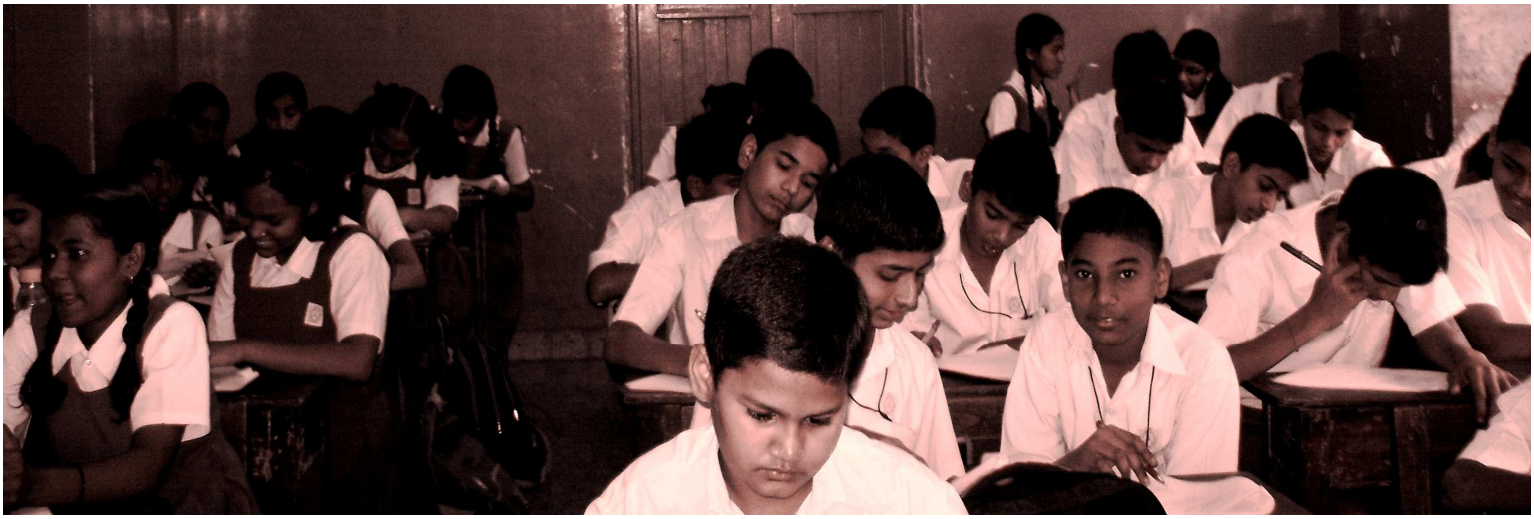
मराठी भाषा / English language

Impact of language barriers on sustainability awareness and related (sustainable) issues amongst the youth of Navi Mumbai



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Synopsis:

Using a bottom-up approach this paper attempts to investigate why language barriers impose themselves within the space of sustainability awareness, and when they do; what their impacts are upon students. A small comparative study is done between two groups of students who are taught the same content in the same school albeit in English and Marathi, in the form of interviews with their parents, teachers and the students themselves. However, political opinions on the subject have specifically been left out of the scope of this study.

Scientific articles based purely on Marathi students and the barriers they face were hard to come by and therefore reinforced the author's mission. Literature findings show that technology and media play an enormously significant role in the awareness of sustainability related topics; and in the Indian context the lion's share of this information is presented in English. Moreover, the economic benefits of knowing English language are strong motivating factors.

Giving every (Indian) student the opportunity to learn English along with other languages, sans barriers, gives them the freedom of choice to correlate information presented in one language to problems presented in another. Language imposes grave barriers to leapfrogging economic and social boundaries, while impeding sustainability awareness.

Key words: Language barriers, Sustainability awareness, sources of sustainability awareness, Marathi, English, education.

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Introduction

"Language forces us to perceive the world as humanity presents it to us"
– Julia Penelope

Education has universally been accepted as an in/direct solution, to many issues like poverty, inequality, health and has been the goal of UNESCO to improve and increase the capacity building potential of education in the developing world. International agencies have recently created a contemporary outlook to the needs education is meant to fulfill. Mere literacy is not sufficient and through the UN decade of education for sustainable development (2005-2014), the overall aim is to make students aware of the inter linkages that lie between environment, society, economy and institutions and their attached intergenerational responsibility.

The aim of this paper is to examine the macro theme of UNESD[1] when faced with language barriers on a local scale. Most information, themes, concepts and ideas today are conveyed in English. It has been deemed as the most commonly spoken language in the world when native and non native speakers are combined. Due to this hegemony that the language has over others (Indian languages), the author decided to investigate the impact it may or may not have over the concept of sustainability being transferred to students who do not know the English language.

With the above perception in focus; to be considered as moving in the direction of education for sustainability, education policies should at the very least:

- Provide the amenities to students in order for them to not incur the language/technology gap while being exposed to new and alternative ideas/perspectives with respect to economy, society and environment.

- Address the differences that impede educational knowledge transfer and implementation and find befitting cultural contexts.

- Evolve and accept universally promoted concepts irrespective of local or foreign origin, disbarring room for politically tainted information. While encouraging educational stakeholders to critique information in scientifically valid methods.

[1] The goal of the United Nations Decade of Education for Sustainable Development (2005-2014, DESD), for which UNESCO is the lead agency, is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning.
(Ref on 4th April '09:
http://portal.unesco.org/education/en/ev.phpURL_ID=27234&URL_DO=DO_TOPIC&URL_SECTION=201.html)

A comparative study was made between students aged between 12 and 14 years in grade 8 at Navi Mumbai High School in the English and Marathi sections. Externalities such as fee difference, locale, logistics and quality and content of education are factors that may not affect the outcome of this study.

The main questions addressed in this paper are:

- Are students aware of the concept of sustainability?
- Does the absence of functional words/concepts like 'sustainable', 'ecological', 'energy security', etc (in Marathi) lead to a reduced ability of long term analytical skills related to sustainability?
- Do teachers recognize a language based gap? If so, what are they doing to bridge it?
- Do parents recognize the language based deficit and if so, how do they justify the choice they made for their kin?
- Does ICT play a significant role in the knowledge import and export that shape the way students perceive and process information around them?

This paper specifically avoids addressing language formation and related evolution within the lingua franca arena. And focuses on the differential gains and drawbacks the two compared languages present with respect to sustainability awareness in the context under scrutiny.

Not included in the study

- Political opinions on the perception of English as a language
- Geo-political bases of language selection.
- Cognitive and pedagogy research studies related to language adoption

The thesis' central position is that ideas, concepts and methods to understand sustainability ridden themes, such as resource use and management, town planning, role of super national agents etc through education requires a basic understanding of the English language; within the Indian context. India is a country where English is an official language, and the same medium in which the constitution is written. Thereby, an anticipatory argument can be addressed from the view point that the pre-existing infrastructure and personnel that possess skill sets of the English language make the transition process of education in English economically and logistically feasible[2].

The focus of this paper is to investigate the empirical data and compare the analytical capabilities that the two groups of students possess when asked to reason and appraise sustainability ridden questions/situations; and share personal opinions coupled with rationale. The other groups of individuals interviewed who have an immediate impact on

[2] In terms of absolute numbers, India has the worlds second highest English speaking population after the U.S. Census of India's Indian Census, Issue 10, 2003, pp 8-10, (Feature: Languages of West Bengal in Census and Surveys, Bilingualism and Trilingualism) & http://en.wikipedia.org/wiki/List_of_countries_by_English-speaking_population

these students education, within and beyond the classroom; were their parents and teachers. The political influence that largely governs the acceptance and attitude towards English has been kept beyond the boundary of this study.

The relevance of this paper lies in the fact that while India like most other developing nations pursues the attainment of 100% literacy, the content of holistic education is equally important as the number of people receiving it. An education wherein students are encouraged to develop analytical skills, adopt healthy critical view points and assimilation of information from multiple sources; related to transdisciplinary subjects. Marathi was chosen because it is the 4th most widely spoken language in India with a collective of approximately 90 million users/speakers worldwide[3].

A generous portion of the study deals with ICT as contributing factors to the purpose of sustainability awareness among students. And though ICT is a broad term, within this study it includes the following:

- Television
- Radio
- Internet
- Tickers/ live buildings – LED displays that have news updates etc on public spaces like buildings and train stations.
- Mobile phones

Newspapers, books, encyclopedias and similar print forms were also taken into account.

[3] http://www.censusindia.gov.in/Census_Data_2001/Census_Data_Online/Language/Statement1.htm

Chapter 1:
Methodology and Analytical Framework and Theoretical Background

A.1.1 Overall methodology

Systemic thinking and a holistic approach was used towards addressing the language barrier issue in order to increase the authors own comprehension. One stop and simplistic solutions were avoided in lieu of latent factors like language imperialism and sustainably beneficial choices made by interviewees. The overall approach was trans-disciplinary in nature, wherein the environment, economy, technology and natural resource management amongst other related topics were discussed and tested upon at length.

The study embraced an analytical inductive method (Ragin, 1994) going back and forth from evidence to ideas/theories. On the epistemological front the researcher supports interpretivism since social reality as a meaning for human beings and therefore human action is meaningful (Bryman, 2009) as opposed to positivism or the two versions of realism. And the continual shared equation between social phenomena and social actors enables the research to find its ontological foundation in constructivism. The research design entailed triangulation (Yin, page 67) building up the study on articles, observations and interviews.

Aware of the potential biases the researcher has coupled with the influence her background may have on the research, neutrality was aimed at during interviews and data collection. Interviewee's academic background and the medium it was achieved in; was noted before each interview. A research diary was maintained through out the process in order to systematically update the evolvement of the research and its related questions and authors views. This assisted in enabling the author to re-think and improvise certain questions in order to achieve reliable and consistent findings.

This series of operations was carried out so that the consequences of language barriers affecting sustainability awareness amongst high school youth may be understood better. Geo-political base of language selection entails the tensions caused between Indian languages: National vs. State; i.e. Hindi vs. Marathi and the significance/ acceptability each aims for. This has not been within the research boundary of this study.

