired by pan music and pan literacy to produce. See the articles by K. Hewitt [10] on the pan. You'll will want to analyze them as reading and writing exercises with your students: Forms One to Three and Upper Primary. Look at the articles' content: setting, story/reflective value,tone and how-can-I-write-like this significance. A few students may be inspired to write especially if they are really into the school steelband (and would prefer to spend their time there than in Maths or English class). Teach them to spell the terms of pan literacy. Let them do oral reading using parts of some articles. Discuss them as part of an evolving history.

Ideas for research projects
1. An ethnography of a panyard 2. How are school children involved with the pan? 3. What is the role of teachers in this involvement? 4. What gains have been made in the development of pan in your town since the last WW?

[9] http://www.pantrinbago.co.tt/www/history/history1.asp
[10] http://www.tishof.pan-jumbie.com/articles.htm

Chapter 2

Caribbean Music: Calypso and Found Percussion[1]

2.1 Introduction and Overview

Calypso is a style of music that developed in the West Indies, the islands of the Caribbean. It began in Trinidad, and spread through the islands, influencing many other popular styles of music, in the West Indies, the U.S., and around the world. This module includes several ideas for presenting Calypso to young students.

Use this lesson for:

- **Music class** - Make and play percussion instruments, and/or sing and play percussion using typical Caribbean rhythms.
- **Music concert** - Learn the songs (with percussion accompaniment) for a performance, particularly a multicultural concert.
- **Social studies class** - Do any of the activities, as part of a unit on West Indies cultures, cultures of the Americas, history of the Caribbean or of the Americas, African-American history, or African-American music.
- **Creative writing** - Do the "Introduction to Calypso", and then have the students write some calypso-style lyrics.

This module includes several different activities, all related to Calypso music. There is a short Introduction to Calypso music (Section 2.2: An Introduction to Calypso), songs (Section 2.5: Songs with Calypso Rhythms) to sing with calypso-style rhythms, a "found percussion" activity (Section 2.3: "Found Percussion"), Calypso-style rhythms (Section 2.4: Calypso Rhythms) to play on percussion, and a creative writing activity (Section 2.6: Writing Calypso Lyrics). Choose whichever are appropriate for your class; doing all of them will probably require at least five class periods. There are also suggestions for finding recordings (Section 2.7: Listening to Calypso) to listen to.

2.2 An Introduction to Calypso

Goals and Standards

- **Goals** - Following the presentation, students should be able to correctly identify photos, drawings, and audio recordings of steel drums, locate Trinidad and Tobago on a world map or globe, and give an age-appropriate description of the history of calypso music.

[1] This content is available online at <http://cnx.org/content/m11688/1.10/>.

- **Objectives** - The students will listen to steel drum, calypso, and/or calypso-style music, look at photos, drawings or videos of steel drums, locate Trinidad and Tobago on a map, and listen to a lecture on the history of calypso music.
- **Grade Level** - K-12 (adaptable)
- **Student Prerequisites** - none
- **Teacher Expertise** - Teacher expertise in music is not necessary to present this activity.
- **Time Requirements** - 10-20 minutes. Can be combined with one or more of the activities below to fill one (approximately 45-minute) class period.
- **Evaluation** - Assess student learning by including questions covering the material in a unit test, or by quizzing the students orally following the activities.
- **Music Standards Addressed** -National Standards for Music Education[2] standard 9 (understanding music in relation to history and culture).
- **Other Subjects Addressed** - The activity also addresses National Council for the Social Studies[3] standard 1 (culture) and 9 (global connections).
- **Extensions** - If at all possible, the lecture should be followed by at least one of the activities below, or a similar activity that makes the information more concrete and memorable. Older students may be asked to do independent research on the subject.

Materials and Preparation

- You will need a globe, world map, or map of the Americas.
- Have an audio player and some CDs or tapes for the children to hear. See below (Section 2.7: Listening to Calypso) for a list of suggestions.
- Have the tapes ready to play at the right spot, or know the CD track numbers.
- Pictures of steel pan drums or of steelbands, or video of a steelband performance, would be a useful visual aid. (You may use the drawing included here if you like.) Even better, contact any steelbands in your area to see if they would be willing to send a member or two for a demonstration. With younger students, you may also want to include pictures of the islands in your presentation while you are talking, to help focus their attention.

[2] http://musiced.nafme.org/resources/national-standards-for-music-education/
[3] http://www.socialstudies.org/standards/strands/

Steel Pan Drum

Figure 2.1: Today's steel pan drum is crafted by a skilled instrument maker, but it retains the basic shape of an upside-down oil drum with its bottom specially shaped to produce a variety of notes.

Procedure

1. Ask the students if they can name any kinds of (U.S.) American music that were strongly influenced by African music. There are many right answers to this question: blues, gospel, soul, and jazz, as well as newer African-American styles such as rap, and, in fact, most rock and pop styles.
2. Tell the students that Africans were also brought to many Central American, South American, and Caribbean countries. Whether or not your discussion also includes the cruelty and injustice involved will depend on the age and maturity of your students and how much you have already covered this subject. You don't want to use this lesson to introduce the horrors of slavery, but if they already understand what was going on, you can point out some of the influences this had on the music. There is also a large Indian population on Trinidad, the result of plantation owners encouraging immigration from India (as replacement workers when they were forced to free their slaves) using misleading promises that led to a kind of indentured servitude. Again, this may be more information than your class needs, or it may be appropriate and relevant to their studies.
3. Help the students find Trinidad on a map or globe. Tell them: Today Trinidad is part of a small country called "Trinidad and Tobago". (You can also help them find the smaller island of Tobago if you like.) But this island was once owned by Spain, and then by England, and many people came to the islands from India and France as well as west Africa. (Have them locate western Africa, India, England, Spain, and France on a map or globe). And all of those people brought their favorite traditions and favorite songs and music with them. When they settled on Trinidad, they heard each other's music, and eventually the African-Trinidadians invented a kind of music that sounded a little bit African and a little bit European but was also uniquely Trinidadian.
4. Play some of the music you have chosen for them.
5. Tell the students: Calypso began as a type of protest music. African-Trinidadians in the eighteen-hundreds were not allowed to talk as they worked, but they were allowed to sing. Many of the song leaders became very good at improvising words to songs in order to comment on the news of the day. ("The Banana Boat Song [Day-O]" of Harry Belafonte fame is the type of call-and-response work song

that this could be done with.) Calypso songs also had improvised words that commented on the latest news and sometimes on life in general, but they were more clearly protest songs that often featured sarcasm and wit. The subversive nature of the music alarmed the authorities, who in 1884, in an effort to stop it, banned the playing of skin drums. That hardly stopped the Calypsonians; they just made instruments out of bamboo instead. Bamboo makes a nice sound with a definite pitch[4] when you hit it with a stick; the bigger and longer the piece of bamboo, the lower the sound. (See Sound, Physics, and Music[5] for more information, or Sound and Music[6] for activities related to this.) So the calypso players cut many different lengths of bamboo and formed what they called **tamboo bamboo** bands. The government then banned the playing of bamboo tubes, claiming that the bands encouraged violence, but the Calypsonians still kept playing. Their bands had always included instruments other than skin drums or bamboo: stringed instruments, for example, and maracas, and bottle-and-spoon. But in the 1930's they began to make drums out of metal objects.

6. If you have any pictures or even a real pan drum for the students to look at, this is the best time to show them.
7. Tell the students: The calypso bands didn't just pick up pots and pans and beat on them. What they did was find useful objects and work on them until they became musical instruments. At first, the musicians made their own instruments, often out of the bottoms (the **pans**) of metal shipping containers, paint cans, and garbage cans. A good instrument maker could often shape a pan so that it would play different pitches when it was hit in different spots. By the end of the 1930's there were bands made up only of pans: **steelbands**. During the Second World War, empty 55-gallon oil drums became widely available on the island. The now-professional instrument makers perfected their technique, making and selling pan drums that could play an entire scale and that could specialize in playing melody[7], harmony[8], bass[9], or rhythm[10].

   NOTE: The steel drum is the only acoustic (non-electric) instrument invented in the twentieth century.

   In the 1950's, the unique sound of calypso became widely known and popular around the world, particularly in the U.S. Today the steel pan is the national instrument of Trinidad and Tobago, and there are official calypso competitions every year. People of all races enjoy and perform the music. Strings, saxes, clarinets, trumpets, tin whistles and percussion are all popular instruments at the competitions, although not as popular as the steel pans. And the focus of genuine calypso is still on improvising clever, humorous, and topical lyrics that still often poke fun at the rich and the powerful. But the sounds and rhythms of calypso can be heard in many other places, too: in movies, jazz, dance music, and in other, newer Caribbean music styles.
8. At this point, you can ask your guest for a demonstration, or play some more calypso-style recordings for them (to focus their attention, ask them if they can guess what types of instruments they are hearing), and/or introduce the related activities you will be doing.

2.3 "Found Percussion"

Goals and Standards

- **Goals** - Students will make musical instruments, with a variety of pitches, from found objects.
- **Objectives** - Students will bring from home a variety of discarded objects that make interesting sounds when struck. The students will sort the found objects by type and use them, alone or in groups, to

[4] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/>
[5] "Frequency, Wavelength, and Pitch" <http://cnx.org/content/m11060/latest/>
[6] "Sound and Music Activities" <http://cnx.org/content/m11063/latest/>
[7] "Melody" <http://cnx.org/content/m11647/latest/>
[8] "Harmony" <http://cnx.org/content/m11654/latest/>
[9] "Harmony": Accompaniment <http://cnx.org/content/m11654/latest/#l0c>
[10] "Rhythm" <http://cnx.org/content/m11646/latest/>

assemble collections of similar objects (or similar-sounding objects) with different sizes, that can be used to play three-pitch[11] percussion parts. Each student or group will demonstrate their finished percussion instrument to the class and/or use it in the following activities.

- **Grade Level** - K-12 (adaptable)
- **Student Prerequisites** - none
- **Teacher Expertise** - Teacher expertise in music is not necessary to present this activity.
- **Time Requirements** - One (approximately 45-minute) class period.
- **Evaluation** - Evaluate neatness, cooperation, and visual presentation, according to your usual rubric for craft activities, as well as student success in constructing an "instrument" with three similar sounds of different pitch.
- **Music Standards Addressed** - National Standards for Music Education[12] standard 9 (understanding music in relation to history and culture).
- **Other Subjects Addressed** - The activity also addresses National Council for the Social Studies[13] standard 1 (culture).
- **Extensions** - Older, gifted, or ambitious students may want to design and make instruments tuned to make specific pitches (more like an actual steel drum, mbira, or xylophone), that could be used to play a melody, from found objects. Encourage them to find objects that ring with clear, definite pitches (nails, rake tines, bamboo sticks, blocks of hard wood, metal bowls, and heavy cardboard tubes are some possibilities), and help them research easy ways to tune the objects.

