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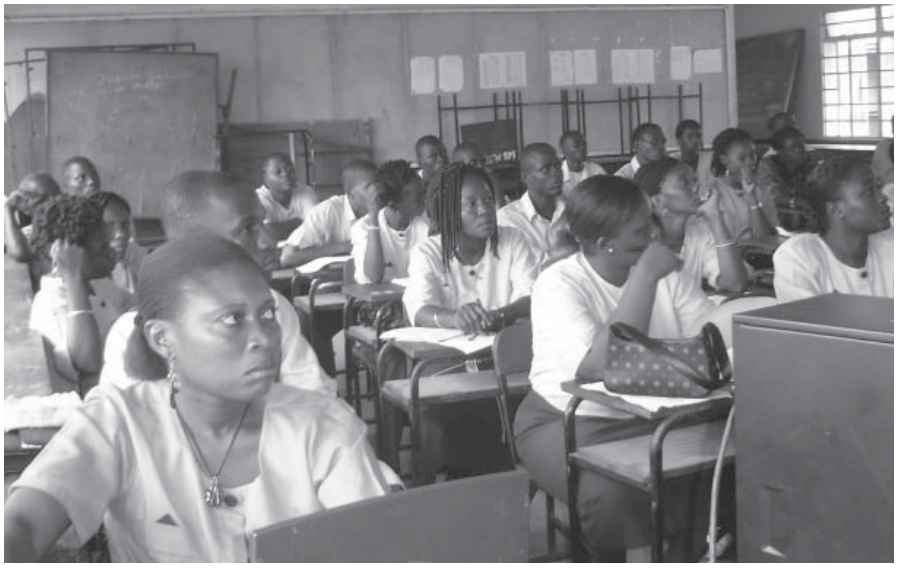
Gender and Curriculum Issues in African Education

Contents

The June 2005 issue of IICBA's Newsletter examines the extent of gender mainstreaming in education. Over the past three decades, we have been reminded at workshops, seminars, and conferences that gender equity is an issue for effectiveness of development programmes, not just a matter of political correctness, or as some colleagues believe, kindness to women. Statistics indicates that the gender gap remains a very serious problem in nearly all developing countries and at all levels of education. Although some 40 percent of girls in the Least Developed Countries (LCDs) are not able to access even primary education, new evidence shows that when women and men are relatively equal, economies tend to grow faster, the poor move more quickly out of poverty, and overall standard of living of all is greatly improved.

This issue of the newsletter examines gender and curriculum issues in African education. The first paper by Dr. Euphrates Gobina, *Why African girls are still not getting into areas of science and technology* looks at the options, strategies and gender differences in enrolment patterns of secondary school students in Cameroon. She argues that girls' decision-making about subject choices are complex and also contradictory. While the school plays an important part in influencing girls' subject choice including the gendered and classed nature of their school experiences, the curriculum, the teachers and teaching methods are significant in pushing girls away from the science and technology options. Some of the underlying causes of gender disparities that lead to girls' systemic gender difference in enrolment patterns and barriers to post-secondary education include poverty, the persistence of negative socio-cultural attitudes and practices, lack of girls' empowerment, gender insensitive school environment and teachers. However, all hopes are not lost as teachers are nowadays looking for alternative strategies and modern teaching approaches to create inclusive learning environments for girls as well as boys.



In the second article, Dr. Temechegn Engida looks at the prospects of a *Critical practitioner inquiry approach to achieve gender equitable teaching and learning*. Temechegn compared the spatial ability of boys and girls in both German and Ethiopian schools (grades 7-12). He found that in both cases boys outperformed girls in the classroom and that although the teachers and the methods they employed were not intentional to the detriment of the girls, the outcome is the same – girls continue to avoid certain career subjects. Temechegn contends that the teachers themselves can contribute a lot towards achieving gender equity in their own classrooms. The way to do this is through the Critical Practitioner Inquiry (CPI) approach in teaching and the learning process. The CPI approach focuses on the inquirer's own practice and the various policies and strategies available within a teaching and learning context. It is a teaching-learning-action-research strategy. Dr. Tememchegn believes that this teaching approach, which has just been tried by UNESCO-IICBA in Ethiopia, is one that holds prospects for change of methodology – a methodology that encompasses gender equitable sensitivity. That is one way teachers can begin examining their practices and creating inclusive learning environments that cater for the needs of girls and boys in teaching and learning situations.

Drawing from the personal experiences of an ICT education, the last article exemplifies how girls and women could benefit from the use of ICTs. It also examines the prospects and challenges of a technology-enhanced classroom

in achieving gender equity in teaching and learning. Mr. Iginio Gagliardone argues that even though ICTs may appear gender neutral, effective strategies must be developed to make ICTs more gender inclusive. Based on his practice in Tunis and Rome, he found that teachers could emphasize on the communication aspects of ICTs rather than on the technical aspects to make it more appealing to both genders. His position, though inconclusive and needs further research, is simple: girls are attracted to ICTs when used in the wider context of society rather than as a simple tool for office automation.

We are well aware of how the Personal Computer (PC), even more than the mainframe and the minicomputer before it, is transforming computing for those who use computers and even the nature of our society and life in the 21st century. It is a change so fast, so profound, so complete, that Africa will be worse off if its use of ICTs in education ignores our women and girls.