A.1.2 Fieldwork methods

Back ground information to the Indian education system:
Unlike some developed nations, the increased disparity between public and private education is considerate. Indian education hasn't been successful in delivering equal quality education to all. Private education is a booming sector and has been a recognized player against public/state education that usually does not deliver. Teacher absenteeism and low infrastructure are contributing factors to the drawbacks of State education. Private education quality varies and depends on multiple factors like school fees, neighbourhood locale, etc (Lall; 2005)

A.1.2.1 Where?

Navi Mumbai High School

Navi Mumbai High School (NMHS) is located in the heart of Navi Mumbai, which translated means New Bombay. This is a state/public owned and operated school that offers education of similar content in both languages i.e. Marathi and English. This school was chosen as the 'experiment site' because it negated a few of the confounding factors to a certain extent. Since both mediums of education were offered on the same premises, neighbourhood disparity was accounted for.

A.1.2.2 Why NMHS?

The researcher was aware of the good results the school yielded on a regular basis, to confirm that the quality of teaching was at a relatively satisfactory standard in the given conditions.

Moreover, being a public school the average family income was lower than compared to peers in a private school or convent school *(Based on comparisons, conducted by the researcher)*. This enabled the researcher to entrust that exposure to ICT and expensive forms of media was comparatively lower than higher average family income groups; which played a significant role in the research as exposure to the English language (among Marathi students) was relatively lower because of the financial background of most students.

A.1.2.3 Who?

Parents, Teachers and Pupils.

In order to truly understand the spheres of language influence upon a students life, apart from his/her peers, parents and teachers were interviewed. Most students interact with their classmates and/or friends, family and teachers on a routine basis. Thereby this becomes their (students) language 'feed exchange system' apart from media feeds. They directly or indirectly control and guide the mediums of cognitive and absorptive learning

and development (within the regular Indian context). This was a crucial participle of the interview section as they assisted in enabling the researcher in further understanding how language barriers impact students and their subsequent thought modulation related to sustainability where methods of information procurement was a substantial precursor.

A.1.2.4. Reasons to collect primary empirical data:

- Modest amount of data within the given field of language barriers where English is compared to an Indian language.
- Lack of any scientific information with respect to language impeding sustainability awareness, among school going youth.
- No studies were found that involved parents and teachers as influencing factors upon the topic (within the geographical setting).
- Researcher believed that this primary data would support the idea of 'Think global, act local' thereby connecting the UN DESD with perception of Navi Mumbai students sustainability related topics/issues.

A.1.2.5. How were interviews conducted?

Initially contact was made with the school principal for appointments to interview students and teachers. Questionnaires consisted of 18 questions and were semi-structured in nature. Most of the questions had multiple choice answers, but also asked the student to fill in any extra comments they may have had. More over some questions were purely open ended that required the students to share their idea/thoughts and opinions. This was done to achieve an overall understanding of the degree of complexity students were able to comprehend.

50 students from each medium of language instruction were given the questionnaires. Additionally the interviewer instructed the absence of right or wrong answers thereby encouraging them to choose their expression as they deemed appropriate. This however did not reflect the entire class, as each class had an average of about 75 students. Therefore approximately 25 students in each set were not asked to fill out the questionnaires. The choice was made by random selection. The students who did not fill the questionnaires were not participants of further qualitative interviews either.

After the researcher lightly scrutinized the questionnaires, the next sets of questions for the qualitative interviews were made. These were open ended and a few questions were improvised upon in the duration of the interview, so as to recognize the concerns and interpretations of interactive and feedback systems sustainability related issues held with students.

For in depth qualitative interviews, 6 students from each set were requested to participate. The invitations extended were, again, made by random selection only keeping in mind gender balance. The interviews were audio recorded on the researchers' mobile phone and interviewees were not informed about the recording process. This was to

maintain the candid conversations that would be affected if interviewees were informed of the recording. Recording was done purely to assist the researcher in keeping all facts during the process to be later used for results and noting fieldwork findings. Notes were also taken during the interview.

The next sets of interviews were conducted with the teachers, wherein, again audio recording was done without informing the interviewees. Notes were taken during the interview. Teachers interviewed were from faculties belonging to languages, science, social sciences and mathematics of both instruction mediums. A total of 8 teachers were interviewed. They were all female. The researcher found that all teachers were willing and accommodating to share their impressions of how language plays a role in shaping the way pupils process ideas and their own comfort levels with expressing themselves in certain language mediums.

The interviewer attempted to avoid bias during the interview process. This was done by posing a range of questions in order to comprehend the 'how's', 'whys' and 'what's' of interviewees convictions and adherences to their personal methods of conceptualization and envisaging of wicked problems/ conundrums with multiple actors and factors; in each language medium.

In certain cases where information seemed to appear contradictive in nature, the answers and opinions were asked again and areas of contradiction were pointed out so as to clarify the interviewees' stance.

In order to identify theorization patterns of interviewees' the questions as part of the qualitative interview were divided into broad themes so as to assist the researcher with phenomena of interest (*Bryman, 2009).* Water, transportation, urban development, electricity distribution, energy consumption, pollution, use of technology, exposure to languages, media influence, role of institutions, economic goals (micro and macro) and natural resource management.

All the asked questions were designed to avoid plain yes/no replies and instead enable the subjects to rationalize their statements. During the course of interviewing students, teachers and parents the researcher learned that there was a gradual improvement in interviewing style and posing of questions such that the interviewees were able to answer specifics with greater ease. Interviewees appeared to be a great degree more comfortable when they were assured that their opinions were sought sans judgement.

A.1.3 Analytical Framework

Primarily a consensus defining certain terms like language barriers, sustainability, impact on sustainability, education for sustainability and sustainability awareness need to be established. This would enable a Habermasian idea of communicative rationality to be achieved (Callinicos, 2007). The 20th century philosopher states that many "realities" can co-exist however the only "truth" there is, is the one we share and achieve through communicative rationality.

International, national, state level and local policy makers, education specialists and stakeholders agree on the basic principle of the merits of literacy and capacity building potential and anthropogenic development, education promises. However, education researcher Richard Baraniuk acknowledges the knowledge transfer (in education) that moves largely from the developed world to the developing world could be perceived as a version of cultural imperialism because of the languages it dwells in (English, French, etc); and that translation/re-contextualization/ownership of it is an imperative portion of the knowledge transfer[4].

The author would like to draw attention to her agreement that the influence of ICT in education, communication in recognized languages remains as the substance or medium of ICT (Chapelle & Jamieson, 1986; Holmberg & Samuelsson 2006). CALL (Computer assisted language learning) which has its roots in CAI (Computer accelerated instruction) is a widespread "tools for learning" material system that enables its students to learn the English language in a variety of different methods or structures with the assistance of computers. This has now progressed to mobile phones as well.

CALL is based on studies from the 1960's, wherein language pedagogy and Krashen's Monitor Theory of second language learning plays a significant influencing factor[5].There however, seemed to appear no similar learning tool for Marathi, thereby reiterating the actuality of English being a dominant language with respect to ICT over Marathi.

While the concept of Sustainable Development has been popularly denoted in the report "Our Common Future" – Brundtland, WCED 1987, the author found no similar text used in an internationally accepted and acclaimed report available for the term **Sustainability** however a definition that appeared to adequately fit the notion it represented in this study was "*a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, planning and acting for the ability to maintain these ideals in the very long term"*. With relation to this status-quo the author furthers the hypothesis that adopting and developing

[4]Rice University professor Richard Baraniuk is a leader and visionary for an online education material related exchange system: Connexions supported by Creative Commons. His views were quoted from a speech he gave at TED that hosts annual conferences in California, U.S.

[5] Subject Centre for Languages, Linguistics and Area Studies, University of South Hampton, (http://www.llas.ac.uk/resources/paper/1293 referred on 19th April 2009).

a pre-existing (in India) economically and culturally viable language that is universally accepted would create a "level-playing" field for its users in the international arena and thereby conquer the probability of negative affiliations to 'language minority groups'.

Sharing the concern that educating younger generations of citizens in English (along with their native language) may lead to ethnic-cultural adulteration, the author takes inspiration from European (non-native English speaking) states where bilingualism or multilingualism does not diminish the connection with native languages. This is supported by Ferguson *et al.* pg 279 *"To be bilingual is partly natural, and partly social."*

Although it may be considered implicit, the author believed that making an outline of the definitions or closest connotation of a few key words would avoid misunderstanding or misinterpretation of the terms/words/concepts used in this study. The definition for language is *"the mental faculty or power of vocal communication"* and barrier *"anything serving to maintain separation by obstructing vision or access"* a conjoint dictionary meaning for language barriers was unavailable, however by merely adding the meanings of both words together it is understood (by the researcher) that a *separation/obstruction between dissimilar mental faculties or vocal communication* would serve as a functional definition of **Language Barriers.**

Similarly, the term **Impact on Sustainability** was understood by the author as *a strong influence or affect or having an effect upon Sustainability.* **Education for Sustainability**: *"The gradual process of acquiring knowledge"*; for the purpose of this study the knowledge acquired would be related to Sustainability and in the formal schooling system. The author would like to bring to attention that the UNESD has an apt definition of the concept "Education for Sustainable Development".

While these definitions may assist in enabling the researcher to express her concept of the analytical framework for this paper, language barriers and sustainability awareness within the realm of high school education is not a scientific discipline or another subject that could be added to the curriculum but an effect or lack thereof policy and prescribed syllabi[6] (Pustika page 25- 27, Maharashtra State Board of Secondary and Higher Secondary Education). The imperative disposition of sustainability in education as been highlighted by S. Sterling; 2005, pg 50 noting that "*the nature of sustainability requires a fundamental change of epistemology, and therefore, of education*."

Holmberg & Samuelsson (2006) observe that to merge sustainability with education a constant process of facilitation is necessary; while it is a product of social learning and a binding course of action involving all concerned stakeholders. They also note that issues or subjects that create divisions should be brought forth so as to bring about a negotiated and concurred agreement. This agreement is necessary to create a layout of learning; which in turn may yield alternative routes of development. While the aforementioned issues are capable of presenting themselves in English medium

[6] Ref on 20th April 2009: http://msbshse.ac.in/pustika/pustika.htm

education, when coupled with a language barrier based time lag, they can prove to be greater impediments.