Materials and Preparation

- Plan ahead to give your students plenty of time to find and bring in "found" objects that they can use to make instruments. Suggest that they look for discardable objects that have a nice or interesting sound. Send home notes of explanation if necessary. Possible suggestions (depending on how much and what type of work you will want them doing in class): clean, empty metal cans of all sizes, with no sharp edges; clean, empty plastic tubs and lids of all sizes; pieces of bamboo or dowels, cut (at home by a parent) into various short lengths; small pieces of hardwood lumber; empty cardboard tubes from paper towel and wrapping paper rolls, or sturdy cardboard containers such as oatmeal boxes. You may find further ideas in Percussion Fast and Cheap (Chapter 4) or Sound and Music[14].
- You may want to have calypso music to play in the background as they are working on their instruments.
- Be prepared for a noisy activity.
- Optional: If a messy activity is OK, you may want to supply, or have the students supply: some dry beans or beads for maraca-type sounds; sticky clay, plaster, water, or sand to "tune" the objects, and/or art supplies to decorate the instruments.
- You may also want to supply string and/or strong scissors and tape.
- The students will need beaters or drumsticks to play the instruments with. Rulers, heavy pencils, wooden spoons, real drumsticks, short dowels, or pieces of bamboo are all possibilities. You can supply these, have the students supply them, or use whatever happens to be at hand.

Procedure

1. Tell your students that since the 1950's, calypso music has mostly been played on professionally crafted instruments, including trumpets, saxophones, clarinets, guitars, and drum sets, as well as the traditional steel pan drum. But in its early days, Calypso was often played on instruments that people made from things they could find, including bamboo tubes, paint cans, shipping cans, garbage cans, and oil drums (big metal barrels that oil was stored or shipped in). Make sure they understand that the objects generally were not played as they were found, but were turned into instruments by the musicians.

[11] "Pitch: Sharp, Flat, and Natural Notes" <http://cnx.org/content/m10943/latest/>
[12] http://musiced.nafme.org/resources/national-standards-for-music-education/
[13] http://www.socialstudies.org/standards/strands/
[14] "Sound and Music Activities" <http://cnx.org/content/m11063/latest/>

2. Depending on how many objects are available, you may want to pool the materials and have the students work in groups, or let them trade or select objects if they are working alone. Each student or group should try to gather a collection of similar objects, for example plastic tubs of various sizes.
3. Have the students experiment with "playing" each of their objects. Do some sound higher than the others? Can they get more than one sound from the same object? Can they arrange the objects from lowest to highest sound? If they all sound the same, can they change the pitches of some of them, by cutting the cardboard tubes for example. If you don't mind the mess and the instruments are not going to be permanent, they can try tuning containers by sticking clay or tape to them, or filling them with water, sand, or plaster.
4. One group may prefer to make maracas of different sizes and pitches, by filling some containers with dried beans; prevent some messes by sealing the containers with strong tape once they have a sound that they like.
5. Have the students experiment: Do their objects give their best sound when they are held in the hand? Hung from a string? Put on a desk? Taped to a board? Laid across two two boards or dowels with some space beneath them? Tapped with fingers or with another object, or slapped against a thigh or the heel of a hand?
6. Once they have decided on their objects and decided how best to play them, have them assemble their final instrument from at least three differently-pitched objects and give a demonstration to the class. You may want to use some of their instruments to accompany a song (Section 2.5: Songs with Calypso Rhythms) or to play calypso rhythms (Section 2.4: Calypso Rhythms).

2.4 Calypso Rhythms

Goals and Standards

- **Goals** - Students will learn to perform calypso-style rhythms.
- **Objectives** - Students will listen to and imitate one or more calypso-style rhythms. Students will perform rhythms as a group, either all playing the same rhythm, or playing a variety of rhythms at the same time. Students will display good musicianship by keeping a steady beat, keeping to the same beat as the group, and playing rhythms accurately.
- **Grade Level** - K-12 (adaptable)
- **Student Prerequisites** - none
- **Teacher Expertise** - The teacher or an assistant must be able to accurately demonstrate the rhythms and lead the class in playing them. If the students will be playing more than one rhythm at a time, the teacher should be comfortable leading simple percussion ensembles.
- **Time Requirements** - Only a few minutes to learn each rhythm
- **Evaluation** - Evaluate students on participation as well as rhythmic accuracy.
- **Music Standards Addressed** - National Standards for Music Education[15] standards 2 (performing on instruments, alone and with others, a varied repertoire of music) and 9 (understanding music in relation to history and culture).
- **Other Subjects Addressed** - The activity also addresses National Council for the Social Studies[16] standard 1 (culture).

Materials and Preparation

- Review the rhythms below. If you are not a musician, listen to the recordings and make sure you can demonstrate the rhythms accurately.
- Decide how many, and which ones, you will teach to the class. Plan to teach younger, musically inexperienced students only a single rhythm. Plan to teach older, musically experienced students a variety of rhythms.

[15] http://musiced.nafme.org/resources/national-standards-for-music-education/
[16] http://www.socialstudies.org/standards/strands/

- Decide what will be used to play the rhythms. Some possibilities: They may use instruments they have made, assembled, (see above (Section 2.3: "Found Percussion")), or been given, or body percussion (see Percussion Fast and Cheap (Chapter 4)). Arrange for the desired instruments to be available during the class period, and plan for a noisy activity.
- Decide what the final performance experience will be. Some possibilities: They may play the rhythms alone, to accompany a recording, or to accompany a song that they sing (see below (Section 2.5: Songs with Calypso Rhythms)), either in class, or as part of a formal performance.

Procedure

1. If they are going to make their own percussion instruments (Section 2.3: "Found Percussion"), do that activity first.
2. Demonstrate one of the rhythms. Have the students echo the rhythm, either individually or as a group. (To help groups start together, count crisply and steadily, "One, two three, go...")
3. If the students learn the rhythm easily, introduce a new one.
4. If the students learn more than one rhythm easily and accurately, divide them into groups, assigning one rhythm to each group, and see if the class can play different rhythms simultaneously.
5. After an appropriate amount of practice time, have the class use the rhythms) to accompany a recording, or to accompany a song that they have learned. Younger or musically inexperienced students may need to be divided into "singers" and "rhythm section". If so, give each student a chance to do both.

Calypso Rhythms

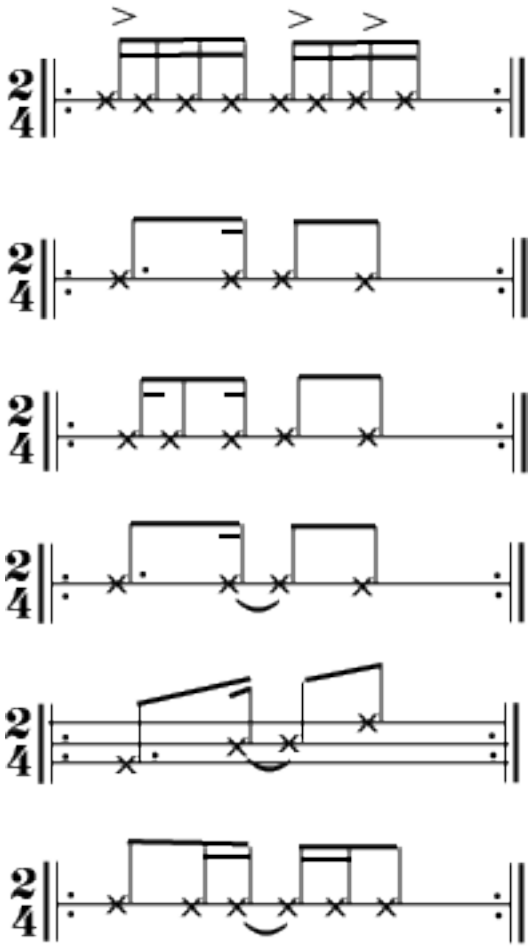

Figure 2.2: If you cannot read music rhythms, listen carefully to the rhythm recordings (If you can't read music, you may find these audio clips useful. A metronome in the background keeps the basic beat to help you get oriented:, p. 12) below, or try picking up some rhythms from your recordings. Only the fifth rhythm is written as a three-pitch rhythm, but if your students have all assembled three-pitch "instruments, you can alter any of the given rhythms to be multi-pitch.

If you can't read music, you may find these audio clips useful. A metronome in the background keeps the basic beat to help you get oriented:

- Rhythm 1 being played by shaking a plastic container (of the sort that margarine or sour cream are sold in) filled half-way with dry beans[17]

[17] See the file at <http://cnx.org/content/m11688/latest/Rhythm1.mp3>

- Rhythm 2 being played by hitting the bottom of an empty box of oats (the cylinder-shaped cardboard type of box)[18]
- Rhythm 3 being played by beating an empty cardboard tube (this one had had wrapping paper on it) against the heel of a hand.[19]
- Rhythm 4 being played by shaking a can of nuts.[20]
- Rhythm 5 being played by beating with a pen on the lids of three different sizes of empty plastic containers.[21]
- Rhythm 6 being played by tapping on the lid of a plastic container with dry beans in it, for a sort of snare effect.[22]

2.5 Songs with Calypso Rhythms

Goals and Standards

- **Goals** - Students will sing a song using calypso-style rhythms.
- **Objectives** - Students will learn either a traditional Caribbean tune or a tune that has calypso-style rhythms, and will sing it as a group.
- **Grade Level** - K-12 (adaptable)
- **Student Prerequisites** - none
- **Teacher Expertise** - The teacher or an assistant should be able both to lead the singing and to provide or lead the accompaniment. Note that a rhythm-only accompaniment, or rhythm and guitar, would be very appropriate. If you feel you cannot lead singing-with-percussion, you may simply have the students sing (and play) along with a recording.
- **Time Requirements** - Because of rhythmic complexity, it may take students longer to learn these tunes than standard children's songs.
- **Evaluation** - Evaluate students on participation as well as accurate pitch and rhythm.
- **Music Standards Addressed** - National Standards for Music Education[23] standards 1 (singing, alone and with others, a varied repertoire of music), and 9 (understanding music in relation to history and culture).
- **Other Subjects Addressed** - The activity also addresses National Council for the Social Studies[24] standard 1 (culture).

Materials and Preparation

- Choose a song or two with Calypso-type rhythms to teach to the class. You may want to use one of the songs you have found a recording of. Some songs that are traditionally associated with a calypso-style performance and are often found in songbooks and recordings for children include: "The Banana Boat Song (Day-O)", "Matilda", "Jamaica Farewell", "Sloop John B", "Tingalayo", and "Brown Girl in the Ring". Or you may use the songs provided here, Caroline[25] and Marianina[26]. Please note that these **are not** traditional Caribbean tunes; instead, so that you may feel free to copy them, they are tunes that are in the public domain[27] (in the U.S.) that have been altered slightly in order to give a strong Calypso feeling to the rhythms. If you can't open the PDFs, the songs are also available as figures below (Figure 2.3). (Readers who have access to a version of a genuine Caribbean tune that is clearly in the public domain are invited to contact the author.)