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Why African Girls are Still not Getting into Areas of Science and Technology

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The literature on gender and schooling in Africa provides a number of interesting insights about the reasons for gender differences in enrolment patterns of secondary school students. Researchers and funding agencies interested in socio-economic development have attempted to understand gender and schooling in terms of the socio-economic importance of female education and the home and school factors that account for gender differences in academic participation, persistence and achievement. Education and development experts who advocate for increased female participation in formal schooling argue that education for females is an essential part, if not a determining factor in the national economic development process (Seidman & Anang, 1992; Visvanathan, Duggan, Nisonoff & Wiegersma 1997). Schooling provides the credentials that enable girls and boys to enter modern occupations and expand the scale of their commercial, productive and agricultural activities. While Blakemore and Cooksey (1981) hypothesize that the skills and qualifications that are obtained through schooling are directly sold in the job market with the most qualified getting the best jobs, the high wage gains enjoyed by those in areas of science (medical doctors) and technology (computer engineering) exemplify the hierarchical nature of the labour market.

Other studies examine the home factors such as parents' education, occupation, and socio-economic standing of the parents (Nfou, 1997), and school factors such as gender, curriculum content, school climate (Hari, 1998; Torto, 1998) as they affect girls' access to and participation in different subjects. Findings indicate that many girls in Sub-Saharan Africa are not enrolled in school. When girls do enrol, they drop out more frequently than boys and their academic performance compared to that of boys is poor at every level of schooling (FEMSA, 1998; Hartnett & Heneveld, 1993; Leigh-Doyle, 1991; MINEDUC, 1990). Noteworthy, only a few girls enrol in science and technology areas (Hari, 1998). While these studies identify home and school factors as accounting for gender differences in participation, persistence and academic achievement, they have failed to examine these disparities from the perspective of the female students concerned. The data sources in many of these studies involve perspectives from parents, teachers, school authorities, and community leaders.

Little research has examined girls' experiences of schooling and how their experiences influence their academic and career choices in Africa. Although extensive research has been done on gender and education in Africa and organizations like the Association for the Development of Education in Africa (ADEA) have created working groups such as Female Education in Mathematics and Science in Africa (FEMSA) to enhance female participation in science and technology, little research has been done on how female students make subject choices. It is apparent that several factors affect female students' decisions to select one academic specialization over the other. Girls from different socio-economic backgrounds perceive their educational experiences differently through the kinds of interactions they have at home, school and in the society as a whole, and these different perceptions influence their school and career aspirations. Consequently, girls' constructions of schooling and how they make subject choices must be understood in order to integrate girls into areas of science and technology and into the socio-economic development process.

Against this background, a qualitative study was conducted in Bilingual Grammar School Molyko-Buea, in the South West of Cameroon, with 20 female students aged 14-18 years old and in their fourth year (Form four) of secondary schooling.[1] The inquiry focused on: 1) how female form four students of different socio-economic backgrounds construct their educational experiences, achievements, and aspirations; 2) how these experiences and achievements influence their future subject choices; and 3) the ways the girls' aspirations and experiences are negotiated within the context of the school. The primary purpose was to expose and draw attention to the gender specific experiences of girls from different socio-economic backgrounds as they make their subject choices and subsequently, their decision to participate in different areas in post secondary education and the wage economy. The findings presented in the subsequent sections are drawn from the analysis of data that was primarily collected through participant observation, semi-structured interviews and focus group discussion. The data was analysed in the light of rational choice principles, decision theoretical approaches and grounded in an African conceptual construction of gender.

The findings suggest that girls' decision-making about which subjects to take are complex and contradictory. They described explicit ***aspirations*** in seizing opportunities that will better their and their families' future lives. However, these aspirations are tempered by characteristics of the ***student/personal self*** such as their actual academic performance, and their interests in and liking of school subjects. Their ***school*** plays an important part in influencing their subject decisions, including the gendered and classed nature of their school experiences, the curriculum, the teachers and teaching that are part of their life in school. Finally, their ***families and communities*** are central influences on the careers they pursue and the subject decisions they make.

Occupational Aspirations

The way the girls see their future beyond form four is a central influence on what subjects they choose to take at this pivotal decision point in their schooling. This section on aspirations describes how the girls see their future and their views are both idealistic and shaded by real limitations they perceive. The findings in this section are consistent with Gray and Herr's (1998) position that educational opportunity is regarded as a means of achieving income, status, prestige, security, recognition and social mobility. The participants' choices were consistent with what they saw as relevant in their lives. Although socio-economic status of the parents from the elite and middle class backgrounds appeared to relate to the occupational aspirations of the girls, this was not the case for those from a working class background. The socio-economic and socio-cultural environment made the students' aspirations and choices complex. Zey (1992) identifies these sociological challenges as some of the limits of human rationality. Some of the findings are consistent with those reported by Donaldson and Dixon (1995) and Kithyo and Petrina (2002) in that both these studies reveal that gender influences the choice of subjects or programs that girls aspire to because they consider their future expected roles in selecting their programs. Finally, social capital in the form of relationships among people and the information channels that these relations provide played a major role in the girls' decision-making.