While adoptive policy and implementation steps can be taken into account, the author will discuss pathways to breaking the language barriers when sustainability awareness in education is concerned. Maintaining monolingual spheres of learning in a rapidly connecting world causes more disadvantages than advantages for those subjected to it, especially if the language of concern originates from a humble economical society. Within the national context non-English speakers on an average face the deprivation of not getting the equal opportunity of economic advancement, which if ignored; could lead to a vicious cycle of a language framed economic barrier (Tollefson and Tsui, 2004, pg 188-9).

National and state level education policy makers and elected officials have the capacity to provide students an opportunity to learn the English language along with their native tongue, if they chose to as per the "education for equality" statement (Ministry of Human Resource Development, 1986, modified – 1992)[7]. Moreover, as schools work on an annual basis, therefore a space for scheduled introduction is available. The divide that English language education creates in India has been recognized and reiterated in the works of Martin Carnoy's Education as Cultural Imperialism (Lindsay, 1977).

The recognition of educational inequality that exists in India has been the precursor of the organization Teach for India (TFI; modeled after Teach for America), where private participants and industry leaders have decided to provide alternative means for quality education to the underprivileged. It is however interesting to note that although a very young and well intentioned initiative, they too place their "fellows" in lower economical category English medium schools[8]. Thereby, if the author makes a presumption wherein other organizations like TFI which involve private initiatives that promise to bring about a "Transformative Change[9]" in education methods and thereby impacting the under-privileged students and their communities aim for English medium schools too, it translates into a longer and larger gap for non-English language students to benefit from external enterprises of change.

[7] Ref on 17th April 2009: http://education.nic.in/policy/npe86-mod92.pdf
[8] Ref on 17th April 2009: http://www.teachforindia.org/fellows.html
[9] Defying traditional teaching methods, TFI fellows will work on aspects like getting to know students in and out of the classroom, thereby understanding individual and group needs of students. This method will also include involving community members. Part of the framework laid out is implementing a project in the school or students community that will assist in confronting things that hinder students from achieving academic success.

Another solution to this issue could be amending or revising concepts and words that are not in functional existence within the Marathi language. The dilution of the language is observed on a daily basis for those living in the state (Maharashtra). Even with political enforcement of bilingual signs for all commercial and institutional activities, it leads to the popularized usage of "Roman Marathi"[10]. Everyday examples are signs like Internet Café/ इन्टरनेट कैफे, Hematologist/ हेमातोलोगिस्ट, etc. As a result, these words like many others get absorbed into the Marathi language used commonly. In some cases, the non-existence of certain words is reflected in "public", for instance the word 'web' (of World Wide Web) does not change and is transcribed into Marathi sans translation. This can be seen when one views the Google search engine in Marathi. The author views the absence of words functional or absolute with regard to science, technology and most things of western origin replaced directly by English as a passive hegemony that gradually enters the world view of both English and non-English speakers. Similar studies and findings have been done with Mandarin Chinese by Hsu, 2007.

Fig.1image source: Wikipedia

[10] The author used the coined term Roman Marathi, styled after Roman English. In which case, English words are transcribed directly into the Marathi/Devnagri script.

Theoretical Background

B.1.1 SOCIAL AND CULTURAL REASONS

Fishman (2001, pgs 140-142) describes the relation of human beings with their ethnicity as coherence with self and the social framework that surrounds them. It is a notion which may serve to provide an individual or group of individuals with a sense of association. He also notes that while individuals and groups achieve a sense of identity in terms of geopolitical, organic and semantic structures, when different communities share common physical spaces and communal orientation begins languages are either lost while replaced with a prevalent eminent one. In some cases during a merger of cultures, the minority culture may embrace the language (amongst other characteristics) of the majority or dominant culture; however during partition minorities tend to embrace purely what was theirs.

While the author studied this viewpoint, she noted that the situation facing many Maharashtrian people today was the tensions they faced at cross roads of languages. While English was introduced by the British during the colonial era, there was a strong sense of bringing back the "original culture" and characteristics that it carried with it by the time India became free again[11]. However due to its (English language) economic dominance and international acceptance, amongst other reasons, it was not discarded by all. Over the generations this brought about the English-language divide that the nation faces today. Propagated by some politicians as a colonial tongue, some agree to that ideology and thereby reject receiving education in English over Marathi, and thereby experience what Fishman's book describes as 'marginalization'(Lall; 2005).

There has been an increasing awareness of the variation determined by lingual usage; and its applications that have a profound effect on human activity, establishments and arrangements that condense into communication (Khubchandani; 2003). Post independence socio-political amateur (non-expert) observations likened Indian languages to the colonial tongue. The insistence for the revival of native languages against English within the education system and attribution of negative outcomes of the native tongue towards English lead to language segregations and gaps in demographic groups with regard to languages taught through education (*Ibid:* 244).

"Educational planners in the contemporary South Asian context have, by and large, committed themselves to education for all without seriously questioning the elitist framework of education inherited from the colonial set up (UNESCO, 1993). In spite of severe criticism that the content of present education is not well integrated with society, no formidable challenge has been posed to the white collar-oriented, urban-biased education. Gandhiji's programme of Basic Education, catering to the needs of rural masses, has not seriously been tried by the national elite, still wedded to the lofty values of 'elegance' in education."(*Ibid:* 245). In multilingual South Asian societies, native

[11] Wages of Violence: Naming and Identity in Postcolonial Bombay, Madhavi Kale (Journal of Asian studies)

languages grow at unequal rates while the availability of supporting educational materials in those languages has now lead to a renewed education ideology and framework (*Ibid:* 249). *The scope of mother tongue education and of imposing urban elite standards in school language needs, therefore, to be reassessed in the light of insights gained from recent studies of plural societies*. (*Ibid:* 249)

The most striking feature that plays a role in ICT implementation in developing states and when software and supporting ICT material is formed in one country, because of its local connotation; may not receive the same acceptability elsewhere.

In countries where English emerges as a strong second language, even if it is not a native tongue, the results can be promising for the population who then get to use global standard knowledge products without the language barrier or translation loss and do not earn a time delay either. However the tipping point for any ICT in a developing or emerging market is the socio-cultural needs of the particular demographic group that it requires to fulfill. In order to economically grow, Fishman 2001 highlights how communities absorb or learn a second language.

"In a society that does not have a common language, more precisely a society characterized by diglossia without widespread bilingualism we are likely to find not only more impairments in social planning and in the efficiency of institutional arrangements but also a limited access for wide segments of the population and an allocation of resources that discriminates against minorities and other subordinate groups of the population" (Kelman: 1971). On the other hand a common/national language serves to develop multiple spheres of the nation and significantly improves the educational system of a nation thereby allowing all members of its population to be participants (*Ibid: 32*). Divisive nature of language deeply affects socio-economically disadvantaged minority groups, and the disadvantages extend to the population with regard to lack of international status it may receive (*Ibid: 34*)

The disadvantages may include minority language speakers from equal opportunities while the language its self may not develop at a pace comparable to more "international languages"; in the interim its educational accomplishments are weakened. A cyclical cause and effect pattern may emerge between an unequal or minority language and absence of development amongst its speakers (*Ibid: 35*). With the advancement of globalization and economic development the dominant language(s) grow a stronger foothold while it becomes increasingly difficult for the subordinate one(s) to participate. In such cases, it has been noted the upper economic classes who belong to language minority groups adopt bilingualism and thereby are able to fully participate while the vast majority are singled out from global involvement. And eventually leads to the segregation of education among other issues for the lower classes wherein equality of languages comes to the forefront. Language and group identity are closely linked (*Ibid: 36*). The authors recommend familiarizing subordinate language groups systematically with dominant ones through the medium of education. This method however cannot succeed alone and economic development is imperative in combination with education

(*Ibid: 46*). Language policies success depends greatly on educational planning amongst other factors (*Ibid: 49*).

B.1.2 TECHNOLOGICAL REASONS

Under the larger framework of the Climate change banner the Indian media that employs English language focuses on economic activity. An unnoticed but widely important obstacle is the language barrier for researchers from developing and certain developed nations. Automatically those (Indian researchers) who know English have a stronger foothold in the international research circuit. Higher and Scientific education that comes within the Council of Scientific and Industrial research (CISR) operates almost entirely in English (Kandlikar & Sagar; 1998)

An example of technological related elitism in everyday life can be illustrated by a study conducted by Angeli A. *et al.* in 2004: ATM's that ensure easier and safer access to money faced user end problems. Technology meets technological illiteracy in developing markets like India where communication is faced with communication barriers. English was found to be the most preferred language for ATM/technology interaction. English has enjoyed being the language of middle and upper economic classes of Mumbai and is associated with technology. Technology offers a way out from the caste/class system. Perception of technology in India is that it belongs to the upper classes and has a sense of exclusivity attached to it. Script communication faces the hurdles of illiteracy and heterogeneity of languages.

Another technology experiment was a study based on knowledge procurement where:

- The teacher/external source decides or prescribes the education/syllabi
- The teacher/external makes the decision along with the counsel of the students
- The students make the entire decision.

The study found that children do more than simply absorb information around them or imparted via teachers, they engineer ideas and add new information in order to advance their understanding about their surroundings. With the correct foundation, they are able to critically assess their world. And that computer literacy is not necessarily a privilege of the "educated" segment of the nation (Mitra; 2000).
Children from urban slums and rural villages were exposed to computers fitted in a "hole in the wall". With the informal source of information children taught and improved their math and English language skills (DeBoer; 2008). In one case the children taught themselves English over the computer on their own, in order to use the computer[12].

A model experiment was conducted in Sri Lanka with the assistance of UNESCO to overcome language barriers in the digital divide. Radio stations were set up for rural

[12] Ref: conference at UOC UNESCO Chair in e-Learning Fifth International Seminar: Fighting the Digital Divide Though Education. - http://www.youtube.com/watch?v=Hy5-p3dtCyQ

inhabitants who may have under normal circumstances never used the internet for a variety of reasons, language being one of them. Users could phone the radio stations and ask for information and radio station personal would browse the web on the villager's behalf. This successfully overcame the language barrier without having to teach the web dominant language to the study group (Pringle & David; 2002). Economic barriers coupled with language barriers (in software) contribute to low PC usage in India. This study speaks of urgency for digital information in Indian tongues and its fluid adaptability and availability with relation to language technologies (Ganapathiraju *et al.*; 2005).