[18] See the file at <http://cnx.org/content/m11688/latest/Rhythm2.mp3>
[19] See the file at <http://cnx.org/content/m11688/latest/Rhythm3.mp3>
[20] See the file at <http://cnx.org/content/m11688/latest/Rhythm4.mp3>
[21] See the file at <http://cnx.org/content/m11688/latest/Rhythm5.mp3>
[22] See the file at <http://cnx.org/content/m11688/latest/Rhythm6.mp3>
[23] http://musiced.nafme.org/resources/national-standards-for-music-education/
[24] http://www.socialstudies.org/standards/strands/
[25] See the file at <http://cnx.org/content/m11688/latest/Caroline.pdf>
[26] See the file at <http://cnx.org/content/m11688/latest/Marianina.pdf>
[27] "Public Domain Music in Connexions Music Activities" <http://cnx.org/content/m22967/latest/#Caroline>

- Become familiar enough with the song(s) that you will be able to teach and lead them with confidence. If you need to hear the tunes in order to learn them, you can listen to Marianina[28] and Caroline[29].
- Arrange for accompaniment, by yourself, a friend, or the students themselves. Accompaniment is important to get a "calypso" sound. Piano is not ideal; but a keyboard that has a marimba or other percussion setting might do. Guitar, string bass, and/or winds (even recorders) in whatever combination is better. In either case, try to include at least some percussion; or you may consider a percussion-only accompaniment.
- Have enough copies available, as needed, of the words, music, and accompaniment parts.

Procedure

1. If they are going to make their own percussion instruments (Section 2.3: "Found Percussion"), do that activity first.
2. If students are providing the accompaniment, assign parts and rehearse the instrumentalists. The calypso rhythms (Section 2.4: Calypso Rhythms) above should work as accompaniment to just about any appropriate song you choose. Several short rehearsals usually work better than one long one.
3. Meanwhile, start teaching everyone the song. This may also take several sessions. You can listen here to the melodies of Caroline[30] and Marianina[31] if you need to.
4. Add the accompaniment to the singing for the final rehearsals. Even if the song is not a part of a concert, try to find an audience for a final "performance".

2.6 Writing Calypso Lyrics

Materials and Preparation

- If you'd like to emphasize the creative, improvisatory nature of real calypso, and your students are up for the challenge, consider having them write a bit of calypso themselves.
- Choose a simple tune that the students are familiar with, either a song that they have learned in class (see above (Section 2.5: Songs with Calypso Rhythms)), or one of the tunes that you have a recording of. Tunes associated with calypso are preferable, but not necessary.
- If the students do not already know the tune very well, play the recording for them often, or work with them on singing it.

Procedure

1. Remind the students that traditional calypso singers improvise the words of their songs. That means they make them up right on the spot, as they are singing, only a few minutes after they find out what their song is supposed to be about. At the big calypso contest in Trinidad every year, they often use a standard melody and make up funny, clever songs about something that has been in the news recently or something that they have noticed about life. The songs are often complaint or protest songs about things that they think should be changed.
2. Tell the students they do not have to make up the words as they are singing. They can have some time to think about it and make up the words and write them down. Tell them which tune you are going to use and remind them of it by playing it for them or letting them sing it together.
3. Ask the students to make up new words to go with the tune. Their song could be a humorous complaint about something they would like changed (longer recesses, or being allowed to have a dog, for example), or it can be a funny commentary on something that has happened recently, at school (a game they've learned in P.E.), at home ("what happened to my missing homework assignment"), or in the news (an

[28] See the file at <http://cnx.org/content/m11688/latest/Marianina.MID>
[29] See the file at <http://cnx.org/content/m11688/latest/Caroline.MID>
[30] See the file at <http://cnx.org/content/m11688/latest/Caroline.mid>
[31] See the file at <http://cnx.org/content/m11688/latest/Marianina.MID>

escape at the zoo, or a heavy snowfall, for example). If necessary, remind them that being mean or personal is not funny.
4. You may let them work in groups or alone.
5. If necessary, check the words of each song before you allow it to be performed.
6. Allow groups to perform their song together. Brave individuals can sing their songs by themselves, or you may make copies so that the class can sing each other's songs together.
7. If there are any particularly clever or humorous songs, you may want to consider sharing them in a performance for parents or for the school.

2.7 Listening to Calypso

Genuine calypso is not that popular outside the islands; you will probably not find it at your local library or CD store. But steelband music, or even just a calypso-style sound is easier to find.

Listening Suggestions

- Many children will already be familiar with the tunes "Under the Sea" and "Kiss the Girl" from Disney's *The Little Mermaid*.
- Some collections of songs for children (particularly multicultural collections) include calypso-sounding versions of songs like "Tingalayo", "Matilda", "The Banana Boat Song (Day-O)", and "Brown Girl in the Ring".
- Harry Belafonte's performances, while not genuine improvised calypso, contributed greatly to the first big craze for the calypso sound in the U.S. They are still relatively easy to find.
- Steelband albums marketed to tourists (for example *Steel Drum Classics "Best of the Best"*, produced by Barefoot Records and C and B Studio) are also not genuine calypso, but most of them do have the right sound.
- If you want some examples of the real thing, check with your favorite music recording distributors.

2.8 Songs to Use

These tunes are not from Trinidad. So that it is easy to copy and use them in the classroom and concerts, tunes that are in the public domain[32] (in the U.S.) have been altered slightly in order to give a strong Calypso feeling to the rhythms. (Readers who have access to a version of a genuine Caribbean tune that is clearly in the public domain are invited to contact the author.)

[32] "Public Domain Music in Connexions Music Activities" <http://cnx.org/content/m22967/latest/#Caroline>

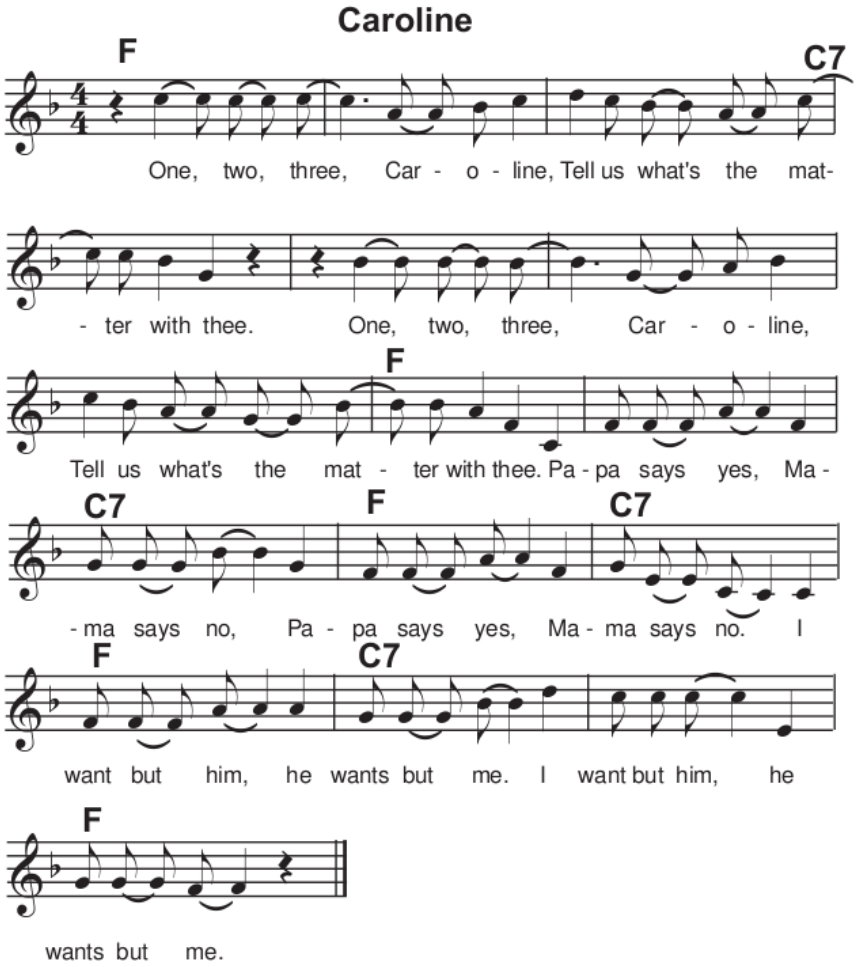
Caroline
F
C7
One, two, three, Car - o - line, Tell us what's the mat-
- ter with thee. One, two, three, Car - o - line,
F
Tell us what's the mat - ter with thee. Pa - pa says yes, Ma -
C7
F
C7
- ma says no, Pa - pa says yes, Ma - ma says no. I
F
C7
want but him, he wants but me. I want but him, he
F
wants but me.

Figure 2.3

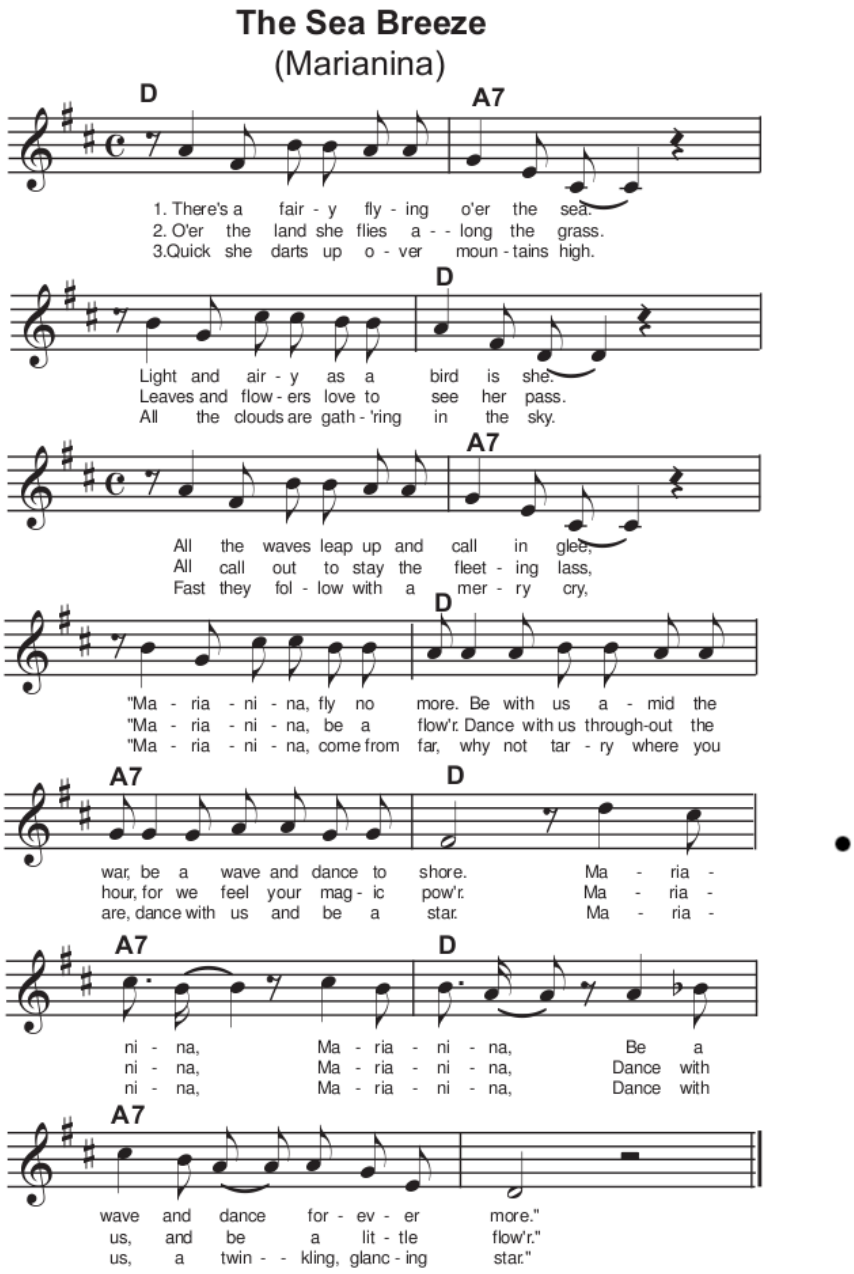
The Sea Breeze
(Marianina)
D
A7
1. There's a fair - y fly - ing o'er the sea.
2. O'er the land she flies a - - long the grass.
3.Quick she darts up o - ver moun - tains high.
D
Light and air - y as a bird is she.
Leaves and flow - ers love to see her pass.
All the clouds are gath - 'ring in the sky.
A7
All the waves leap up and call in glee,
All call out to stay the fleet - ing lass,
Fast they fol - low with a mer - ry cry,
D
"Ma - ria - ni - na, fly no more. Be with us a - mid the
"Ma - ria - ni - na, be a flow'r. Dance with us through-out the
"Ma - ria - ni - na, come from far, why not tar - ry where you
A7
D
war, be a wave and dance to shore. Ma - ria -
hour, for we feel your mag - ic pow'r. Ma - ria -
are, dance with us and be a star. Ma - ria -
A7
D
ni - na, Ma - ria - ni - na, Be a
ni - na, Ma - ria - ni - na, Dance with
ni - na, Ma - ria - ni - na, Dance with
A7
wave and dance for - ev - er more."
us, and be a lit - tle flow'r."
us, a twin - - kling, glanc - ing star."