The future career aspirations that form four girls describe are both idealistic and instrumental, first in that schooling is instrumental to securing a job and income, and secondly that the job and income are instrumental to status, recognition and prestige that they yearn to attain. Some articulate their aspirations in terms of simply having a better education than their parents and being a better person in society. Their aspirations are encouraged and discouraged by their readings of the broader society, for example, media,

[1] It is important to note that Cameroon runs two systems of education usually referred to as the English and French systems due to colonialism. The English system provides for six years of primary schooling, five years of secondary schooling and two years of high school before spending three years at the university to obtain a degree (6-5-2-3). The French system provides for six years of primary schooling, fours years of secondary and three years of high school before university which lasts for three years (6-4-3-3). This research was conducted in the English section of a school that follows a French and English systems of education. Form four was selected as a major decision point because it is in this class that students are called up to make subject choices; to choose between the arts or the sciences. Once this choice is made, it is impossible within the Cameroonian system to change as a student has to possess prerequisites in sciences to be admitted to do any science related specialty at the university. Subject choice decision is a major life decision and students are expected to make reasoned choices at the age of 14 to 16. This decision is going to determine their academic specializations at the university and the wage economy.

the job market, and the valuing of science. Their aspirations are also both encouraged and discouraged by their friends, their families and extended families of friends, their parents' advice, their family wealth, and their obligations to contribute to the financial wellbeing of their families. For Form four girls, their aspirations are the futures they imagine for themselves, and their school subject choices are made with these aspirations in mind. Their aspirations are however tempered with a form of reality check that comes with awareness of the student-personal self that is examined in the next section of this article.

The Student-Personal Self

Although the girls in this study come from different socio-economic backgrounds, they all made choices based on their vision for the future goals and the economic reward and prestige that it would yield. The nature of their choices revealed that they were able to risk taking certain subjects only to the extent that it was profitable and will facilitate their success in the future. In the course of making these choices their aspirations are tempered by their individual characteristics. The girls insist that they would only take courses that they have been succeeding in and were confident to obtain at the General Certificate of Education (GCE) Ordinary Level. This is consistent with the findings of Kithyo and Petrina (2002) who examined the factors that influence students' career choice programs in two technical colleges in Kenya and concluded that the grade a student obtains plays a major role in their choice of program in high school. Similarly, Donaldson and Dixon (1999) assert, "student perceptions of their ability to achieve often affect their decisions about what courses to take or what career path to develop" (p. 41).

The future career aspirations of the girls described in the first section of the article are tempered by the realities of their schooling experience, specifically their academic performance and whether they believed they understood the subjects and were passing in them. A second dimension of the student-personal self is the girls' interest in and liking of the various subjects. The girls' liking and interest in subjects in addition to their academic performance contribute to a sense of identity for the girls as either an arts student or a science student. At least they begin to see themselves as being inclined toward one or the other. The girls are using the opportunities available in their context to develop identities and affinities that are liberating. In Stamp's (1995) words, they are active agents in determining their own future career paths.

In this section we see a commonality in the views expressed by students from the different socio-economic backgrounds on how their interest in and liking of specific school subjects leads them to continuing to enrol in those subjects. Their interest and liking of school subjects relates closely to the teachers who teach the subjects and whether the teacher makes the subject interesting. Interesting subjects for a number of the girls were those that related to their home life, political life, or other current issues in their daily life. Interesting subjects were also those in which teachers helped them to see the importance of the subject and used active and experiential learning. Interest and liking are closely tied to the girls' academic performance. That is, subjects that they understood and passed were those they usually liked. The girls' interest in and liking of certain school subjects together contributed to their emerging inclinations toward either arts or science subjects. Although the girls expressed their points of view about liking a subject in the light of their self, there were extraneous factors beyond the student-personal self like the school and home environments that brought about significant variations in their choices.

Influences Within the School Context

The previous section on the student-personal self highlighted individual attributes as they influence the girls' decision-making. The literature review section lay bare the underlying assumption that individuals will make rational decisions if they are informed by the probable outcomes of that choice. Nonetheless, the social context interferes with the rationality of individuals as seen in the role capital (social, cultural and financial) plays and the social construction of gender as it plays out in different geographical locations.

In this section and the subsequent one, the family, school and community are recognized as reproducing gender divisions and oppressions through the expectations that parents, teachers and friends have for girls and boys. The gendered experiences of the girls in this study are shaped by school organization and pedagogy, social institutions and cultural as well as traditional socio-economic systems. The dominant socio-cultural expectation on girls is that they be docile and engage in domestic work while boys are expected to be adventurous and to engage in the highly competitive science and technological fields of public life. This socialization contributes in school to a pedagogy of difference that does not help to create an inclusive context for girls' participation in classrooms.

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Consistent with the findings of other studies (Brock & Cammish, 1997; Cammish & Brock, 1994; Diallo, 1994; FEMSA, 1998; Nfou, 1997; Torto, 1998;) these results indicate that the school is a gendered space where teacher and peers perceive girls and boys to be physiologically different and as a result must assume distinct societal roles. These result in pedagogy of difference that designates different experiences for girls and boys through the negotiation of spaces within the school, the girls' relationship with the teachers in the classroom, and the continuous systematic bias exemplified in the dominating attitude of males over females.

One of the participants in the study explained that she would go into nursing because her family did not have adequate financial resources to support her continued schooling. It is in the upper grades that the family's finances become more important for students. When the subjects become more difficult, wealthier families with the financial capital employ tutors, or if the parents are educated, they assist their children themselves or pay for extra classes after school. For others, their parents especially mothers were the home teachers while those who were from less privileged backgrounds relied on their friends and sometimes their siblings.