Knowledge drives development, and has been proven to be more valued that capital alone. Knowledge accession and application has also the possibility of inviting the risk of equality gaps (*Ibid:* 3-4). A paradox of statistics and opportunities, India has the highest number of English speakers in Asia (*Ibid:* 6), but less than 5% can work in English. However there have been a few initiatives by the Indian government to bridge the language based digital divide in the country (*Ibid:* 21). One of the main designs for further research within the said study is connecting educational institutions with ICT (Chattopadhyay & Das; 2004 – pg. 28).

With public private partnerships the biggest challenge that faces ICT in India is the variety of Indian languages and their corresponding unavailable supporting software and technology. In order for the technology and its usage to be successfully implemented it must be made available in a language(s) familiar to the users. In other words language barriers should be overcome, because if the content is incomprehensible to the user then the desired effect of enhancing knowledge transfer in the appropriate context to the user is lost (Mehta & Kalra; 2006 – pg. 150). For broad based sustainable development, primary education is important. And computers can complement the effect of knowledge transfer that teachers in classrooms attempt to achieve (*Ibid;* 151). I.T. is necessary to catalyze the benefits of globalization and meeting the basic human needs to reach the poorer sections of Indian society. There have been numerous studies done on the establishment and success of CALL, which reiterates the demand for learning English (Chapelle & Jamieson; 1986). Even informal computer enabled systems of learning about sustainability like Second Life, are not available in Marathi (Rickli *et al.*).

B.1.3 EDUCATION

Beyond the classical definitions of literacy like the ability to solve math equations or read a poem, teachers and educators have the capability and capacity to encourage students to think and ensure *deeper learning*. Education leaders who can envision sustainable change in a knowledge community initiate coherence thinking coupled with innovation. Interaction and participation of other realms of society with education creates a larger base and network of knowledge sharing and creation. This network in turn strengthens development and learning with relation to situational, specific and contextual circumstances (Fullan; 2002)

John Stir (2005) highlights the agenda of ESD and the impediments of differences between cultural and interest groups; and thereby the differences in interpretation of sustainability. Moreover the complicated nature of languages and translation presents a problem when it comes to concrete topics like definitions (within sustainability). The Education for Sustainable Development Toolkit report (McKeown; 2002) is largely based on the UNDESD and recognizes the power of language in the ability to transform disconnected pieces of information into perceivable and comprehend able constituents of sustainable development and sustainability amongst students. (*Ibid:* 7, 25, 44, 47, 87, 88, 128) This report too admits having searched for information based upon English language websites

Contributor to education for sustainable development in India, Shukhla's study finds local scientific knowledge (plants, medicinal practices etc) along with geographically bound experiences gives rise to different education paradigms, practices and perspectives. Moreover the study finds that constantly evolving knowledge systems and the idea of collaborative learning appear befitting in the Indian context. It also reaffirms the findings of Palmer (1998) wherein a combination of informal and formal constituents of education with the support of stakeholders results in successful education programs. In developing nations where many students do not receive an education or if they do the quality and context maybe debatable; in such cases the importance of local knowledge of the environment and other components of sustainable development become exponentially precious.

Rabindranath Tagore (1861 – 1941), a famous Indian educationalist, philosopher, poet and intellectual who propagated the importance of holistic education was also renowned for his support of the symbiosis of formal and informal educating styles. Within the holism of his philosophy, he cites international relationships, English and Indian languages as a compelling part of the formal curriculum (Rather, 2004, pg 121-25).

The Indian ministry of education has stated that English is vital to higher formal learning[13]. However a steady deterioration of the quality of English language taught has been observed. This presents a conflict with recognition of library language that English has gained in India. In conclusion N. Jayaram, 1993 highlights the importance English has gained even within sections of society that do not support it entirely. Subjects like "Technical English" are included in the curriculum and bi/multilingualism appears to be a sound solution for the present. In order to ensure students are capable of growing up in a multilinguistic society English, Hindi and the regional language is taught in schools (Borooah & Iyer; 2002)

Vann *et al.* 2006, support the idea of information dissemination in multiple languages in as many situations possible. There is interest of an emergent technique, using the internet as a medium of sustainability education and awareness. While many scientific studies have proven that systems thinking is an excellent tool to address complex sustainability ridden issues, this does not have similar flexibility in Marathi. The absence of similar information in Marathi or any other Indian language once again reiterates the gap that language creates in sustainability awareness and related issues, even among a group like students (Bossel; 1999 pg 55 & Meppem & Gill 1998).

Another possible and exemplary disadvantage non English speaking students face with regard to sustainability and environmental challenges is the absence of opportunity they face with international educational programs like the Young Masters Program. It operates in English and is renowned for the information it imparts and critical thinking, capacity building and expanding education for sustainable development. And while there are plans to introduce the same in Chinese, Spanish and Arabic; there is no discussion for the same provision in Indian languages (McCormik *et al.*: 2004).

The need to change the mind set of the global population; and thereby create a more equitable and sustainable way of thinking, acting and living can be effectively imparted at the formal education stage and thereby create a more systematic approach to the situation and ease the responsibility that NGO's across the globe have under taken. Education offers a space where interdisciplinary subjects that affect and involve sustainability and other related 'wicked problems' concerns maybe addressed (*Ibid:* 16).

It is with this belief that studies and attempts have been made to create a framework supporting the concept of *Environment and Sustainability Literacy* within which curriculum of transdisciplinary methods of thinking and practice have been sought. (Cortese, 2003). Indian education ministry supports the idea of the following:
"That the change to an Indian language should be preceded by an adequate preparation both in the cultivation of the Indian language concerned as medium of expression for learned purposes and by preparation of a sufficient body of learned literature in that language in all subjects of study; and that even when a change in the medium of instruction is made, English should continue to be studied by all university students"[14]

[13] Memorandum on item 8: Medium of instruction in Universities
(Ref on 19th April 2009 http://www.education.nic.in/cd50years/g/12/21/12210A01.htm)
[14] Refer to footnote 12.

B.1.4 OTHERS

World Bank: While increased sustainability awareness is linked to knowing English, another possible trigger to poverty is language based. Not knowing English or any global language has been observed with communities that live in abject poverty and usually within the interiors of the country. English is a language that is spoken by few poor people but has an extremely high presence on the web. Participatory processes that yield stakeholder perceptions and values are important in order to address and impart education in sustainable development (Meppem and Gill; 1998)

ICT can be used to improve the quality of education from a variety of aspects in the developing world that could possibly enable emancipation of under privileged communities or demographic groups. Stress has been laid on multiple methods of learning – formal, informal, guided and unguided. Few developing countries have adopted ICT in education as a way to narrow disparity. (Sharma: 2003). High internet costs, lacking infrastructure, political favour and gender disparity are some of the barriers (*Ibid:* 513-514). Having displayed a supporting argument for ICT, the author would like to caution simplistic approaches towards adopting technology and replacing local knowledge. Historical and culture risk being ignored. (Bowers, 2000)

English has been observed to be an important, widely used and influential scientific language (Leeuwen *et al.*). This seldom is connected to the number of people who speak or use the language as opposed to the authoritarian global communities responsible for its dominance. History supports this with examples of dominance like French, Spanish and Latin (Crystal, 2003, pg 10-11) while German played a significant role in the late 19th and early 20th century in Science.

English within India has successfully surpassed the ethno-linguistic controversies among native languages, but has not conquered the political debate of providing internationally competitive education in native languages. As it does not 'belong' to any particular region, it is neutral. This argument fuels patriotic and post independence mandates for certain political parties. However, recently growing demands for English education across economic classes has created tension between certain political leaders and the masses (Tollefson & Tsui, 2004, pg 184). The author questions the missing links between planning and implementation of educational policies, and the goodwill of people vs. extremist political viewpoints.

CHAPTER 2:

Fieldwork Findings

Qualitative and quantitative interviews with students, teachers and parents have got common points of favour of a high economic advantage by knowing English.
Reasons often cited for choosing Marathi over English ranged between a higher incurred cost that parents foresaw in connection with English, a language barrier that parents feared would be created between them and their kin (in many cases parents of Marathi medium students were found to be illiterate and semi illiterate) and a negative affiliation in the direction of "Westernized modernity".

A striking fact that the author did notice was while there were parents/guardians of students who may not have known the English language themselves, or did so to a minimal extent; enrolled their wards in the English section of the school, the same enrollment was not observed with parents who were found to be fluent in English and admitted their children in the Marathi section. The author would like to highlight the fact that this school and study group negated a few confounding factors, while the others like parent's literacy, income levels, and access to ICT were beyond the authors control.

2.1 STUDENTS

Questionnaires were semi open ended in nature, given in both English and Marathi. The indicators upon which the questionnaires and interviews were based consisted of:

- Perception of benefit from English/Marathi language
- Awareness of international/super-national institutions and their roles beyond content imparted in the course of formal education
- Language based external knowledge procurement i.e. non-text books.
- Problem perception and ability to assay an issue with multiple factors
- Gender based differences (if any, why?)
- Positive/negative attitude towards Marathi
- Positive/Negative attitude towards English
- Ratio of internet access and knowledge of English language.

Quantitative results based on the questionnaire circulated amongst students yielded:
Number of students interviewed in each set – 50
Marathi: 28 boys, 22 girls
English: 29 boys, 21 girls.

2.1.1 Ratio of internet access and knowledge of English language
Appendix 1 question # 17

Language	Marathi	English
Boys	9	19
Girls	3	10
Total %	24%	58%

- Students who didn't know any English, did not access the internet.

- The author found that a common attraction for computer based games amongst boys lead to greater extent of interaction and experimentation with computers and the internet, even if it meant going to internet cafes and spending their allowance.

- Lack of interest and/or capital was another reason that students refrained from accessing/learning internet usage in cases where they did not know how to use it at all.

2.1.2 Awareness of international/super-national institutions (U.N. & key bodies) and their roles beyond content imparted in the course of formal education
Appendix 1 question # 5, 6 & 7.