Figure 2.4

Chapter 3

Improving Literacy through Communication Experiences[1]

MODULE OUTLINE

- The Problem
- Language in Trinidad and Tobago
- Students' views and the relationship between Language and Literacy
- What can a teacher do? Suggestions for using Communication experiences
- Activities
- References

INSTRUCTIONS FOR USE

1. Read the sections that follow and raise questions on them. 2. You may also suggest additional links or references that other users can explore. 3. How can the section on activities be expanded ? 4. Have you encountered a similar situation in your classroom? Describe it for other users.

THE PROBLEM

This module arose out of observations which the writer made during a Reading-Library project in Princes Town,Trinidad. One of the aims of the project was to explore for ways of teaching Reading and Writing to (creole-influenced) secondary school "problem or struggling readers". Many young people–especially males (age 14+), who are "struggling readers" leave the secondary school system in Trinidad and Tobago and are unable to communicate competently in speech and writing in International English. The project accommodated 50 students over a two year period. More than half were males(15+-17 years) from the Technical-Vocational Department of the school(Matilda Senior Secondary). They attended weekly 2-hour sessions in an after- school setting. Students were required to visit the Princes Town Public Library as a group for two to three hours a week to learn library skills.

BACKGROUND TO THE PROJECT

The project students were of Indo and African descent. They came from rural homes in the Princes Town-Moruga-New Grant area in South Trinidad.(See the map of Trinidad in the Links section.) Parents were mainly gardeners, skilled workers and labourers. In Matilda Senior Secondary, there were approximately 1000+ students and 100+ teachers. The students were prepared over a two-year period for the "sophisticated" Caribbean Examinations Council exams in academic and technical-vocational subjects. Reading some of the textbooks in this area was a students' nightmare.

During these sessions we (the tutors) attempted to build the "traditional" Language-experience shared/group stories using the students Creole-type English. Even though we explained to them why we were doing this, a small crisis occurred. A group of students objected "vociferously" to the use of Trinidadian

[1] This content is available online at <http://cnx.org/content/m14074/1.32/>.

Creole English to form the stories for their reading material. Of the 50 students, 75% of them preferred to use Standard/International English for their stories. The objection was so fierce (creole being referred to as "DAT"–that language) that the writing /composition of stories in Creole had to be abandoned. Instead , through informal interviews (chats) and classroom observations, the writer gained more insight into how the young people felt and thought about their Language. She thought of this as comprising their own unique "experience" i.e how they "saw" themselves communicating and using Language in their community. She attempted to use this to help them interact with and produce English texts in a meaningful way. What follows in the sections BELOW are suggestions for an approach to developing materials based on the students' communicative experience.

THE LANGUAGE SITUATION IN TRINIDAD AND TOBAGO: SCHOOL AND COMMUNITY

Winford James, a Caribbean Creole linguist has discussed in non-technical terms the crisis that exists in language use and communication in Trinidad and Tobago's classrooms today (see Links). This situation arises because Creole English is still regarded as a "broken" and "corrupt" form of English. He has also listed grammatical features of Trinidad and Tobago Creole English. Standard/International English is the language of upward social mobility, and of education. It is the language of success. The crisis deepens when one realizes that students' ability to understand spoken English far outweighs their ability to produce this in speech or writing, or for many students to read and understand texts written in English.

Many gifted speakers e.g. pastors, politicians and teachers can switch glibly between the two 'codes' when the occasion, hearers and purposes of speech require this. (Author's question: Is this a sign of "giftedness" which we have not yet recognized or capitalized on?) What is needed is an approach that will allow teachers to reflect on how they use language with creole-influenced students and for the latter to explore in a positive fashion the creative uses of Creole English.

Example 3.1

A SLICE FROM A GROUP INTERVIEW

The question for group discussion was: "How you feel about 'Trini talk' (Creole dialect)?" Here are some responses: Bill: "...is something I accept." Jarod: "Vulgar talk. I prefer polite language." Teacher: "What is polite language?" Lisa: "They speak that in Standard English." J: ...like when you talking to a girl. You don't talk harsh or obscene or ignorant." In the group's view the opposite of "talking polite" is "obscene". They agreed that Creole speech was not primarily for obscene purposes. It happens that way in the community.

STUDENTS' VIEWS OF THE RELATIONSHIP BETWEEN LANGUAGE AND LITERACY

Dell Hymes(1972) saidwhat we need to know about Language in the classroom is "the relationship between a grammar of English and the ways in which English is organized in use by teachers, students and the communities" they come from; the meaning of features ... such as intonation, tone, rhythm and style; the range of 'means of speech'..."conveying respect or disrespect, concern or indifference, intimacy or distance, seriousness or play...the appropriateness of different ways of speaking to different topics, speakers and situations." Ethnography is the recommended research method to uncover these "means".(in Cazden et al. pp xi-lvi.) During my informal chats with students, they "voluntarily" spoke about their language in this fashion–not in terms of grammatical structures, but in terms of "ways" that conveyed respect or disrespect, intimacy or distance, seriousness or play. Below are some points they made about Language and their earlier Literacy-learning.

STUDENT TALK SPECTRUM

At one end of the spectrum is "Polite" speech and at the other end "Ignorant" or disrespectful verbal behaviour. These categories for Language in the community, are those that the students themselves used. ("Polite"_____"Ignorant") In between the two points there are a range of speech acts that make up the spectrum. In the "polite" category the students placed those acts which they thought had "positive" value; in the "ignorant" category, they placed what they thought were negative or "senseless" uses of speech. All of this is as they know it in the community in which they live. They also considered as ranging between the two points, acts such as : Sweet talk or mamaguy, robber talk (bravado) and rude talk. In the two categories of positive and negative speech acts both Standard English and Trinidadian Creole are

used. But the latter is used more frequently for "ignorant", negative talk and this is accompanied by loud, vehement tones.

POLITE TALK: POSITIVE

- Old talk
- Sweet talk–talking in nice tones
- Boasting/Brag, robber talk–hyperbole
- Good talk/getting advice from adults
- Fatigue/picong/tease –insult
- Knowing bounds or limits, so as not to violate a person

IGNORANT TALK: NEGATIVE

- IGNORANT TALK: NEGATIVE
- Back chat or answer back
- Cuss–using obscene language
- Argument–loud talking
- Quarrel
- Mauvais langue, bad talk or gossip
- Rum talk, slack talk, old talk

OLD TALK

It appears that "old talk" for young as well as for older people, occurs in a relaxed environment among a group of friends or acquaintances. There is a freedom to participate here, to listen, to express one's views and to add humour, to perform, to sing, to chant and tell news and tales. Within an old talk session some disrespectful speech can occur. It is necessary to know bounds or limits and not hurt another person with too many "heavy" insults. All of the speech acts listed in the "ignorant" category were regarded by the students as "talking stupidness" and "making noise". The irony is that students(mainly males) admitted that they used obscene and loud violent speech when the occasion arose,to gain advantage over an opponent and to gain "respect" among their peers; although they strongly disapproved of this way of talking. They found it especially distasteful when used by females.

LITERACY LEARNING EXPERIENCES

Our students related that they learned Reading at home the hard and painful way, that is ,their lessons were accompanied by "licks" or physical punishment. "Making a mistake" while reading a passage orally is actively discouraged. These unpleasant experiences have a negative impact on students. Some parents may discourage their children from reading for pleasure because the material does not have a textbook format. Reading comics and magazines are discouraged. On the other hand, life is hard economically and parents/guardians cannot afford to buy "story books" for children. It is a struggle just to send them to school to get a certificate. The students' more pleasant Literacy memories were when they were praised by teachers for "doing good work" or for responding well in class.

WHAT A TEACHER CAN DO: SUGGESTIONS FOR CREATING MATERIALS

Since the society is one that is rich in oral traditions, and performance (called "playing")occurs naturally even for very young children, educators can make use of these verbal experiences and those expressed by the students, to structure interactions with texts. WHAT IS THE VALUE OF ALL THESE "MEANS" OF SPEECH FOR LITERACY LEARNING? Using mainly the positive elements of talk, and with the relaxation, drama, spontaneity and freedom of participation as in "old talk", they can learn switching behaviors and roles verbally (code-switching). This is important since it will build their linguistic security and confidence. They can also learn the appropriateness of the varieties in use in Trinidad and Tobago. The oral reading of English texts will form a part of this "playing" scenario as in Readers' Theatre. Discussions can take place in the vernacular as well as in English.

STUDENTS USING SPEECH ACTS TO CREATE THEIR OWN MATERIALS

Story telling is an art that can be practised profitably in speech and in writing. Here both Standard English and Trinidadian Creole English can be used. Art and Music are areas where much stimulus material can

be found to enhance presentations. "Knowing bounds or limits" and "Good talk" are themes which will inspire the writing and reading of their own "experiential" material. Teaching reading skills (ESPECIALLY DECODING) within this context should be more enjoyable. Teenaged males are particularly apt at "bragging", boastful or exaggerated speech with its repetitious quality. It is a part of their life style. This can be fine-tuned to capture its value as poetry. Not only this, but "old talk" participatory stances provide a clue for the structure and tone of in-class participation with the teacher controlling noise levels. There is a lot that teachers can do with their peers and their students to create "communication experience" schemes that provide enjoyment, the development of literacy, and strong community values.