Focusing on the influence of the school context on girls' subject selection after Form four indicates that the school is highly influential. Through observations in the school and conversations with the girls, the school appeared as a gendered space. Girls did not freely occupy all spaces in the school, for example they usually ate apart from the boys in classrooms. They tended not to occupy the back of the classroom like the boys did. The role models of women in the school in non-traditional subject areas or positions in education were absent. The subjects and teaching described by the girls were experienced as gendered in a variety of ways. The teachers were again shown to be key figures in the girls' lives, encouraging or discouraging them from participating in subjects, either explicitly or through their teaching practices and way of being with students. At a time when some subjects were becoming more difficult for the girls, they complained of the frequent absence of teachers from class and over-reliance on note taking and lectures. The girls also noted that they could go unnoticed in large classes where teachers do not have time to interact with all students.

Influences Within Families and Communities

Students often refer to situations and beliefs within their families and communities as influencing their educational aspirations and thus the subject choices they make. The family's education, wealth, and status of the parents serve as locus of information, provides resources for the girls, a good place at home to study, materials to aid learning and financial resources to ensure the selection of certain school subjects. The wealth of the family may also mean that they can hire a babysitter to help at home and thus relieve the girl from domestic work, employ a teacher to teach her at home, and provide money to pay for extra classes or excursions organised by the school.

Although masculinism was prevalent in the girls' daily interactions with their families at home and through their interaction with teachers and students at school, the parents from elite and middle class backgrounds held progressive expectations for their girls. On the one hand, while middle class parents encouraged their daughters to aspire to science related areas of specialization and occupations they also reinforced the notion that marriage and motherhood was also important.

Families are in a period of transition when their expectations for their girl children are changing. However, all the girls in the study experienced the dual expectations that they ought to do well in school and contribute to the domestic work of their homes and families. Thus it is striking that among the girls in this study there was little privilege evident in the way that boys are privileged in devoting themselves full time to studies or having certain advantages because they are girls. Role models that girls could find in their families and communities are influential but few.

Conclusions

The subject choices that girls make are intertwined with their aspirations to become professionals, tempered by the reality of their academic ability, the financial support of their family and the opportunities that the post-secondary education system in Cameroon provides. Socio-economic status is a main determinant of occupational aspirations of the girls in this study because it restricts the choices made particularly by the girls of working class backgrounds. The girls' decision-

making process is rational as they take into consideration their personal self and the chances they have to succeed. However, the sociological influences of the girls' choice making process remain complex and challenging. The girls held considerable faith that schooling would secure for them the better occupations and futures they desired. This belief was supported by their social, family, and community contexts.

The girls expressed considerable confidence in the opportunities available to them and what they can achieve, despite an education system that fails to provide inclusive science classrooms and a technology-oriented curriculum that caters for girls and boys. Their subject choices and aspirations may be constrained but the girls use the available educational system to select subjects that will enhance their participation in modern occupations in Cameroon. The girls are cognisant of their choices and are determined to "search for their mothers' gardens" (Walker, 1983) that is, to acquire post-secondary education and the occupations that their mothers were not given the opportunity to obtain.

Irrespective of the specializations that girls get into, it is time to step back and begin valuing the contributions and work that women in Cameroon and Africa do as a whole. After all, it is through the determination of many mothers engaging in domestic commerce, that their children are financially supported in school. While girls made up 49.7% of the population in the secondary school under study, the curriculum did not relate to their realities, experience, and ways of knowing. Instead of "counting for nothing," we should recognize the contribution women already make to economic development. This is not to undermine the importance of female participation in science and technology but the overemphasizing of their absence in these areas is a detriment to recognizing and valuing women's contribution to the family, economy and the society. Importantly, they are individuals with a lot of potential.

While this study found that the girls considered themselves to be individuals with certain aptitudes and capabilities, these qualities do meddle with their aspirations in the same way that the school and home environments do. However, the girls are working against the array of forces impeding their access into their desirable academic and career paths. Notably, whether these girls were coming from an elite or working class background or aspiring to become an art or science student, they exhibited a lot of agency by making subject choices based on their intellectual, emotional and material needs. Overall, the girls' perception of their educational process continues to be shaped by state policies, social and cultural philosophies and traditions, and the socio-economic disparities prevalent in Cameroon.

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The Prospects of a Critical Practitioner Inquiry Approach to Achieving Gender Equitable Teaching and Learning

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Research indicates that females are getting significantly poorer education than males in school subjects, more commonly in science areas. Scrimgeour's (1993) small-scale research indicates that the differential performance of boys and girls in school subjects is not limited to science. Scrimgeour observed both female and male teachers while they teach in their regular English, Math, History, and Geography classrooms. Each classroom consisted of both boys and girls as assigned by school administrators. The purpose of the study was to see whether gender differences existed in a range of formal and informal exchanges between teachers and pupils. The study has shown that the boys had greater scores than the girls in each subject observed; and that there was a general and overall bias towards boys in the verbal exchanges in class, and in the content of lessons observed, and this was true across subjects and different types of interactions.