	Marathi	English
Boys	17	28
Girls	10	19

Total %	54%	94%

- In this case the role of information through various forms of the media appeared to play a significant role amongst the students' awareness. A gender gap was also discovered, amongst students. Further interview sessions revealed that the practice of watching news broadcasts was enforced upon the boys by a patriarchal member of the family, while girls in most cases had the free will to choose between watching the news and indulging in some other activity.

- The only respondent who was aware of the Millennium Development Goals was a girl from the English set of students. She admitted to having heard of the term briefly over the (English) news and driven by her own curiosity read further about it online.

- Upon running a chi square test of the above results, the degree of confidence achieved was 20.7 (Ref to Appendix 2)

2.1.3 Problem perception and ability to assay an issue with multiple factors

Appendix 1 question # 1, 2, 3, 4, 8

A total of 5 questions were posed in the form of questionnaires to both groups of students. These students had the option of choosing one or more options as the answer to multiple choice questions. They were also given the space to jot down their opinion on the matter. Each of those multiple choice questions were either roughly long term, mid term or short term viewpoints.

The researcher developed a raw matrix that would allow her to plot the choices students made depending on the singular or pluralistic way they viewed sustainability issues and if they were long or short term 'solutions' or observations they saw feasible. This was from the relatively short and long term solutions that were options students could choose form.

E.g. when asked if the solution to regular monsoon floods that the city experiences, was 'elevating constructions' it was considered short term, where as if pupils chose 'increased green/water absorbing spaces' it was considered mid term and to 'better city planning' long term label was assigned. Similarly, if students chose two options or more, regardless of short term or long term, they were assigned dual and multiple labels respectively. Students were not judged on long or short term if they chose two or more options because the researcher was attempting to assess their ability to view a problem from multiple angles.

Additionally she also gave points from 1-5 for their opinion (if given) and this was based on the quality of their problem perception for question 10, which was purely open ended. Points were allocated according to the number of factors they included and consideration to their frame of reference was kept in focus too.

E = English section M = Marathi Section

	S.S.T.	S.M.T.	S.L.T	Dual	Multiple
E- Boys	13	33	36	38	18
E-Girls	14	14	28	28	9
Total E	**27**	**47**	**64**	**66**	**27**
M-Boys	18	64	46	7	3
M-Girls	18	50	28	9	0
Total M	**36**	**114**	**74**	**16**	**03**

S.S.T. – Single Short Term (solution)
S.M.T. – Single mid Term (")
S.L.T. – Single Long Term (")
Dual – Two options chosen
Multiple - More than two options chosen

Additional opinion

	Short term	Mid term	Long term	**Total add. opinion**
E- Boys	2	10	32	**58**
E-Girls	2	3	9	
M-Boys	-	-	1	**11**
M-Girls	-	10	-	

* When questioned about the comparatively lower additional opinion that was shared by Marathi students, the researcher was informed (by the students) that most of them had never interacted with information similar to the content and style in which they were asked on the questionnaire and therefore had an absence of opinions. A possible drawback of the questionnaire may have been the style in which it was designed and directly translated from English.

Appendix 1 question # 10

	1 point	2 points	3 points	4 points	5points	Total points
E- Boys	1	4	0	0	1	**41**
E- Girls	1	2	1	1	3	
M-Boys	6	7	7	5	2	**116**
M-Girls	4	8	5	0	2	

- **Not many English students answered question no. 10. The author discounts this due to the format of the photocopies of the form, wherein it was faintly printed and could possibly be overlooked**

2.1.4 – Appendix 1 question # 11

As part of the questionnaire, students from both language sections were asked to choose from a range of options; the perceived benefits, disadvantages and impact the respective language mediums they were enrolled in. To enable the author to understand how they viewed the potential and shortcomings of the languages the education is being conducted in, they were asked to name other languages they would like to be educated in, the languages spoken at home, languages they were exposed to (outside school) and their opinion on the significance of bilingualism within the context of the city they live in.

Further comments beyond the multiple choice answers provided, that the some of the students made were taken into account as the perceived attitude towards the two languages in focus. It is important to note while some respondents did not answer all questions, between the two groups the un-answered questions evened out.

English section

	Male	Female	Total	%
Better economical/career potential	12	5	17	34
Comprehension of media information	2	1	3	6
Necessary for higher education	4	5	9	18
Opportunities abroad	8	6	14	28
International language	11	13	24	48
Importance as a native language	-	-	0	-
Others	-	3	3	6

Marathi Section***Referring to English, while others (non-*) are in reference to Marathi.*

	Male	Female	Total	%
Better economical/career potential*	10	1	11	22
Comprehension of media information	-	-	0	-
Necessary for higher education*	2	-	2	4
Opportunities abroad	-	-	0	-
International language	-	-	0	-
Importance as a native language	14	15	29	58
Others	-	-	0	-
I don't know	-	6	6	12

- The discernment of the benefits of economical and superior career choices that is an outcome of knowing the English language amongst males from both categories as compared to females lies in the socially dictated expectations of gender lead roles of the "breadwinner" vs. "homemaker".
- Marathi students on an average felt that the language should be given importance because of their cultural ties to it. Some believed that they could improve the application and practical betterment once they completed formal education. However, there were no comments about the added benefits it offers[15].
- Students who were in the English section, of whom most were Maharastrians as well, appeared to be more aware of the asset the language (English) promised to be. And were capable of listing multiple resources it provided them with.

[15] Benefits like blending into the community and culture and understanding local news channels were the only values they assigned.

2.1.5 Appendix 1 question # 9

When students were asked with an open ended question which language, preferably apart from the one they were being educated in they believed would help them understand socio-economic and environmental issues on a local to global scale range; the results achieved were:

E = English section; M = Marathi section

	E – Boys	E- Girls	M – Boys	M - Girls
Need for a common universal language	4	6	1	1
English	12	7	20	18
Marathi	4	3	1	1
European languages	0	1	0	0
Indian languages	3	1	1	1
Don't know	8	5	4	0

- The author makes an assumption that when students listed their education language as the language of their choosing for the above question, they either did not entirely understand the request to list another language OR believed that their language of education was the most preferred option anyway.
- A few students listed two or more languages as their answer, thereby indicating the importance of bi/multilingualism.
- A marked observation from the above results is that while students educated in English believe that English is more beneficial than Marathi, this is strongly reiterated by the pupils educated in Marathi.

2.1.6 Appendix 1 question # 12

When posed with the opportunity to choose any language sans economical barriers to learn; the results and supporting reasons were:

E = English section; M = Marathi section

	E- Boys	E- Girls	**Total**	M- Boys	M-Girls	**Total**
English	11	15	**26**	16	8	**24**
Marathi	2	-	**2**	13	15	**28**
European languages	13	5	**18**	-	-	**-**
Eastern languages	4	-	**4**	-	-	**-**
Others	3	1	**4**	-	-	**-**

- The E - boys gave highest preference to both European and Eastern languages namely French, Spanish and Mandarin. This was reasoned out with the long standing influence French and Spanish have in their ex-colonies and within

international institutions like the U.N. The emerging trade venture ties between China and India, the students believed was a motivating reason to learn Mandarin.

- Most E – girls viewed English as a language that would enable them to a comfortable economical and social standing later in life.
- The difference in the gender view points within the English section is due to the exposure the boys have (occasionally enforced) to business/commerce, especially if a family operated enterprise was part of the pupil's background.
- Within the Marathi section, many students stated that family support was a strong reason they chose Marathi.
- While the question clearly stated '*sans cost barriers'* many pupils in the Marathi section viewed that purely as school fees. And then stated that extra tuitions, books, and other aid factors would create an unaffordable learning environment.

2.1.7 Appendix 1 question # 13

In order for the researcher to have a better insight to the languages the students she was studying, were exposed to outside the classroom, they were asked the dominant language(s) used at home and with friends.

E = English; M – Marathi; H – Hindi

	E	M	H	E&M	E&H	E,M&H	Others1	Others2	Others3
E-boys	1	10	1	7	6	2	2	-	-
E-girls	-	6	1	6	5	2	-	1	3
M-boys	-	25	-	2	-	-	-	-	1
M-girls	1	22	-	1	-	-	-	-	-

Others 1 – monolingual, 2 – bilingual, 3 multilingual

- An overview statement: The dominant population whose kin attend Navi Mumbai High School are native Marathi speaking people.

2.1.8 Appendix 1 question # 14

To further investigate the exposure of other languages students receive, Marathi students were asked if they were exposed to English language and vice-versa. This was conducted in order to recognize the extent of familiarity the language had outside the classroom in their world view.

	yes ENGLISH	no	yes MARATHI	no
E – Boys	----------	----------	21	7
E- Girls	----------	----------	16	5
M – Boys	26	0	----------	----------
M - Girls	19	0	----------	----------

- Out of 50 Marathi students, 45 answered affirmatively, while the remaining 5 did not answer this particular question at all. However there was no empirical data to suggest that the English language was inaccessible or unexplored outside the classroom.
- On the other hand 49 English medium students answered this question out of which 12 were not exposed to the language outside the prescribed school syllabi.

2.1.9 Appendix 1 question # 15

Finally, in order to explore their thoughts in relation to the importance of bilingualism (English & Marathi) in New Mumbai, they were asked if both languages were necessary to live in the city.

	Very	Somewhat	No
English – Boys	22	2	3
English – Girls	21	-	-
Marathi – Boys	25	1	2
Marathi – Girls	19	-	1

- The consolidated agreement on the importance of bilingualism in the city reflected the middle ground that most students appeared to identify in a time where political/media forces initiate a language based divide.

2.1.10 Appendix 1 question # 11

Notions towards Marathi and English

A few opinions/comments written by students have been displayed below in order for the reader to understand de facto essence of the group's outlook on matters related to language influences.