SUGGESTED ACTIVITIES

(1) Write down your observations on how your students interact with books and other media. (2)What other "communication events" (e.g. "Good talk", "Knowing Bounds") can you think of as themes for student composition?(JOURNALING) **(3)With a group of your colleagues, compose a skit based on this theme i.e."Knowing Bounds" using code switching.(DRAMA) ** (4)Discuss how student discussions in International English differ from their participation in Creole-type English? (DISCUSSION) **(5)When reading material is based on their "communication" experiences" are they more eager to learn Reading skills than under normal classroom circumstances?(OBSERVATION and DISCUSSION) **(6)Write a piece of "robber talk" with your students and have them perform it. Be sure to use Standard English as well as Creole speech. (DRAMA and CREATIVE WRITING)

References:

Hymes, Dell (1972)"Introduction" in C.B.Cazden et al. Functions of Language in the Classroom. Columbia University Press,New York.

James, Winford (2002) "A Different, not an Incorrect Way of Speaking Pts. 1-7." Retrieved from http://trinicenter.com.

Joseph, Barbara (1978) A Study of the Relationships between Teacher Ways of Speaking and Student Responses. Ph.D Dissertation, University of Illinois at Urbara-Champaign.

Chapter 4

Percussion Fast and Cheap[1]

Making a musical instrument can be an exciting, rewarding, major project. But it doesn't have to be! Here are some suggestions for quick, cheap, and easy ways to make "musical instruments" for your family or students, for music classes, informal concerts, or just exploration. If you need some inspiration to get into the right spirit, I strongly recommend watching a video of a performance by "Stomp," for example Stomp Plungers[2] or Stomp Kitchen[3] . If you would like even more ideas on making your own instruments, The Mudcat Cafe[4] had many good, relatively easy suggestions as of this writing. In fact many books and websites include suggestions for homemade instruments, ranging from the very simple, to elaborate projects that can produce impressive instruments. The suggestions below fall in the "very simple" category.

Body Percussion

- Hand claps
- Hand rubs
- Finger snaps
- Foot stomps
- Foot shuffles
- Knee or thigh slaps
- Chest, tummy, and shoulder slaps
- Tongue clicks - see how many different sounds you can make this way!
- Finger flicks against a cheek - again, you can get very different sounds depending on what you are doing with your mouth

Drumsticks - Different drumsticks or beaters will give the same "instrument" many different sounds.

- Hands, fingers, thumbs
- Sticks, pens, pencils, rulers
- Short lengths of dowel or bamboo
- For a "brushed percussion" sound, use a kitchen basting brush, a scrubbing brush, a large, stiff paint brush, or wire brush
- Spoons

Beaters - Secure one of the following onto the end of a stick, a pencil, or a short length of 1/2" dowel.

[1] This content is available online at <http://cnx.org/content/m11889/1.11/>.
[2] http://www.youtube.com/watch?v=9mtdEH43r2s
[3] http://www.youtube.com/watch?v=XXD76CSpfc0
[4] http://www.mudcat.org/kids/

- A cork
- A large wooden bead
- Wrap many rubber bands around one end of the stick
- A rubber ball or "superball"
- Wrap one end of the stick, or wrap the bead or ball, with yarn or string
- Wrap felt or cloth around the end of the stick, or around the bead or ball

Drums - Real drums (instruments in which you beat on a thin, taut membrane) are quite sophisticated, difficult-to-construct instruments. Here are some easy stand-ins.

- Empty plastic milk jugs
- Upside-down pails, buckets, basins, or large cans
- Empty plastic tubs (like margarine or ice cream tubs) with the lids on - usually, the bigger the tub, the better.
- Lid or bottom (or both) of a large, empty coffee can
- A sheet of canvas, plastic, plastic wrap, plastic bag, rubber, wrapping paper, waxed paper, or poster board stretched very taut over the lip of a wooden bowl or a clay flowerpot, held in place by strong tape, heavy rubber bands, or strong cord. Most "drums" made in this way will be much more delicate than real drums.
- The bottom of an empty cylindrical oatmeal box
- Don't forget the traditional favorite: pots and pans
- Two of any of these in different sizes is a set of bongos

Fillers for Shakers - Different fillers can make very different sounds. Some will last better than others, and some will be messier to work with than others. You may want to seal your shakers once you have made them.

- Dry rice, noodles, or beans
- Unpopped popcorn
- Beads or sequins of any size (different sizes and kinds will make different sounds)
- Nuts or seeds
- Pebbles
- Sand or salt
- Bottle caps (If you can make holes in the bottle caps you can also string them together to make rattles or tambourines.)

Containers for shakers or maracas - To turn your shaker into a maraca, make a hole in the container, put a stick, pencil, or short length of 1/2" dowel into the hole, and tape it together.

- Paper bag or plastic bag
- Plastic Easter egg
- Empty plastic tubs with lids
- Dried gourd - very authentic and easy to grow in many places
- Hollow balls, for example tennis balls and plastic "softballs" - you'll have to make a hole in them to fill them; so you might as well make maracas
- Some seed pods come already filled with dried seeds and make great shakers
- Make your own with papier-mache.

Cymbals, Gongs, Bells and Triangles - The trick to getting a good sound out of these instruments is to let them vibrate freely. Don't touch the part that is supposed to "ring" with your fingers or anything soft. Hold it by a handle, hang it from a piece of string (make a hole in the object, or tape the string to it), or set it on a hard surface.

- Metal bowls that are a single curved surface (with no extra rim on the bottom to steady them) make great gongs. Set them on a hard surface. For a really cool effect, try swirling a very small amount of water in the bowl and strike it while the water is still swirling.
- A metal clothes hanger
- Trash can lids or pot lids
- Metal pie plate
- Hung flowerpots (use a soft beater)
- The chimes from a windchime
- Hammer large nails to different depths in a piece of lumber. Use another large nail as a beater to strike the nails in the wood.
- For home-made wood blocks or marimba, rest hardwood boards or pieces of bamboo of different lengths across two other pieces of lumber.
- String jingle bells or bottle caps on yarn, ribbon, or string to make hand, ankle, or wrist jingles.

Guiros and Washboards - These instruments are played by scraping a hard stick or beater across the corrugations.

- Heavy corrugated cardboard
- Wrap and glue heavy string around a short piece of 1" dowel.
- Cheese grater
- Saw, file, whittle, or cut notches into a piece of dowel or 1X1 lumber, or a thick stick. Notch spacing should be on the order of 1/8"-1/4".
- Sandpaper

Sticks and Clicks

- Stamping stick - A large, thick stick can be played by "stamping" it on the floor or in a bucket or basin.
- Claves - Cut two short lengths of dowel, lumber, or sticks (about 1" diameter, and about 6" long) to beat against each other. Smooth, hard wood gives the best sound. Make the sound more resonant by holding one clave cupped lightly in one hand while hitting it with the other.
- Play thick pieces of bamboo as you would claves, or hang them and play them like gongs.
- Pencils and wooden spoons can also be played like claves, but the sound will be much softer.
- Finger Castanets - tie one button onto the thumb, and another onto the middle finger. Or use the halves of a walnut shell or small metal jar lids
- Hand Castanets - loosely hold two spoons close together, back-to-back, in one hand, and swing them against the other hand to make them click.
- Shake keys on a key ring, or click them against the palm of the hand.

Not Percussion

- The easiest way to get a "string" sound is to stretch rubber bands between fingers, nails, or thumbtacks, or around tubs or boxes. An old-fashioned wash tub bass, made using a small metal tub, broom handle, and thick string, is fairly easy to construct.
- Blow across the lip of a glass jug or bottle.
- The easiest "wind instrument" to make is a kazoo, which you play by humming into it. Use a square of waxed paper or tissue paper, and either rubber-band it onto one end of a cardboard tube or fold it over the teeth of a small comb.
- You can make a simple "horn" or "trumpet" by taping a tin funnel to the end of a yard or two of garden hose, plastic pool tubing, or any other flexible tubing about 1" in diameter, but getting a sound out of your instrument may require a real mouthpiece and someone who knows how to play a brass instrument.

Looking for something to do with your percussion? Try:

- Simple Rhythm Activities[5]
- Talking Drums[6]
- Message Drums[7]
- Calypso and Found Percussion (Chapter 2)
- Conducting Activities[8]
- A Dynamics Activity[9]
- An Accent Activity[10]
- Sound and Music[11] has suggestions for very simple "instruments" that demonstrate principles of acoustics.

[5] "Simple Rhythm Activities" <http://cnx.org/content/m14258/latest/>
[6] "Talking Drums" <http://cnx.org/content/m11872/latest/>
[7] "Message Drums" <http://cnx.org/content/m11422/latest/>
[8] "Music Conducting: Classroom Activities" <http://cnx.org/content/m11031/latest/>
[9] "A Musical Dynamics Activity" <http://cnx.org/content/m13463/latest/>
[10] "A Musical Accent Activity" <http://cnx.org/content/m13462/latest/>
[11] "Sound and Music Activities" <http://cnx.org/content/m11063/latest/>

Chapter 5

Three Special Events in the History of Technology for Creating, Organizing, and Sharing Information[1]

5.1 Introduction

The development of technologies for encoding, storing, communicating, and exploiting information is a major feature in the history of the human species. Although this development has generally progressed smoothly over time, we feel it is valuable to identify three significant points of rapid change or "paradigm shifts." The first and possibly most revolutionary change was the invention of writing and its companion, literacy—the transition from an oral to a writing culture. The second was the invention of the printing press—the transition from hand-writing to the print culture.

We are now in the midst of a third transition to an electronic or digital culture. A convergence of several technologies has created new systems for dealing with information that are potentially as revolutionary as the development of literacy and the invention of the printing press. The base for this transition was established in the 1940s with the invention of the digital computer and the development of information theory. It was empowered by the invention of the transistor and integrated circuit and has blossomed thanks to the connectivity provided by the Internet and wireless technology and the storage provided by semiconductor, hard disk, and optical memory. The ever-increasing power of computer and communications hardware has been accompanied by ever more powerful software in the form of computer languages, operating systems, communication protocols, and search technologies.

It may be that most people feel they live in a time of major change, but history reveals that few actually do. One purpose of this paper is to examine earlier transitions in order to establish that we are indeed currently in another paradigm shift. A second purpose is to challenge the usual pattern of discovering after the fact that something big has happened and then determining how to mitigate the damage or inefficiencies that seem inevitably to ensue from major change and how to take advantage of the new opportunities and capabilities that are opened. For example, literacy was first an improvement and extension of the oral tradition; it subsequently created completely new systems for human uses of information. The printing press was first an improvement on the hand-written method of producing books; it then transformed the entire literate world and extended it to the masses. Today, the information age has produced a setting in which new information systems will transform not only the way we develop and exploit information, but also the way we interact with each other.