Temechegn (2000) compared the spatial ability of boys and girls in both German and Ethiopian schools (grades 7-12). One of the purposes of the research was to identify the trend of sex differences in spatial ability of boys and girls in both cultures/countries. The size of the sample of students in Ethiopian schools (government and non-government) was 762 (424 boys and 338 girls). A comparable size of students was used in German schools (Gymnasium and Realschule). A spatial ability test was administered to all the students. The results have shown that i) in German schools, the boys significantly outperformed the girls in their ability to imagine three-dimensional structures represented as two-dimensional diagrams (as measured by the paper-and-pencil spatial ability test). In Ethiopian schools, the boys scored higher than the girls but the difference was not statistically significant, particularly at the lower grade levels. The qualitatively better performance of the boys, however, still indicates the existence of gender differences in aptitude tests; that, of course, needs further research. Further analysis of the Ethiopian data reveals that, comparatively speaking, gender differences in the non-government schools are greater than that of government ones (Temechegn, 2003).

Such gender differences in learning have certain consequences. For instance, poor educational performance is reflected in gender differences in attitude towards science and differential course enrolment patterns (Baker, 2000). Of course, such gender differences are not solely the result of what happens in the classrooms. However, there are many teacher behaviours and teaching strategies that contribute to these problems. These teacher behaviours and strategies are often employed without any malicious intent. Nevertheless, the result is gender inequity in instruction that contributes to avoidance of certain career subject areas on the part of females.

The argument in this short paper is that teachers themselves can contribute a lot towards achieving gender equity in their own classrooms. This goal can be achieved if teachers begin to critically inquire into their own teaching practices and attempt to intervene in the problems they face. In other words, the use of the Critical Practitioner Inquiry (CPI) approach in the teaching-learning process would be of great help. Note, however, that the CPI approach is not just for gender equity problems. Rather, it is an approach geared towards most of the classroom problems. These and similar CPI issues will be discussed in the ensuing pages with an overall focus on the contribution of the CPI approach to achieving gender equity in classrooms.

The CPI Approach

As Dahlstrom (2004) argues, the CPI approach focuses on the inquirer's own practice. The approach does not limit its focus to just inquiry of one's practice; rather it extends to development work based on the inquirer's practice. It thus utilizes experiences and practices developed in such areas as action research, reflective practice, social constructivism, and critical theory. "In short, it starts in contextual analysis and moves on to reflective practice and reconstructed understanding that is made official and shared through a documented knowledge base" (Dahlstrom, 2004: 2).

In the context of teaching and learning, the CPI approach is characterized as 'insider' research done by practitioners (teachers) using their own classrooms (or schools). The purpose here is to study a real classroom (school) situation with a view to improve the quality of actions and results within it (Temechegn, 2004). The actual problem in the context of the practitioner will define the focal point of the inquiry and its contextual analysis. In this context, the inquirer/practitioner develops an action-intervention plan that defines the actual solution he/she is suggesting. This action-intervention plan will be implemented in the actual context of the teacher (practitioner) and its impact on, say, the learning of students will be followed up.

As the context of the teacher's inquiry involves many stakeholders such as other colleague teachers, students, principals and vice-principals and even parents, the impact of the CPI approach is highly influenced by the consent and appropriate involvement of these stakeholders. When properly applied, we can say that the CPI approach is an ideological shift in the principles and methods of teaching-learning from the

traditional 'outsider' academic research and the resulting teaching-learning principles and methods. We can also say it is a democratic approach towards power relationship in schools and classrooms.

CPI and Gender Equity in Teaching and Learning

CPI as a research approach is a significant way of knowing about schools and classrooms. In this regard, Cochran-Smith and Lytle (1993) argue that "inquiry by individual teachers and communities of teacher researchers realigns their relationships to knowledge and to the brokers of knowledge and also necessitates a redefinition of the notion of a knowledge base for teaching… Teachers would be among those who have the authority to know - that is to construct knowledge… about teaching, learning, and schooling" (p. 43).

One implication is that if the focal point is, for instance, on gender inequity in classrooms, then teachers themselves will be the inquirers into that problem and also the developers and implementers of gender equity action-intervention plans in their classrooms. In other words, in this particular case, the CPI approach empowers teachers to apply their ways of knowing and what they can know through systematic subjectivity on gender equity.

Of course, teachers need to get training in the use of systematic subjectivity. This is indeed the intention of the UNESCO-IICBA sponsored **M.Ed. in CPI for Educators** programme that has been offered since March 2003, in collaboration with the Umea University (Sweden), to 26 teacher educators in six Ethiopian universities. The teacher educators are from various subject areas and, it is believed, after graduation they will be able to educate and train primary and secondary school teachers to be self-reflective and critical inquirers. At this stage, the teacher educators are inquiring into their own practices in their classrooms.

It should be realized that teaching (and learning) for gender equity is a difficult task. As Berge and Ve's (2000) review of previous works on action research and gender equity reveals, there were projects with a more radical feminist approach aimed at changes in positions of power. Most of these projects were devoted to consciousness raising among teachers and students and to strengthening girls' self reliance. The outcomes of these projects indicate that teachers have learnt more about gender relations and boys became less hostile in some situations. However, there were no reports or contradictory results regarding moments of real change in power positions between the sexes in local classrooms. In these projects, the teachers were not the actual inquirers of their own practices and thus "analysis of how gender is constructed and how individuals are positioned or position themselves during processes of action research are conspicuously absent" (Berge and Ve, 2000: 4).