"आपले भविष्य उज्जवल करण्यासाठी, इंग्रजी शालेट, त महागई म्हणुन मराठी शालेट, व परतिल पालक आशिक्षित अस्त्यार मराठी शालेट |" - १३ वर्ष, मुलगा

"To have a better future, you have to study in an English medium school. I have been enrolled in a Marathi medium school because it's less costly; and my parents are illiterate" – 13 years, Male; o*n why he's being educated in Marathi.*

"आमचे भविष्य उज्जवल होण्यासाठी इंग्रजी शालेट ताल्दले असावे आणि घरातील स्तिथि दुर्बल असल्याने मराठी शालेट टाकले असावे|" - १३ वर्ष, मुलगा

"For a bright future English education is the way forward, but due to poverty at home I'm studying in Marathi." - 13 years, male; *on why he's being educated in Marathi.*

“माझी मात्रभाषा मराठी असल्याने मला मात्रभाषेतूनच शिकायला आवडते ते मला लवकर उमजेत| “- १३ वर्ष मुलगी

“Marathi being my mother tongue, I like studying in Marathi and I grasp it quickly as well. “ – 13 years, Female.

“ I think my parents chose an English medium school for me because English language is more useful for jobs and if tourists visit our country we should be able to speak a common language, and English is a language on which the world works” – 13 years, female; o*n why she’s being educated in English.*

“Without English we can’t get a job and without Marathi we can’t speak with people (citizens of New Mumbai)” – 13 years, Male*; on why bilingualism in New Mumbai is important.*

“In India, people are selecting English medium (education) because India is developing in all types of work. People get educated here in English and go to foreign countries for employment. We have to compete with other countries in the future. English gives us opportunity to learn things from the West” – 14 years, male; *On why he’s being educated in English.*

2.2 – Qualitative Interviews

For the qualitative part of the interview section amongst students from both language sections, six students each were randomly picked. Both groups were gender balanced. Interviews with each group were conducted separately. This was done in order to negate any influence one group may have over another. Additionally the researcher believed interviews in two different languages, at the same time may be confusing for both parties, as well as the interviewer.

English section

1. E) Why English? Do you feel like it's a forced language? Where do you feel its immediate benefits?

All six students had a consensus on most ideas. Although English language may be the outcome of an unpleasant part of the nation's history, the language benefits many people today. One girl from the group pointed out that many people (Indians) are hired to teach English in China. The researcher later checked the source of her information[16]

While two students experienced the language divide at home, they were convinced that it promised a better economic future among other reasons. The place of English language in terms of social standing was apparent to the group as well. Four of the six students in the group noted how this enabled them to enjoy movies, computed based games and other forms of electronic entertainment. While one girl mentioned this way she could understand and make her choice between foreign and Indian products at the convenience store.

At this point she was then asked if apart from brand recognition, she paid any further attention to the details of the product she chose. This question was extended to the other participants in the group as well. Most of the interviewees listed price and brand reliability as their foremost priority, and added that when buying certain products they looked out for ingredients/chemical names/additives in the listing. One of the respondents who didn't use English at home explained that the biggest advantage he felt of knowing English was the numbers. Since almost all prices and expiry dates were denoted in English.

[16] A recently re-written article that was published a few years ago in one of India's leading (English) newspapers
Original article ref on 12th April 2009: http://timesofindia.indiatimes.com/articleshow/msid-903403,prtpage-1.cms

1. M) Why Marathi? Where do you feel its immediate benefits?

The consolidated reply for choosing Marathi was that it was their mother tongue and therefore an obvious choice. Choosing Marathi over English brought in the discussion of how it served to benefit them above and beyond cultural and social communication within the colony of people who speak the same language. Respondents agreed that the language was chosen because:

- Was easier to study, citing assistance at home as a reason.
- Accessories to school education i.e. books, learning aids, tuition classes were more expensive in English
- Avoiding a communication gap between parents and themselves. Parents in some cases did not know English or were even illiterate.

Five of the six interviewed claimed to be bilingual to varying degrees, while they all stated that learning the language (English) after they completed schooling was something they planned on accomplishing. However, when further asked to enlist its advantages, they believed that understanding local issues and agendas was easier as it was mostly stated in Marathi. However, when correlating local to global, they noted there was not enough information available in Marathi and therefore found missing pieces when they tried to understand the bigger picture.

2. E & M) Reading beyond school recommended material (Entertainment, educational, hobby – with environmental/socio-economic themes/influences)

English:

Encyclopedias, newspapers, books, magazines, comics and internet articles were citied as reading materials that the interview group read on a (in) voluntary basis depending on the context. In most cases, students cited 'stumbling' upon sustainability related information while looking for some other piece (s) of information which maybe un/related. Two of the interviewees recollected expanding their understanding about the recent global food crises, from a local to global growth perspective; and credited newspapers, magazines and the internet amongst the (script) sources of information. In another insightful example three of the students mentioned reading Ruskin Bond[17] stories and then making a comparison to the places described in his works with the present situation described in news articles.

Marathi:

While local newspapers, small selection of comics and story books were available in Marathi for students to choose from, the quality and availability was subject to many conditions. The students interviewed appeared to search for sources of written information in Marathi to a lesser extent than their peers in the English section. Two main reasons cited were lack of available texts and variety of information. However, the

[17] R. Bond is an Anglo-Indian author who has written many books and stories about nature, especially around the Northern foothills of India and was awarded the Padma Shri for his contribution to children's literature. All his works are in English. http://en.wikipedia.org/wiki/Ruskin_Bond.

comfort zone they identified with the language, was in conflict with information procurement.

3. E & M) Non text sources of information (Television, videos, movies, plays, information promotional events, music, etc)

English:

A common favourite and fairly recent movie that entertained students while carrying the underlying message of bad decisions made with regard to the environment was The Simpson's movie. Although the respondents did not understand all the subtle hints the movie entails, they highlighted a few examples they comprehended. (Western) Pop icons, movie stars and celebrities were also a contributing factor to their awareness of certain social and environmental issues. Many local plays and street performances that promote topics discussed in this study used certain English words (e.g. chemicals, gas) the students noted. When international days like Earth Day, Earth Hour, and World Environment Day etc are observed, the terms and essence of it is usually maintained in English and a small portion of the idea is translated. Music, the researcher found was a widely contributing factor and a barrier beyond English.

Marathi:

In this group students noted that most informative movies and films viewed did have the capacity to highlight socio-economic agendas (e.g. caste system) but upon further queries it came to the authors notice that they (media influences) were symbolic of cause and effect as opposed to precautionary. Moreover they were aware of International Days albeit in English, and deeper understanding of the representation of these events was found to be unclear. Influences from music sources within the Marathi language students believed, resonated the importance of natural elements and anthropogenic stewardship towards them, however there seemed to be an absence of interconnected modern (post industrial) and global problems addressed (as compared to the English equivalent). They noted that certain degrees of bilingualism assisted them in understanding particular words/phrases like rain water harvesting, traffic, banks, government, flyover, train, cholesterol, etc.

2.3 TEACHERS

A total of eight teachers were interviewed, four from each language section and taught Language - Marathi/English, Science, Geography and Social Studies. All teachers interviewed were female.

T.1) Are topics beyond the realm of syllabi discussed in the classroom?

Marathi section: Dialogues are introduced with regard to issues that students face in their day to day lives like power shortages or the recent food crises. Topics like these they relate to and can sometimes bring a positive and strong contribution to the debate. The information they come with is usually details of the reality they experience and/or news pieces.

English section: Subjects beyond the textbook regularly feature as part of classroom debates. Discussions at home, headlines from newspapers, magazines, TV news, radio etc all contribute to content of information that students bring into the classroom.

T.2) How do you introduce non-text book topics into the classroom for discussion?

Marathi section: Events that make a lasting news impact or popular subjects/events that are experienced (locally) are brought into discussion. Students are asked why and how they acknowledge them. Opinions are then shared or opposed.

English section: New making affairs are brought up. Occasionally the experience of one or a few students (e.g. over the holidays) is discussed. When taking sides on a topic, they are encouraged to substantiate their arguments with legit data.

T.3) What kinds of activities are set up for awareness/realization regarding - Waste/Garbage volume

Marathi & English section: A school project involved assigning the students with the task to note the amount of waste paper and objects of similar material that was littered in the compound area of their respective apartment buildings. Returning the litter to those who disposed it was part of an initiative to increase awareness of litter issues.
It is important to note that this exercise was an initiated by a teacher from the English section after she read about a similar practice performed elsewhere (S. America).

Water usage

Marathi & English section: Students were given an assignment to note points of water wastage around them. While the Marathi section pupils focused on domestic water usage, the English medium students made an estimation for domestic as well as water used at school. This additional wastage that these students took into account was after viewing an entertainment video showing water being misused on a school premises.

Food consumption

Marathi and English sections: Both groups, the teachers noted appeared to display similar results, when a project was created to understand domestic food consumption and related matters like production, packaging and food miles. The English students correlated their study to a few chapters in their science text books they had studied earlier on food.

T.4) Why do you think students or their parents chose the Marathi/English section for education?

Marathi:
The school encourages parents who have little or no knowledge of the (English) language to enroll their wards in the Marathi section of the school for a variety of reasons. Support and practice of the language was a popular reason. Within the Indian educational system, grades are often given more attention than the holistic process of learning and therefore they (school authorities) believe that studying in a language that would be foreign to them, due to the absence of or minimal exposure would deliver lower grades. However, teachers noted that in recent times there has been an alteration in preferences from parents who had vocations like vegetable vendors. Even though they were aware that it would be difficult for their children to learn multiple subjects in a different language they chose English over Marathi. Better economic opportunities were a prominent reason for their choice.

English:
A considerable portion of the parents who chose to send their children to the English section had been educated (either partially or completely) in English themselves and recognized the advantages it provided. Moreover they believed that it was a window to constantly evolving information around them (the children).

T.5) Do parents have a strong influence on the pupils' educational progress?

A two fold range of influence was observed by the teachers:
Directly – teaching at home, assisting with home work etc.
Indirectly – (in) affordability

T.6) As a teacher, what do you prefer to do to ensure the class is up to date with current themes (in sustainability)?

Discussions, debates, projects, role plays, exhibitions, Audio visual aids and media feeds are among the many preferred tools teachers mentioned they would favour to enable students to learn. However, due to budget constraints this is rarely a possibility. They usually use news items to foster thematic non-syllabi learning.