In this paper, we discuss in particular detail the educational publishing project, Connexions [2] , as an

[1] This content is available online at <http://cnx.org/content/m13676/1.1/>.
[2] http://cnx.org

example of a new technology that is both a natural evolution out of literacy and the printing press and a revolutionary change or paradigm shift that will be as disruptive as were writing and printing. The reason we do this in a historical context is to develop *Connexions* in a deliberate way, to achieve the positive goals we currently envisage for education as well as general information usage, and to use a strategy that will attempt to maximize the positive unintended consequences and minimize the negative ones. We try to take a "holistic" approach, taking into account what goes on (or can go on) in the human brain, what goes on (or can go on) in individuals or small groups, and what can go on in large societies or cultures.

Because this short paper covers a large span of time, ideas, and history that cannot be fully developed, we provide a fairly comprehensive set of references.

5.2 Literacy

> *The emergence of writing and literate activity some five thousand years ago transformed human life as profoundly as the earlier revolutions of intensive agriculture and language.* - ***[Goody]***[?]

The earliest uses of writing were to record lists of inventories and of sale and purchase transactions. Later, writing served as a means of helping the memory of storytellers in the oral tradition—writing was used as a prompt, not as part of an intellectual or creative activity. The people who read used writing to help them remember stories they and their audiences already knew. Only later did people read stories that writers had created, not merely recorded.

> *Without writing, the literate mind would not and could not think as it does, not only when engaged in writing but normally even when it is composing its thoughts in oral form. More than any other single invention, writing has transformed human consciousness.* - ***[Ong, p. 78]***[?]

Resistance to change occurred even in the earliest stages of literacy. As intellectuals, leaders, and thinkers considered the merits of this new "technology" called writing and literacy, they predicted its potential shortcomings. In the *Phaedrus*, Plato has Socrates say that writing is inhuman, a pretender, establishing "outside the mind what in reality can be only in the mind," then adding that "writing weakens the mind." Perhaps writing does weaken the memory, just as the calculator may weaken the memorized knowledge of the multiplication tables or speed-dial may reduce the memory of telephone numbers. Experience has demonstrated, however, that some very positive personal and societal effects accompanied these "weakenings."

Some of the dire predictions came true, of course, because they were grounded in what was known. The positive things produced by literacy generally outweighed the negative but were often not predictable because nothing like them had ever existed. Literacy created a new culture, but it also destroyed part of the old one, and that should be kept in mind. This example illustrates the *Law of Unintended Consequences*.

Many of the stories in the oral culture were structured in the style of poetry with rhyme, rhythm, and form to aid the memory. The telling of these stories was a performance by a highly skilled person with many tricks to help him/her remember and the ability to improvise and create on the fly. If a person in a story fell from favor, then they might disappear from the next telling. The story was "alive," continuously adapting and changing.

After writing came into general use, the culture of communication changed. Poetry evolved into a more compact and efficient prose, as memory aids were no longer needed. Similarly, the need to improvise vanished, and a larger group of people was able to tell (read) stories, with more "accuracy" but at a cost. The stories become frozen, perhaps even "dead." They became separated from the teller and the listener, with an independent existence in written form.

> *But there's a larger point here. Writing would also significantly add to the* ***power*** *[emphasis added] of the word, and in so doing it would change the nature of what could be thought.* - ***[Stephens, p. 17]***[?]

The earliest writing used symbols that directly depicted the object or idea being described. In the west, this "short hand" evolved into phonetic symbols representing sounds in speech rather than the objects themselves. This early writing was only loosely tied to language, but the arrangement changed to a tight connection when the phonetic alphabet evolved and people were able to read aloud.

The pictorial writing systems required an enormous number of symbols, but the change to a phonetic system reduced the number, similar to today's western alphabets. The number of phonetic symbols, in fact, was initially too small since the alphabet had no vowels, only consonants. Words and sentences were not separated, and there were no paragraphs or chapters. Like shorthand, the written language was a prompt, enabling the reader to "know" what had been written (probably because he already knew it). Indeed, a fully phonetic alphabet, the separation of words, and the development of punctuation, all of which enabled silent reading (which occurred around the 1500s), were major advances in the technology of writing and the book. This was the second phase in the development of writing, where unanticipated developments were changing everything.

> *As the change toward literacy has occurred, it has produced changes in the configuration of human society. . . . An act of* ***vision*** *was offered in place of an act of* ***hearing*** *as the means of communication, and as the means of storing communication. The adjustment that it caused was in part social, but the major effect was felt in the mind and the way the mind thinks as it speaks. (Emphasis added) -* ***[Havelock, p. 100]***[?]

In addition to much-improved efficiency, the development of writing techniques brought along other ideas and changes.

> *The printed text is supposed to represent the works of an author in definitive or 'final' form. For print is comfortable only with finality. . . . Print culture of itself has a different mindset. It tends to feel a work as "closed," set off from other works, a unit in itself. Print culture gave birth to the romantic notions of "originality" and "creativity," which set apart an individual work from other works even more, seeing its origins and meaning as independent of outside influence, at least ideally. -* ***[Ong, pp. 132-133]***[?]

A supportive commercial enterprise accompanied the development of literacy. At first, manuscripts were written from the orally composed stories. Perhaps Homer's epic writings came into being this way. Later, manuscripts were composed directly in writing, never having been uttered. An industry developed that would copy these "originals" under commission, as a tailor sews suits. After a literate public developed, the scribes would make several copies of a manuscript and then offer them for sale much as a clothing store operates now. Along with this commercial side, a legal device came into being. If money could be made, the question of ownership arose and the concept of the "right to copy" or the "copyright" was invented.

If we step back and look at this comparison of the oral and written cultures, we see still another interesting and pertinent dimension that has to do with physiology. If I tell you a story, then I transfer a piece of information from my brain into yours. On the other hand, if I write that story down on paper and you read it, then I have also transferred the piece of information from my brain into yours, but it has gone through a quite different part of the brain and nervous system. In the first case, a vocal and auditory process occurred. A blind person could participate. In the second case, an image and visual process occurred, and a deaf person could participate. In the first case, a person could address a crowd and a certain efficiency could be achieved, but in the second case, a much larger audience could be reached and spread over time as well as space.

Technology has continued to expand both the means of communication, with the telephone, radio, and tape recorder extending the vocal/auditory process and the telegraph, fax, television, and email extending the visual process. Is this what the Sumerians and Greeks, the inventors of writing and the alphabet, had in mind? Surely not, but some unintended consequences produce phenomenally positive ends.

In this section, we have tried to indicate the incredible effects that literacy has had on human culture. The point is that some of the predicted negative effects did occur and many of the positive effects that occurred were not predicted. This was true because the negative effects were mainly the destruction of something that

was known. The positive effects, however, involved the creation of things that were completely unknown in the preliterate culture. Some of those positive effects were initially seen as negative. These factors need to be very carefully considered as we try to predict the future of the next phase of information systems. Indeed, the negative "unintended consequence" is the effect that we wish to understand and minimize.

Reading and writing seem to fit the definition of **technology** quite well and can be studied as such. For greater depth and more detail on literacy and writing, one should read the works of Parry, Ong, Havelock, and Goody. For an example of how writing and literacy are viewed as technology, see Goody's Chapter 8: "Technologies of the Intellect: Writing and the Written Word."

5.3 The Book and the Printing Press

> *About the year 1450 some rather unusual "manuscripts" made their appearance in the northern regions of Western Europe. Although not very different in appearance from traditional manuscripts, they were "impressed" on paper, sometimes on vellum, with the mechanical aid of a printing press which used moveable type. - **[Febvre and Martin, p. 9]***[?]

Gutenberg's invention of the movable-type printing press in the fifteenth century is widely considered, along with gunpowder and the compass, one of the three most influential inventions in history. This is a truly remarkable statement since the first printed books looked fairly similar to the hand-written books that preceded them. Nevertheless, the enormously improved efficiency and accuracy of machine-printed books had a powerful effect that continued to develop for centuries. As with other "disruptive technologies," the first phase of influence was simply to do the old job better. Then, in the second phase, the existence of large numbers of inexpensive books changed the way education and communication took place, the way material was authored and, in the process, invented a new tool for mass entertainment and created a commercial commodity.

> *To bring the problem into a sharper focus: the advent of printing, we are told, was the most important event "in the cultural history of mankind;" it "brought about the most radical transformation in the conditions of intellectual life in the history of Western civilization." - **[Eisenstein, p. 115]*** [?]

This transformation occurred not only in the life of the elite, but in all of society. The inventions of literacy and the printing press brought to the masses what previously had been reserved for the privileged and, before that, the priest and the scholar. They brought a new and different dimension to the democratic process, the educational enterprise, and the religious life of the society. It is no coincidence that the Reformation, a democratization of Christian religious life, also began in Germany, within a century of Gutenberg's invention. What was the obvious book to be printed by this new technology? The Bible. What was the obvious result? Readers—priests, educated laymen, even the literate poor—might read and interpret for themselves. Revolution. Certainly an **unintended consequence** but, perhaps with more thought, a predictable one.

The current paper book is the result of technical evolution over thousands of years. It is now a mature technology and is being challenged by modern digital technologies. Stone, bone, clay, papyrus, scrolls, codex, ink, paper, and the printing press were all steps in its evolution. A parallel development of a commercial system supported the creation and marketing of books, resulting in the current system of authors, editors, publishers, book stores, and readers. We are now seeing the beginning of the effects of modern digital technology, mass storage technology, and Internet communications.

Because the printing press had a much greater impact than was anticipated, we may ask if the use of electronic or digital information—cheaper to produce, easier to author, easier to alter, and almost free to distribute—will have a similar powerful, unexpected effect. Of course it will.

5.4 Hypertext and the World Wide Web

> *The most remarkable species of book to punctuate the equilibrium of the twentieth century was*

the entirely new literary form of hypertext. - ***[Kilgour, p. 155]***[?]

The modern concept of hypertext seems to have originated with the 1945 *Atlantic Monthly* article by Vannevar Bush, who used his ideas of how the mind works "by associations" to propose the **memex**, a forerunner to linked hypertext.

In the early 1960s, after reading Bush's article, Douglas Engelbart started the Augmentation Research Center (ARC) at the Stanford Research Institute. The ARC used a precursor of hypertext in what it called the *On-Line System*. Engelbart talked about asynchronous collaboration among teams distributed geographically, about the use of computers to augment human intellect, and about the idea of "bootstrapping" as an iterative and coadaptive learning processes or a feedback system. All of these ideas show up in *Connexions*, to be described later.

The actual term, "hypertext," was coined around 1965 by Ted Nelson, who developed the idea in a complex system he called Xanadu.

> *By "hypertext," I mean non-sequential writing–text that branches and allows choices to the reader, best read at an interactive screen. As popularly conceived, this is a series of text chunks connected by links which offer the reader different pathways.* - ***[Nelson 1965]***[?]