The CPI approach, on the other hand, centres on contextual analysis and improvement of one's practices. The contextual analysis involves not only analysis of one's practice but also analysis of policy as a way of identifying degrees of freedom for action, and also the development of a scholastic perspective that will assist the practitioners in their inquiries with the aim to move away from a culture of blame and create a reflective position towards their own practices (Dahlstrom, 2004).

As described earlier, the CPI approach utilizes experiences and practices of, among others, action research. It should also be realized that the processes of transformation of gender equity and creating emancipatory classroom contexts is complex. In combining the CPI approach with gender equity visions, it is necessary to conceptualize action research for gender equity like a balancing act. As Berge and Ve (2000) argue, the process of action research for change (that is, gender equity), whenever they take place, include moments of equity as well as moments of normalization.

> *Moments of equity' here refer to occasions when one is aware that gender relations exist and can be transformed. Attempts to challenge the obstacles to gender equity are, of course, the ultimate consequence. The teachers experience power in order that girls and boys may come to see or acknowledge gender equity in the classroom. They also refer to pedagogical efforts to promote the long-term goal of gender equity... 'Moments of normalization' ... refer to explicit or implicit resistance to such attempts to redefine normal masculinity and feminity and normal gender relations in the specific context of the classroom* (Berge and Ve, 2000: 32).

It is interesting and educative to see how the authors described, with real examples, the concept of 'moments of normalization'. There was a female teacher teaching in a certain classroom. In describing a girl who, according to the teacher, behaved badly, the teacher said, "She is a real nuisance!" The girl's 'bad behaviour' was a moment when the girl claimed space in the classroom. Some female colleague teachers, who were also disturbed by girls who struggled to gain an advantage in the classroom, agreed with the teacher's opinion. Surprisingly, all these female teachers were working to develop gender equity strategies for Berge and Ve's project. The question is: Why did these teachers seemingly act against their own intentions, which are to give girls more space in the classroom? According to Berge and Ve (2000), these female teachers acted against their own intentions because they were affected by gender symbols that are already embodied. Such females "experience fear and discomfort when actions and strategies for change appear to reach a discursive limit. This is why … there are moments when teachers consciously or unconsciously appear to act against their own struggles for change" (p.37). This is what is referred to as 'moments of normalization', which indicate how 'femininity' and 'masculinity' operate to subvert gender equity.

The CPI approach to gender equity in teaching and learning, thus, faces the challenge of balancing the two moments and bringing the required change in the long-standing societal problem of gender inequity. At classroom level, gender inequity can be aggravated through various means such as:

- ***Teacher student interactions***: Can be any sort of interaction that favours the boys.
- ***Grouping students***: Simply making mixed gender groups does not promote good cross-gender relationships or dispel stereotypes; group dynamics often reinforce stereotypes.
- ***Classroom climate***: For instance, a classroom climate that involves strict rules, highly structured and teacher controlled lessons, etc. Boys and girls react differently to such classroom climate.
- ***Instructional materials, topics and activities***: Those aspects that favour one or the other sex.
- ***Teaching and assessment strategies***: For instance, most girls dislike being tested individually.

The above list of problems (focal point areas) indicates that teachers actually have a lot to inquire into and bring about changes in gender inequity in their own classrooms. Their action-intervention plans and the resulting impacts would vary depending on their actual context such as the subject and grade level they teach, the class size, the cooperation of colleague teachers and school administrators, the degree of teacher-parent relationship, the degree of academic freedom given to teachers and schools, the students' awareness of gender differences, and others.

The prospects of the CPI approach to achieving gender equitable teaching and learning are, as can be deduced from the above discussion, enormous as well as challenging. The beauty of the approach is thus the variety of crucial inquiry areas and the challenge of bringing change and development in actual practice.

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Points of view

An ICT Education Expert talks about his experiences of technology-enhanced teaching and learning and its prospects for gender equity in classrooms

> *A focus on the gender dimension of information and communications technologies is essential not only for preventing an adverse impact of the digital revolution on gender equality or the perpetuation of existing inequalities and discrimination, but also for enhancing women's equitable access to the benefits of information and communication technologies and to ensure that they can become a central tool for the empowerment of women and the promotion of gender equality.*
>
> **Kofi Annan, United Nations Secretary General**

Information and Communication Technologies (ICTs) hold the promise of economic and socio-cultural development of communities and individuals. When used appropriately in the classroom, they can enhance learning and assist to bridge the gap in inequities in student-teacher interaction in the classroom. They can also help women and girls move into new careers, expand their skills, and gain new opportunities for self-development, family stability, and democratic leadership. Through a range of distance education courses, electronic libraries, CD-ROMs, print, and other technology-based activities, UNESCO International Institute for Capacity Building in Africa (IICBA) works with ministries of education, teacher education institutions and colleges, departments of education within universities to build their capacities at individual as well as institutional levels to develop systems and services that integrate ICT education and development into African countries.

While IICBA realizes the importance of technology-enhanced learning in this digital and global age, it also recognizes that it can, in some instances, only reinforce gender inequities in education and perpetuate systemic inequality in access to knowledge within the classroom and in student-teacher interaction. In the following paragraphs, an ICT education expert shares his experiences of integrating technology in his classroom instruction.