As media and technological influences were regularly high lighted as the prime initiators for such realizations, the author asked the Marathi section teachers, what they did to bridge the language divide that clearly played a role in knowledge procurement and therefore further awareness. They (teachers) then revealed plans that the school has been working on to bring a 'semi-Marathi, semi-English' section in the school where some subjects would be taught in English, and lessons would be imparted in a way that students who had no assistance from their homes (in English) would be able to cope with the learning process without depending on extra tuitions that inevitably are a financial burden.

T.7) In what language is the computer class conducted? Is there an adoption of terms and phrases from other language(s) than the medium of education?

Marathi: Many technical words like computer, mouse, software etc are used for what they are, i.e. the English words are used. However the instructions are imparted in Marathi.

English: All instructions and terms are in English. Unless a student is having trouble understanding a sentence or so in English and then that is explained in Marathi or Hindi.

2.4 PARENTS

Five parents were interviewed. Three of whom had their children in the Marathi section while two in the English section. Of the five interviewed there was one father and four, mothers. They volunteered to be interviewed through requests they received from the researcher via their wards.

P.1) Do you think it is important for your child at his/her age to learn about the cause and effect of current issues with regard to trade, industry, agriculture etc?

The interviewer received a range of answers that reflected the different sentiments, values and expectations the parents had with respect to the education their children were receiving. Before going on to describe the parents opinions, the researcher would like to draw the readers' attention to the significance marks/grades have within the educational system in focus. The final mark given to a student is given more importance than the learning process itself. This information comes from teachers' interviews as well the authors' personal experiences.

While one parent completely agreed that education should be part and parcel of understanding current issues, their formation and possible solutions or future effects, the remaining anticipated and expected differently. The importance on the matter ranged depending on how much this would affect future grades and admission into higher education. While two parents mentioned that they were confident their children would be aware about current issues and related information "*when they (kin) would require information of that sort"*.
Two (Marathi) parents did not see the direct link between current issues and employment for their children, which they perceived as the highlight of receiving and education.
A synopsis of this section of the interview persuaded the researcher to believe that parents who's kin attended English section and were educated to a certain degree themselves, were more likely to comprehend the importance of current issues awareness rather than leaving it for 'later'.

P.2) Do you believe that the minor language your child is studying may influence knowledge acquisition regarding matters outside the prescribed syllabi?

This question yielded a significant demarcation in the answers received. While all the parents whose children attended the English section, immediately conceded to the fact that Marathi was important to understanding local state of affairs and worthwhile for smaller official purposes like obtaining transfer certificates etc and maintaining a link to the culture, it did not serve a very large purpose on knowledge acquisition.
The Marathi students parents noted that English enabled them to make more informed choices at the convenience store or even when watching the news. However, they did not cite many examples of it (English language) enabling knowledge acquisition as the researcher had hoped for. The quality of English taught was then inquired and resulted in

the author learning that it did not meet the same level of difficulty as the Marathi taught as a minor language to the English section students.
Overview: Due to the discrepancy of minor language levels taught to both sections the researcher found it challenging to discern a clear difference or impact between the two.

P.3) If yes, what measures are being taken from the domestic front to ensure that a language barrier may play a minimal role?

A collective answer for this part of the interview was exposure to news and audio visual media in order to understand or grasp the language better. When interviewees were then asked to correlate this practice with their belief on current issues not being of utmost importance for children's education; the popular answer was that it was the language exposure that the media offered at a low cost and not necessarily the content that they sought for this purpose.

P.4) If you agree that technology and modern media plays a significant role in learning more about the human world vs. natural world tensions, how do you enable your child (ren) to achieve that?

After mentioning economic barriers as a remarkable hurdle, all parents did agree that technology and modern media was important to learning. Two of the Marathi section parents noted that if children were exposed and allowed to interact with a piece of technology for long enough, they began to understand the language it operated on/displayed information in. While the English section parents did not perceive anything beyond economic factors as barriers to the aforementioned achievement.

2.5 General/overall results

Society & Culture:
While for some students and parents it appears to be the natural choice for few others it seems to be a conscious choice in order for a perceived prosperous and successful future, when it came to choosing English as a language medium for education. This group did not view education in English as a distraction or lure away from inherent and local culture. A higher number of students were non-Maharashtrians in this group.
Whereas in the Marathi section both students and parents believed that being educated in ones mother tongue was the best way to maintain strong ties with the native culture. The sentiment was similar, maintaining that an initial and firm introduction to the language was imperative. While some recognized the role of English language, keeping it on the back burner until 'later' was the prevalent mode of behaviour observed.

Economy:
Choosing English appeared to be an economically viable choice for most. According to most respondents many more opportunities lay within knowing English well and was

perceived as a global language. Thereby not learning a popular global language that was relatively easily available did not carry any benefits.
Many Marathi interviewees believed that the extra costs incurred with an education in English were not affordable and to level the playing field they would learn the language at a later stage. This desire to learn the language stems from the idea that it provides many economic opportunities and the liberty of other probabilities for a better livelihood.

Technology:
This was a clear line of demarcation with English playing a hegemonic role in technology, and thereby the awareness about sustainability and its related issues that are constantly evolving. Information communication technologies like the internet, television, news feeds and even the stock market all operate to a very large extent in English. And teachers in the Marathi section who taught computers admitted to the lack of technical language. Marathi section students who did not know any English were not found to access the internet at all. Conversely, lack of knowing the Marathi language did not affect English section students in acquiring information to both sustainability and non sustainability related.

Others: The attached idea of status of choosing English was a feature the author found as an underlying sentiment with all 3 interview groups. The basic ability to have a certain command over a 'global' language and thereby an increased sense of information absorption from their surrounding was one of the many reasons for this sentiment of a higher status. Moreover, the economic strings attached to English as a language in the Indian context supplement the higher status notion.

2.6 Barriers discovered

Economic: This was found to be the largest hurdle for many who did not get the opportunity to learn English. The perceived costs or actual costs or a combination of both costs acted as deterrents.

Social/cultural attitude towards the language: The colonial/western flavour of English that some parents and students (from the Marathi section) identified as a threat towards the native and local language acts as an obstacle towards information on sustainability awareness that may not be available in the local tongue.

Differential evolution rate of Marathi: The absence of many words, concepts and thereby academic/ knowledgeable ideas and subjects within the realm of sustainability plays a significant role in the language divide. While the author admits to the argument that these words etc were born in the West, the dearth of their equivalents within Marathi impedes awareness.

2.7 Reasons for successful awareness of sustainability and its related issues (from primary empirical data)

Bi/multilingualism (inclusive of English): Unsurprisingly, those students who understood native languages as well as English had the best understanding of events and occurrences on global, national and local levels, and answered questions comprehensively.
Access to ICT/media sources: While a basic economic capacity is a perquisite for access to most sources of media and ICTs, a basic command over the English language proved to open many more sources of sustainability related information.
Domestic interaction and encouragement: Apart from economic and cultural attitudes towards languages, parental encouragement and support towards information procurement and absorption played a role. While mere dinner table discussions and reassurance from parents/guardians to participate in conversations that involve current events etc displayed a difference in sustainability perception. However, the author would like to point out that this was not a factor that was applicable across the board. In cases where parents were illiterate or very poor or both the discussions differed greatly from those who were literate and were in the economic middle class.

2.8 Empirical respondent based solutions

The most popular replies to the conundrum students were posed with were:

Need for a universal language
Learning English
Learning foreign languages
Need for bilingualism

CHAPTER 3:

DISCUSSION

3.1 Weaving theory with observations

"Universities in Bombay or Singapore resembled those in London or Leeds" (Altbach, 1989).

After having conducted a field study, and a corresponding theoretical exercise it has been established that a generous portion of scientific information and communication is carried out in English. As is the volume of academic and literary work in English and West European languages that has hegemony. The post-colonial impact on education was the medium of administration and higher education.

Popular culture reference:

If advertisements can be accepted as part of the cause and effect of the reflection of society[18] it projects and is created for, then a befitting example to cite within the context of this paper and in support of the author's argument would be the IDEA cellular advertisement/campaign 'Education for All'.

Here cellular technology is displayed as a solution to India's need for quality education for a growing population with limited resources. However the author would like to draw attention to the fact that it shows a possibly illiterate or semi literate rural man trying to get his grand daughter admission into a convent school. Later in the advertisement with the help of cell phones scores of village children are shown to be (remotely) receiving English education. It is noteworthy that a product/service promoting itself "for the common man" and targets the lower income populations would select an issue that concerns them and they identify with. Tollefson and Tsui support this view point. (Tollefson and Tsui, 2004, pg 184)

Another area that calls for confrontation is questioning the need for sustainability awareness in a social stratum that has a fairly low environmental impact due to income levels (mainly). Economic growth of the country is a notable precursor to a hastened improvement in lifestyle. However, understanding the implications and environmental burden that comes along with this upgraded lifestyle does not follow at the same pace. This hampers public participation decision making processes. In an ideal situation where all the information of possible sustainability related risks and issues of a proposed project were disclosed, in a local language. A certain amount of the content would get lost in

[18] Journal of Consumer Research - Images of ourselves: The Good Life in Twentieth Century Advertising, Belk R & Pollay R – March 1985; pg 888

translation. It is difficult for far sighted decision making to formulate when very few or none of the participants have undergone similar conceptualization exercises earlier.

Language policy and implementation needs to account for the entire population's well being, on a holistic level. Sentimental and ethnic affiliations of minority language users are as important as linking them economically and otherwise to dominant language using regions i.e. developed English speaking nations (Kelman, 1971; pg 48). Moreover within the Indian context, the artificial supremacy of native languages promoted at the time of Independence created a strongly subjective overview of equality between them and English, then perceived with a negative imperialistic sentiment. (Khubchandani, 2003; pg 244)

3.2 Answering research questions concisely

- Are students aware of the concept of sustainability?

The researcher avoided using the word 'Sustainability' due to its absence in Marathi, and kept in mind that the term was born in the West. Students were interviewed about sustainability ridden themes and situations that they experienced on a regular basis or development etc that was occurring around them. There was a marked difference in the views and opinions between students of the two language sections. Awareness in terms of processing the mistakes and solutions and events of weather patterns, town planning and effect of product launches etc was found to be significantly greater among the English section pupils.