A form of hypertext has come into common use on the Internet and World Wide Web (WWW) with the hypertext markup language (HTML), the hypertext transfer protocol (HTTP), and the browser, *Mosaic*, which evolved into the familiar *Firefox, Netscape, Internet Explorer*, and other browsers. HTML enables the linking of a point in a text to another point in that text or another text. This linking is created by the author to allow a new control by the reader.

This system, which breaks up the usual linear or sequential structure of the traditional book so that readers can easily branch to related topics, may be more compatible with the way people think and learn (that is what Bush and Engelbart had in mind). The traditional book tries to bring this ability with the use of page references, footnotes, endnotes, sidebars, and other print techniques. The table of contents and index are attempts to create a more flexible structure. In a way, these structures are precursors to hypertext and the digital search engines.

Ted Nelson talks about the free-flowing live documents on the network being subject to constant new use and linkage, and those new links continually becoming interactively available. Any detached copy someone keeps is frozen and dead, lacking access to the new linkage. This is an interesting response to Plato's concern about the harmful effect of literacy and writing. If literacy and writing "killed" the text, then perhaps hypertext brings it back to life in an even more flexible form. Indeed, it may create a format that we cannot imagine now.

Hypertext would not have achieved its broad impact without the development of the modern Internet, WWW, and the high-density storage of hard disks and CD-ROMs. Again we have an interesting case of unintended consequences, with the seminal ARPAnet evolving from a research and defense tool into the popular business, educational, communication, and personal information lifeline it has become today.

HTML, the hypertext markup language, not only implements linking, but also allows control of the display of material. Unfortunately, it does not do much to encode what the material **means**. A second-generation language called the **extensible markup language** (XML) is just now becoming available; it can distinguish between form and content. This ability will be crucial to bringing a new information system into being.

As writing and literacy extended human memory and accuracy, hypertext extends the way the human mind connects and relates ideas and information in text. It is a way to more directly implement metaphor, analogies, and multidimensional relationships. The human mind contains ideas and stories that traditional text and books capture efficiently and effectively. The connections and relationships of ideas and the dynamic nature of thinking are crudely captured by traditional text, but both are better implemented and extended by the linking and tagging in hypertext. This opens a rich set of educational and perhaps artistic possibilities, with the combination of text and hypertext providing a more accurate match to the way the mind works (or might evolve into working).

> *"In an extreme view, the world can be seen as only connections, nothing else. We think of a dictionary as the repository of meaning, but it defines words only in terms of other words. I liked the idea that a piece of information is really defined only by what it's related to, and how it's related. ... The structure is everything."* - ***[Berners-Lee, p. 12]***[?]

A deep understanding of this new hypermedia environment is much more difficult than looking back at literacy or the printing press, because we are in the middle of creating it. That, of course, is the point of this article. Read the material by and about Bush, Engelbart, Nelson, Levy, Novak, Berners-Lee, and Landow, then use a browser on the web to see how hypertext changes reading and the use of information. Less positive interpretations of some of the unintended consequences are presented by Birkerts and Postman.

5.5 The Digital Commons

Digital computation, storage, and communication technology have enabled entirely new ways to create, organize, and exploit information. For example, as we have seen, hypertext breaks apart the linear sequential ordering of the book, giving both the author and the reader new possibilities, greater flexibilities, and more control. But merely publishing a book as a set of hypertext web pages is only the first incremental step along the way of the third transition. In this period, we will see all modes of interaction with information changed, in particular not just how humans interact with information but also how they interact with each other.

The print age has been based on paper books that are loosely inter-connected through a system of citations and quotations. Books themselves are organized into libraries, the "cathedrals of learning" if you will. Consider carefully the role that people play in this age. Most books are written by a single author or a small team, and authors are only loosely connected together into communities. A book's readers are generally completely disconnected from one another. Moreover, the time scale of writing, editing, peer-reviewing, an updating is on the time-scale of years. Since time costs money, books are expensive. In summary, we can describe the print age as loosely connected, slow-paced, and costly.

The efficient one-to-many, one-to-one, and many-to-many communication links provided by the Internet and WWW are reinventing the book into a new information system that is tightly interconnected, fast-paced, and inexpensive. The core concept is the idea of a **digital commons**, a vast repository of richly inter-linked hypertext materials that is woven and tended by a multitude of authors worldwide. In the digital commons, authors can form **communities** to collaborate and continuously improve, re-use, and re-organize the material in the commons. The community culture created by this system could have some of the attributes of the "collective intelligence" of Levy, Engelbart, Licklider, Barabási, Weinberger, and others where the resulting whole is greater than the sum of its parts. The readers of the commons are also more tightly connected by communications technologies (email, discussion forums, chat rooms, blogs, wikis, and so on). If current libraries can be compared to Eric Raymond's cathedrals, then the future digital commons will be like a bazaar.

> *"... humanity has a chance to reclaim its future. Not by placing its destiny in the hands of some so-called intelligent mechanism, but by systematically producing the tools that will enable it to shape itself into intelligent communities, capable of negotiating the stormy seas of change."* - ***[Levy p. xxv]*** [?]

In contrast to traditional libraries, the digital commons is global and under continual, 24/7 expansion and revision. And, in sharp contrast to the "tragedy of the commons" often cited in the literature, this is a commons without a necessary tragedy; indeed, as its use grows, *Metcalfe's Law* (which holds that the usefulness, or utility, of a network is proportional to the square of the number of users) will amplify its effect. The digital commons will provide new opportunities for writing, scholarship, reading, and learning.

> *... primary and secondary materials will interact more powerfully than before as both are online side by side. Scholarly discussions will quote the original by pointing to it, and leave the reader*

> *to explore the original context, not just the few words or sentences most apposite. Conversely, texts will acquire structured commentaries not by single hands but organized out of the work of many.* - ***[O'Donnell, pp. 132-4]***[?]

Indeed, this new format turns out to be similar to some of the modern (or postmodern) ideas in literary, social, and philosophical theory. Landow, Haraway, Hayles, and others have written on this.

Two pillars support the emerging digital commons. The first is a **common technology framework** for sharing information provided by hypertext, HTML, XML, and the WWW. The second is a **common legal framework** for sharing information provided by open-access licenses.

Open-access takes its inspiration from the free software and open-source software movements, in which communities of programmers create software such as the Linux operating system, Apache web server, and Mozilla family of browsers and mail tools. When a community is successful, a high-quality piece of work emerges from the open development process, thanks to many hands to do the work, many eyes to conduct a constant peer review, and pride of authorship and contributions to the community.

> *The most important feature of Linux, however, was not technical but sociological. Until the Linux development, everyone believed that any software as complex as an operating system had to be developed in a carefully coordinated way by a relatively small, tightly-knit group of people. ... Linux evolved in a completely different way. From nearly the beginning, it was rather casually hacked on by huge numbers of volunteers coordinating only through the Internet. Quality was maintained not by rigid standards or autocracy but by the naively simple strategy of releasing every week and getting feedback from hundreds of users within days, creating a sort of rapid Darwinian selection on the mutations introduced by developers. To the amazement of almost everyone, this worked quite well. ... I expect the open-source movement to have essentially won its point about software within three to five years (that is, by 2003-05). ... At that point it will become more appropriate to try to leverage open-source insights in wider domains.* - ***[Raymond p. 194]*** [?]

In addition to a common framework for developing the software, what makes open-source software projects work is a common legal vocabulary for sharing software called an open-source license. The primal example is the *General Public License* (GPL) developed by Richard Stallman for the GNU project. Without the open-source license enabling anyone to use and modify the software, it would be impossible to build a community of programmers. For more, see the papers by Stallman, Raymond, Boyle, Lessig, and others.

To power the digital commons, a number of open-content licenses have been developed for information resources, the most applicable to our needs being the *Creative Commons* license. An open-licensed digital commons turns the current intellectual property regime of publishing on its head. Now, an author can retain their copyright to their work and license it non-exclusively for use in the digital commons via a Creative Commons license. This allows other authors to adapt, improve, or otherwise contribute to the work (for example, fixing broken hyperlinks that plague the WWW today). This can be carried to the extreme with an open-licensed wiki system. For example, in Wikipedia (wikipedia.org) [3] anyone in the world can contribute and edit encyclopedia entries with a click in their browser.

5.6 Connexions: A Digital Commons for Teaching and Learning

> *The real roles of the professor in an information-rich world will be not to provide information but to advise, guide, and encourage students wading through the deep waters of the information flood. Professors in this environment will thrive as mentors, tutors, backseat drivers, and coaches.* - ***[O'Donnell, p. 156]*** [?]

[3] http://wikipedia.org

To make things concrete, we now describe one particular experiment in this third wave of information technology targeted at education. Connexions (http://www.cnx.org[4]) is so-called because it aims to connect information and ideas within the commons (using hypertext) and also to connect the people using the system into communities. Connexions is inter-disciplinary, inter-institutional and involves both professionals and amateurs, as well as professors, teachers, students, and the public.

Connexions is a digital commons of scholarly materials plus an open-source software toolkit to help authors publish and collaborate, instructors rapidly build and share custom courses, and learners explore the links among concepts, courses, and disciplines. The design of Connexions is based on a set of intuitions that are shared by a remarkably wide range of academics: that knowledge should be free and open to use and re-use; that collaboration should be easier, not harder; that people should get credit and kudos for contributing to research and education; and that concepts and ideas are linked in unusual and surprising ways and not just the simple linear forms that textbooks present.

Connexions creates "modules" of information—smallish documents intended to communicate one concept, one procedure, one set of questions about something. String a bunch of modules together, and you have a course, or weave a curriculum entirely of your choosing. Connexions directly challenges the current notion of a "textbook" by exploding it and asking different people to create its parts in a semi-structured but re-configurable manner, rather than having a single Maestro do it all and take all the credit.

The hallmarks of Connexions include:

- **collaborative workspaces** that support collaboration and community building throughout the authoring, course-building, and learning processes;
- **semantic content markup** in XML hypertext that provides a common technology framework for sharing and re-using materials;
- **Creative Commons licenses** that provide a common legal framework for using, modifying, and disseminating the content;
- content **quality assessment** using distributed, post-publication peer review;
- an attribution system to give credit to original authors and to those who add value.

Connexions is an inter-institutional endeavor. For example, a growing global community of electrical engineering faculty and researchers in the area of digital signal processing (DSP) from Rice University, University of Illinois, Georgia Tech, the University of Michigan, the Ohio State University, Polytechnic University, Cambridge University, Technical University of Norway, and the company National Instruments is collaboratively developing a free, open-access DSP course in Connexions.

Note that the Connexions system can be used in a distance education system, but that is not its main purpose. It is an information system that can be used instead of or in addition to a traditional book in a traditional class. It can also be used for self-study, distance education, continuing studies, home schooling, industrial training, or professional credentialing. The basic philosophy is completely independent of level or discipline. It should be ideal for K-12, college, or graduate school. It will fit humanities, social sciences, natural sciences, engineering, architecture, music, business, medicine, law, or art history. It should interface naturally with the modern digital library. It will certainly be multi-media and allow experiments and demonstrations to be run and "discovery based learning", "problem-solving based learning", and "concept based learning" to take place.