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My experience as ICT teacher has led me to realize that new tools can represent both an opportunity to give voice to the voiceless as well as become a new discriminatory object that can widen the gap between men and women. ICTs can empower individuals particularly girls, who are lagging behind in certain areas to use their specific knowledge and strengthen areas that they have special aptitude. However, much depends on the comprehension of social patterns that are at the base of the use of ICTs and on the promotion of adequate policies and practices that can put ICTs to work for gender equity.

In my previous experience in Tunis, when I asked the students why they decided to take computer classes, girls and boys tended to show two different patterns of responses. Boys stressed their natural tendency to use these kinds of tools, their familiarity with technical issues and the opportunity ICTs could give them to express themselves. On the other hand, girls saw ICT skills more as a means to an end; something that could offer them the opportunity of securing a better job and as a communication tool.

Also during practical activities, male and female students showed different approaches to computer-based learning and exercises. There was a tendency for boys to prevail over girls in common assignments. For instance, when a boy and a girl were assigned to use the same computer to complete a practical exercise, boys did not want to let go of the mouse. The boys dominated and took the lead to solve occasional problems even when it was their female classmate's turn to use the computer. It was intriguing to find that girls usually let the boys take their opportunity, while missing the opportunity of doing practice and learning how to use programs and tools. In this classroom, computers were stereotypically seen as a tool for boys and men, thereby affecting the learning patterns that boys and girls developed.

The perpetuation of such prejudices that computers or technological equipments are *boys' toys* is firmly rooted in the culture of science and technological fields and gets translated into the culture of technology teaching and even in the

mind of parents, teachers and students. This is one of the causes of the gender imbalance in the ICT sector, together with other inequalities that women experience in accessing both the scientific and technological fields of educational and professional world. The image of computers is still too rooted in a socio-technical paradigm that prevents girls and women to fully benefit from them. Computers are often seen as a technical object, which need chips and cables to be assembled and machine-readable code to work. They are perceived as belonging to the realm of science that is dominated by men, and to which women have access only occasionally.

Research corroborates the chauvinism as reported by the World Bank Report (2001) in which it is stated that girls are "turned off" early on by the intensely "masculine" nature of technology. They reject, for example, computer games as violent, redundant and tedious (and it must be said that this image is reinforced by the predominance of male character in most of this kind of entertainment tools); and also reject the non-social, technical obsession they see in their fellow male students. As a result, girls are less comfortable with computers. With the introduction of user-friendly interfaces and of the World Wide Web, ICTs have lost their cold and technical appearance, becoming mainly a communication and creative tool, which can be adapted to different models of interaction and promote an endless variety of uses.

As an ICT educator, what I try to do is promote gender inclusive approaches to technology-enhanced learning and instruction. I begin by stressing the communicational component of ICTs and try to place technology in the larger context of society, occupation, and history. When girls in my class began to think of computers more as an operational tool, they became more motivated to use them for autonomous learning. They found some of the contents of the internet relevant to their school, lives, and futures. For example, girls in my class tended to use computers in a more productive way, compared with their male peers. World Link (2002) asserts that when girls have access to computers, they used them more for academic research and communication with friends and family, increasing their reasoning and communication skills. Furthermore, the socio-cultural reality of the students that I refer to did not provide them with the opportunity to find information on issues such as reproduction and sexuality or to communicate with females and males of the same age from face-to-face and/or non electronic sources. In such instances, ICTs lend themselves as unique resources that girls and women could explore to increase their knowledge of the world and begin learning life skills like assertiveness.

As UNESCO (2003) rightly points out, the mandatory ingredient for putting ICTs to work for gender equity is showing the relevance of ICTs to the subject matter and the lives of the students who access it. Women and girls need to understand the ways in which ICTs can benefit them and their community. Organizations that already have a valid and respected role with women and girls need to take the lead in ICT implementation, training and capacity building since organizations are the custodians of knowledge. This is critical to enhance equity in teaching and learning and encourage more girls to take on studies in areas that women are not well represented.

IICBA UPDATE

Distance Education Programmes

Over the last few years, IICBA, in cooperation with member states, has initiated a range of distance-based training projects aimed at upgrading the capacities of lead teacher education institutions to improve on the quality and quantity of teachers. The primary function of IICBA's Distance Education Projects launched in 1999 is to improve the capacity of African member countries to use Distance Education (DE) to deliver quality pre-service and in-service teacher education programmes. Conducted in cooperation with the Indira Gandhi National Open University (IGNOU), the Project trains DE specialists of lead teacher education institutions of participating member states. Six African countries - Ethiopia, Gambia, Ghana, Liberia, Madagascar, and Sierra Leone – have so far benefited from this scheme in training personnel for the DE units of their respective teacher education institutions. To date, 274 candidates recruited from 42 teacher education institutions of these countries have been enrolled to the Post Graduate Diploma in Distance Education (PGDDE) while 26 students are admitted for the Master of Arts Degree in Distance Education (MADE) in Ethiopia and Liberia.

MADE Workshop

An Academic Counselling Workshop was conducted in Addis Ababa, Ethiopia for Master of Arts Degree in Distance Education (MADE) students on 17 to 21 January 2005. Ten out of the 13 MADE students participated in the counselling workshop. Two resource persons from IGNOU (Dr. P.K. Biswas and Dr. Mahdu Parhar) also attended and facilitated the workshop. The workshop discussed programme requirements and schedule, expectations of the participants and that of the Indira Gandhi National Open University. It also examined how best to synchronize these sets of expectations and handle administrative and academic problems that may arise.