- Does the absence of functional words/concepts like 'sustainable', 'ecological', 'energy security', etc (in Marathi) lead to a reduced ability of long term analytical skills related to sustainability?

The researcher found indirect and some causative links that connect the two issues. Empirical research found that Marathi section students were very aware of events that they could see or experience and in some instances described problems that they foresaw without knowing the term for it. This mainly was due to the absence of such words and terms in Marathi.
E.g.: when interviewed about the issues the Tata Nano car may yield, one boy (Marathi section) described the increased probability of people getting angry and frustrated at traffic conditions. He was describing road rage.
However, the continual links that any sustainability issue has transcends from local to super national requires information feed-ins from a variety of sources. The researcher found that this was acted as a significant barrier to awareness. Therefore, language originating information gaps proved to be a contributor; to differences in analytical and perception of sustainability and its related subjects.

- Do teachers recognize a language based gap? If so, what are they doing to bridge it?

Teachers understand the predominant two fold reason of economic barriers and higher grades[19] that encourage most Marathi section students are admitted there. However, they also seem to recognize the imperative and abundant functions English has. Therefore, to address the issue, the school is in the planning stage of introducing a section of the school that will offer education in equal portions of both languages. It is an advantage that all teachers are at least bilingual, if not multilingual

- Do parents recognize the language based deficit and if so, how do they justify the choice they made for their kin?

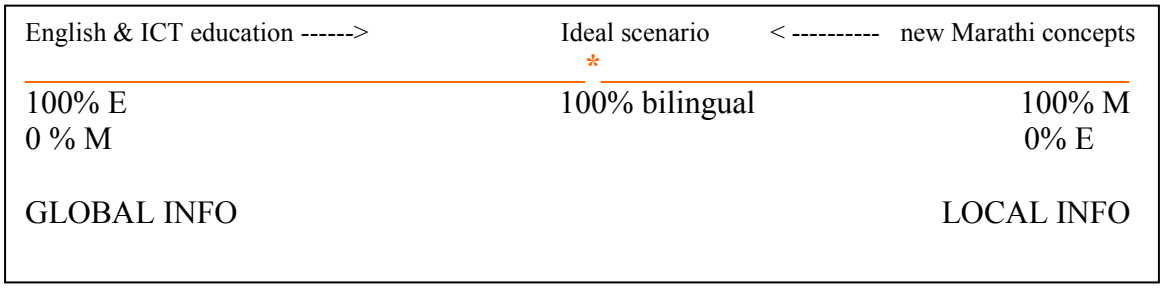
Lack of capital and cultural ties or perception of English as a language was a larger reason that Marathi section parents chose the language over English. The English section parents did not believe their kin faced a (native) language deficit even if the students were not fluent in it. Better prospects and all round development were cited reasons for choosing English.

- Does ICT play a significant role in the knowledge import and export that shape the way students perceive and process information around them?

ICT was discovered to play a highlighted role in informal and formal information procurement and knowledge acquisition. Debates and counter arguments, buzz words, fads, and sources of entertainment like music, films and computer games were all found to be contributing factors to the way they absorb and communicate ideas, thought flows etc.

3.3 Possible action that can be taken to increase awareness of sustainability and its related issues.

Fig. 2 M – Marathi speakers; E – English speakers



[19] Due to the comfort zone the language provides, higher grades are discerned to be more easily attainable as compared to education in English.

- Increased access to English language without an attached economic burden in both, actual and perceived terms.
- Evolution of Indian languages/Marathi to keep pace with the growth on scientific and technological fronts is necessary; along with functional use of terms within native language(s).
- Enable exposure to common ICT mediums for students, giving them the freedom to choose language of operation.
- Enable dialogue of sustainability issues with students in other locations thereby, increasing comprehension and appreciation of such subjects, through the eyes of their peers. Transform a local citizen into a global one, within a classroom.

3.4 Limitations of the results

Lost in translation:
Interviews were conducted English, Hindi and Marathi. When the interview came to the subject of sustainability and related issues, it was a paradox of sorts, since that is precisely what the paper tries to address.

Personal design:
The interviewer had to constantly bear in mind that most people she interviewed had a bias towards either language and thereby were not completely factual.

Parental influence:
This in many ways was a collective of confounding factors. Parental income, attitude towards gender equality and academic background played a crucial role in the language their kin was educated in and the access to information and level of participation in worthwhile discussions that occurred in the family.

Teachers input:
The researcher found that the teachers were exceptionally helpful and willing to talk. However their ideas and opinions were coloured by the subjects they were trained to teach and the language they were instructing in. In some cases the language they were educated in was not the same as the one they were educating students with. This group of teachers seemed to have the most objective viewpoints as compared to others.

Technology:
The discussion of technology bringing most feasible sources of information and its presence in English (mainly) compared to other Indian languages; posed a problem for those who didn't know the language (English). There seemed to be a small input of 'opinions' which were not always supported by a logical framework, and appeared to originate from social and cultural tangents. This made the discussion challenging for the researcher.

Technology with teachers:
During interviews with teachers who taught computers to the Marathi section, comprehending the method they chose to incorporate English words into instructions was not entirely successful by the researcher. E.g. words like computer, start, click, software, mouse, key board were not translated into Marathi. Therefore even though they were educated in Marathi, there were certain words whose equivalence in Marathi was unknown to them. Teachers mainly cited lack of representation of translated words from the centrally distributed syllabi as part of the issue.

Questionnaire shortcomings:
The design and layout of the questionnaire in Marathi was not up to the desirable standards and there by cost the research in terms of the transdisciplinary opinion sought from the Marathi medium students. The open ended question (no.10) in English had low print quality and thereby was missed out by a few students.

Qualitative section shortcomings:
One of the confounding factors that the researcher realized may interfere with the attempt of an objective approach to the interview was the voluntary basis on which the interviewees (parents and teachers) were the only individuals whose opinions and insight on the matter was selected. In this case the interviewees were aware of the subject of research before they volunteered, and thereby a

3.5 Conclusion.

Reiterating the central position mentioned in the introduction, English is a highly important language for sustainability awareness among the Indian school going population. However, stress on the requirement of English does not diminish the need for evolution of Indian languages. Lifestyles and technology that many middle class Indians have adopted do not match the pace of Indian language/Marathi growth, in terms of words, concepts and language development.

Inserting common words like internet, petrol, etc into functional use of Marathi is often observed. This partial bilingualism gives rise to status attachment and language inequality. And this inequality in turn leaves a significant portion of the ‘fluent English speaking population’ without the heritage, archival scientific and local information that Marathi provides. Exposing students to multiple languages at an early age would give them the opportunity to connect information that transcends community sizes, and thereby improved comprehension with regard to sustainability.

ACRONYMS

ATM – Automated Teller Machine
CAI – Computer Accelerated Instruction
CALL – Computer Assisted Language Learning
CISR - Council of Scientific and Industrial research
E – English section
ESD – Education for Sustainable Development
ICT – Information Communication Technology
M – Marathi section
NGO – Non- Governmental Organization
NMHS – Navi Mumbai High School
TFI – Teach For India
WB – World Bank
WCED – World Council on Environment and Development
UN- United Nations
UNDESD – United Nations Decade of Education for Sustainable Development
UNESCO – United Nations Education, Scientific and Cultural Organization

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Appendix 1

- **You can choose as many options as you deem appropriate.**
- **You are free to add your opinion to as many answers as you wish to.**

1. Your reaction on the introduction on the Tata Nano car on the roads.

    - India is a developing country and many more people will now have their own cars.
    - Traffic will worsen.
    - More fuel will be consumed and drive the prices (of fuel) upwards.
    - After the initial excitement, efficiency of traveling (time/cost) will reduce with the usage of a car.
    - Traveling will become easier and more comfortable for the common man.
    - Any reasons not mentioned above

    _____

2. Over the past 5 years, monsoons in Navi Mumbai have:

    - Stayed the same
    - Improved
    - Worsened

If you choose the 3rd option then:

3. Options to prevent/reduce flooding, in the future would include:

    - Better pipes/drainage system + better city planning
    - More green spaces for water to be absorbed into the soil (less concrete and built spaces)

- Improved water harvesting techniques
- One can't control the weather/climate
- Build roads, buildings and railways at an increased height.
- Any reasons not mentioned above

_____

4. Navi Mumbai faces power outages/black outs because:

- Demand is more than supply
- Power cables snap a lot
- Inefficient energy use
- Low reliance on solar and wind energy (renewable energy)
- Any reasons not mentioned above

_____

5 Have you heard of the United Nations – YES / NO

6. If yes, then where/how did you heard of it?

- Newspapers/Magazines/TV/books/conversations/movies
- If any other, please specify._____

7. Do you know about the Millennium Development Goals? YES / NO
Where did you learn about it? _____

8. Water electricity and food are some of the important issues that face scarcity today. What do you feel are the reasons?

- Over population
- Bad management
- Poverty
- Illiteracy (most people do not know how to use and save these precious resources wisely)

Any other reasons: _____

9. In order to understand local and global social, economical and environmental issues better, is there any other language that you feel would help you achieve this? If so, kindly specify: _____

10. Many people in few cities or few people in many cities. What would you prefer seeing and why?

_____

11. Why did you choose/ your parents choose English medium education over another language (Hindi/Marathi/ regional language)?

12. If costs were not a barrier, would you choose to study in another language?

13. What language(s) are spoken at home?

14. Is there any exposure to the Marathi language at home?

15. In your opinion, is the knowledge of both languages (English & Marathi) necessary to live in Navi Mumbai/Mumbai?

16. As a child/student are you a participant of discussions that relate to social, environmental and economical issues on local and global scales at home?

17. What are the mediums of media that you are exposed to at home?

- Newspapers
- Television
- Magazines
- Internet
- Any other, please specify_____

18. Is reading apart from mandatory school material encouraged at home?

Appendix 2

17	28	45	16.41891892	27.36486486	0.020565009	0.014741408	
10	19	29	10.58108108	18.41891892	0.031911222	0.018331978	
27	47	74					0.085549617
27	47	74	37	37	2.702702703	2.702702703	
23	3	26	13	13	7.692307692	7.692307692	
50	50	100					20.79002079