Connexions can make high quality material available to all students and all educational activities all over the world with fairly inexpensive equipment. If developed properly, it can significantly reduce the "digital divide" that separates the information "haves" from the "have nots." Because it is platform or hardware independent, it can be used with many new projects to provide internet access more broadly.

The third transition that we are in the middle of just now will probably have two phases, much as most disruptive technologies. As we move from the traditional printed book, lecture, laboratory, and library paradigm to an electronic and digital system using the web, internet, and modern magnetic and optical storage devices, the first phase will do the old job better. We will put our courses on the web. We will put our books on the web. We will scan books and build digital libraries. But, most of this material was

[4] http://www.cnx.org/

written for traditional publication and use. It was written by authors with traditional skills and traditional mind-sets but using modern tools and media.

The second phase of this transition will use the full power of semantic tagging, metadata, and XML together with a better understanding of how humans process information in their brains and how we all learn. In the first phase we take material that was created to be used in traditional media and put it "on the web". We put the book that we were writing into Connexions. We scan books and put the digital information into the digital library. In the second phase we will create information packets specifically for Connexions, XML, or the Semantic Web. We will have a mixture of text, virtual labs, demonstrations, etc. that cause us to teach and our students to learn in a different way. That will, in turn, cause us to create material in a different fashion.

In the transition from an oral tradition to literacy and a written tradition, the first phase was just a better version of the old. Authors wrote down the stories that they earlier told. Readers read aloud to "hear" the stories as they had before. As the technology of writing developed, people learned to read silently and authors wrote to be read, not heard.

We currently seem to be in the middle of the first phase of our modern transition, but are beginning to see an image of the second. Although there is a great temptation to jump to the end, we will probably need the experiences and experiments of the first phase to best develop the second phase and minimize the negative "unintended consequences". We will need to put our books and articles into *Connexions* and scan our traditional library books to create our digital library before we will know how to create material specifically for digital use.

5.7 Conclusions

Daniel Headrick argues "that the information revolution in which we live is the result of a cultural change that began roughly three centuries ago, a change as important as the political and industrial revolutions for which the eighteenth and early nineteenth centuries are so well known." We are now seeing this revolution reach a climax.

From our studying and reading about writing, literacy, and the printing press, we have concluded that we are indeed in the midst of a third major information transition that will be as important and startling as the first two. We want to create a system or a setting in which this new world can flourish and be a positive contribution to humanity. We want it to be as close to the way the mind works as possible, while allowing future extensions beyond what we can now predict regarding new theories of learning, teaching, and discovery, as well as new information technologies.

The *Connexions* Project has been designed to be sufficiently open and flexible to allow for these future unknowns, yet specific enough to have standards for current implementation. The ability of XML to control both form and content is essential to the spirit and future of Connexions. The modular format with hypertext linking seems to fit the way the mind works, yet allows for future discoveries in cognitive science and learning theory. The digital commons will allow input from top experts in any field and a post-review system will allow identifying the best material without restricting input.

The current classroom lecture method used in schools, colleges, and training programs results in students' having a difficult transition to self-learning. The use of Connexions could greatly reduce that transition. It could be a true life-long learning system. This single system can be used for teaching, learning, and discovery and be open to the invention of unpredictable new technologies. If these statements are true, we will indeed have a third transition as important as those created by writing and the printing press.

5.8 Acknowledgements

For opening the doors to the histories of writing and books, we thank Profs. Albert van Helden, Anthony Gorry, and Werner Kelber of Rice University along with the authors whose books are listed below. For the development of Connexions, we thank Don Johnson, Bill Wilson, Chris Kelty, Brent Hendricks, Ross

Reedstrom, Douglas Jones, and the staff of Connexions. For organizational planning, leadership, and financial support, we thank Robert Maxfield, William Sick, Burton McMurtry, Michael Stewart, Tom and Nancy Eubank, Chuck Henry, Geneva Henry, Gil Whitaker, Katie Cervenka, Malcolm Gillis, the administration of Rice University, and the Hewlett Foundation. For help in rewriting this paper, we thank several friends and colleagues. We also acknowledge and thank our collaborators at other universities and foundations in the US and all over the world and acknowledge our debt to the many other similar and complimentary projects.

5.9 All References

For technical reasons, there are two reference sections in this paper. This first section is an extended reference list in text format in the approximate order in which they are relevant in the paper. The quoted references within the paper are repeated below this list under "References" so that links from the quotes to the references work.

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Chapter 6

Some reflections on calypso, pan and school literacy[1]

Of Literacy, Literacies and School Literacy

Tim Shahanan[2], Director of the Center for Literacy (UIC) wrote "The theory is that youth now confronts many literacies in their daily lives, that these literacies are cognitively demanding, and multimodal (including reading film, television, Gangsta Rap, web pages, and other non-reading literacy). It is often claimed that these literacies are cognitively more demanding than the ones taught in school. So if kids are learning and using these challenging literacies on their own, why so much trouble advancing academically in school? This problem is attributed to the cultural mismatch between school literacy and the literacy of youth culture that has alienated kids from the mainstream. In other words, kids come to value the literacy they have learned on their own because it buys them entrée into the real world, and so they reject and refuse to learn the literacy of school. Some scholars want to celebrate these new literacies (go video games), while others hope to turn these insights into teaching nostrums: such as the idea that we should teach popular culture; the more we focus on Hip Hop the better the kids will recognized the relevance of school literacy. There are some problems with these theories, though I certainly think it is a good idea to monitor the use of literacy in society, including within youth culture. One basic flaw is the claim that the skills students use when playing video games are commensurate with those evident in reading. We don't have good measures of cognitive equivalence across tasks, so there just isn't convincing support for the idea that understanding the conflict in a video war is equal to understanding the conflicts in novel like, The Scarlet Letter."

On the educational value of Calypso and Carnival

Lord Kitchener, a master calypsonian, epitomised the fusion/relationship between pan and calypso. The Mighty Chalkdust on the other hand,is the scholar-calypsonian. He is the authority on the relationship between calypso, pan, carnival and education. He strongly believes that carnival is an educational tool in itself and is valuable for capturing the imaginations of our school-age population. Because of culture and history, carnival [3] , and calypso [4] and steelband music [5] are inextricably linked. "Asked whether, because of its historical and cultural heritage, he would recommend the teaching of the calypso art form in schools, Dr. Liverpool replied: 'That's my task in the Caribbean. I am trying to change the Caribbean...Our teachers do not use culture to teach our students. One of the things in which we have failed in the Caribbean, is to bring the culture into the education process... Teachers can't see culture as a tool for education, a tool to read and to write. For historical days, there is a calypso; for every value there is a calypso. Whether it is biology, other science or social studies, there are calypsos for everything, but we don't carry them in the classroom because the teachers don't teach them. 'What we need to do, is to bring the calypso in the classroom not

[1] This content is available online at <http://cnx.org/content/m18381/1.2/>.
[2] See the file at <http://cnx.org/content/m18381/latest/http>
[3] http://www.gotrinidadandtobago.com/trinidad/carnival.php
[4] http://repository.upenn.edu/dissertations/AAI6703066/
[5] http://www.pan-jumbie.com/

just singing, composing and teaching music; but to teach lessons of history and lessons of sociology; the calypso has not reached our children yet because there are no teachers.'" The Anguillan 19.05.2006 [6]

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    PHOENIX IN THE ASHES
ADULT LITERACY IN THE COMMONWEALTH CARIBBEAN
Zellynne Jennings  UNESCO 1999.  (see Desktop)

see for definitions of Literacy and
school Literacy expectations. What are these?

  Link to Communications: Improving
communications module thematically.
```

Calypsonians and pan: Kitchener

" There are many competitions held during the Trinidad Carnival. One is for the "Road March King" . The Road March is the song created that year that is most often played by the masquerade bands, the steel bands, the brass bands and the DJs on Carnival day. Kitch won that title 10 times with 10 great tunes. Though Kitch never had formal musical trining, he was vital in fusing the two most popular musical forms in Trinidad-calypso and steel pan. He composed the first calypso played by a steelband orchestra The Beat of the Steelband, in 1944. He was closely associated with the steelpan movement after that. His tunes were always the most played by the steelbands for what is called "Panorama" Panorama is the largest steelband competition in the world. More than 50 bands, each band with up to 100 players, compete to win the Panorama. Kitch's compostions have won over 18 panorama titles. Kitch wrote over 1,000 calypsoes in his 77 years of life. Altho' I haven't heard all of them each one I do know is timeless, sweet, satirical, beautiful and/or political. I know his songs will make him eternal for all his many fans. Whatever he sang about –it makes you fell so good. His topics ranged from the cold weather in England, where he lived for 15 years, to the West Indies first cricket victory of Englanad. Kitch has composed calypsoes that cover every imaginable human experience. Kitch is a brilliant expressionist. Dr. Hollis Liverpool once observed that "one of Kitchener's many strengths is his ability to present clean smut in a way that even a priest would want to listen." He sang about backyard parties, moko jumbies and his favorite topic-the steelpan. He loved pan music and he championed it for his people. His last hit song was Pan Birthday. He sang "everyone celebrate, before it's to late". Cathy George 2005 [7]

Dr. Leroy Calliste: The Black Stalin

(Develop this section on Stalin

[6] http://www.anguillaguide.com/article/view/3562/1/140

[7] http://www.paninstitute.com/page.php?6

```
        CLASS PRESENTATION TOPICS:

1. Gather sample lyrics from the calypsoes of
Lord Kitchener, listen to  them, sing them and
analyze their "pan" content.
  2.  Compose a similar calypso.
  3. What does Chalkdust have to say about
the value of Carnival in Education?
  (Use photographs and other classroom aids to
 enhance your presentation.)

  4.  How does calypso, pan and Carnival
complement one another?
  5.  Is pan relegated only to Panorama?
  6.  Is it becoming"extinct" in Carnival?
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Figure 6.1

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Index of Keywords and Terms

Keywords are listed by the section with that keyword (page numbers are in parentheses). Keywords do not necessarily appear in the text of the page. They are merely associated with that section. *Ex.* apples, § 1.1 (1) **Terms** are referenced by the page they appear on. *Ex.* apples, 1

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"Pan" and Literacy for Trinidad and Tobago Teachers

These modules about "PAN"–short for "steelpan" are directly related to the attempt to find ways in the culture and speech of young people in Trinidad and Tobago to improve their school Literacy. The collection is for the teachers-to-be of these young persons especially those who are at risk. Many of them reside in the still poor areas where the steelband originated. Music (and percussion music at that) is another gateway to Literacy. It entails composing,creating, reading, listening,speaking, writing and co-operative learning. Local teachers can make adaptations from the very useful modules that are included on teaching (young children) about the pan, even though these are written from a U. S. perspective. They can also involve the resource persons ("panmen") who visit their schools to work exclusively with the school steelband in more related whole-class activities.

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