PGDDE Workshop

To ensure the continuation of the training of Distance Education (DE) specialists when IICBA's Post Graduate Diploma in Distance Education (PGDDE) and MADE Projects come to an end, a scheme for adopting and integrating the PGDDE and MADE packages into the regular education and training programme of some national universities of the participating African countries has been put into place.

To this end, with the support and cooperation of IICBA and IGNOU, the College of Education, AAU conducted an Academic Counselling Workshop in Addis Ababa for the fifth in-take of PGDDE students from Ethiopia on December 2004. Prof. Santosh Panda, a resource person from IGNOU, guided the workshop in cooperation with three national tutors from the AAU. The latter were recruited from the DE tutors that IICBA had trained with the help of IGNOU. As an academic counselling workshop, its aim was to assist students to resolve their academic and administrative problems and advise them on study skills and learning strategies that can be employed to effectively and efficiently study at a distance.

Visit to IGNOU

A delegation consisting of national PGDDE tutors, Prof. Andrias Eshete, President of AAU and other University officials visited IGNOU from 19 -27 January 2005. A member of IICBA staff accompanied the delegation to help facilitate the tour. The purpose of the visit was to enable AAU officials to learn from IGNOU's rich experience in distance education, encourage AAU officials to recognize and appreciate what it takes to create a large-scale distance teaching system and reach an understanding concerning the integration of the PGDDE/MADE programmes with AAU and also identify other possible areas for future cooperation.

The delegation visited the School of Education, School of Computer Science and Technology, the Media Center, Material Production and Distribution Centre, Student Support Centre, the Planning and Development Division, the Regional Centre Division, the library and a few Regional Centres. They also held meetings with the Deans of the Schools and the Directors of the Departments and Centres they visited.

A Memorandum of Understanding (MOU) was drafted during the visit to provide a framework for cooperation between the two Universities in their future initiative of integrating PGDDE/MADE programmes at AAU. The President of AAU accepted the draft MOU and promised to present it to the Pro-Chancellor of IGNOU for his approval. After this approval, both parties will be called up to sign and officially endorse it.

IICBA Board Meeting

The IICBA Board Meeting was held on 14 January 2005 at Cape Town, South Africa. The South African government hosted the event. The meeting was attended by seven Board members, which included

representatives from the African Union, UNDP, UNICEF, Egypt, South Africa, Mozambique, the former IICBA Director and five IICBA staff members.

In the meeting, IICBA reported on activities from August 2003-December 2004. It also presented a financial report and the Strategic Plan for 2005-2008, which was the main agenda for this Board meeting. In the discussion that ensued, it was suggested that IICBA should focus on building the capacity of institutions, not just of individuals, develop resource mobilization strategies, adopt systematic approach, prioritize the proposed focus areas, and explore productive partnerships. Another important point discussed during the meeting was updating the membership of Board members whose term had expired or is about to expire. Finally, the Board members gave a farewell to Dr. Fay Chung, former IICBA Director. The next Board meeting will be held on the 2nd week of September 2005, two days before the UNESCO General Assembly in Paris.

Postgraduate Diploma in Education on the Use of ICT

IICBA undertook a fact-finding mission between February 22 to March 6, 2005 in two francophone countries (Senegal and Burkina Faso) to assess if the universities and teacher training institutions in the two countries are able to run a postgraduate programme on the use of ICT with minimum external support. After a careful review of the situation, one university from each country was selected for the Postgraduate Diploma in Education on the Use of ICT (PGDE-ICT).

The Université Cheikh Anta Diop of Dakar (UCAD), Senegal, and the University of Ouagadougou (UO), Burkina Faso, were selected to begin the PGDE-ICT through distance mode. IICBA will provide financial support to strengthen computing facilities, content delivery by professors from the University of Montreal (Canada) and conduct workshops for local professors to enable them facilitate the courses at the beginning, learn the skills and transfer expertise quickly and run the courses by themselves the next time the programme is run. In order to guarantee local capacity building, the universities are required to integrate the programme as one of their regular programmes.

Multigrade School Project

From 19-26 March 2005, one IICBA staff and a consultant, Dr. Wanna Leka, undertook a research evaluation mission. The intended mission was to conduct a summative evaluation of the pilot multigrade project in the Amhara region, following the evaluation of the Oromia pilot project in 2003. The methodologies of the evaluation included an interview scheduled for parents of multigrade students, multigrade teachers, Merawi woreda education officials, Amhara Regional Education Bureau officials, and a comparable examination in English and Maths for Grade 2 and Grade 4 students from both the multigrade schools and a local formal primary school. The evaluation report is expected to be completed by July 2005.

Pre and in-service Teacher Training in Sierra Leone

IICBA has successfully conducted the Capacity Building for EFA training programme for over 300 pre-and in-service teachers and teacher educators in three teacher education colleges of Sierra Leone. The training took place from 18 April to 2 May, 2005. The three participating colleges were Freetown Teachers College, Port Loko Teachers College and Makeni Teachers College. A team of IICBA staff led by Dr. Temechegn Engida conducted the training. The training covered topics related to modern teaching methods, theoretical and practical approaches to technology-enhanced learning and instruction, layout design and videography.

This special training programme was intended to accelerate the achievement of EFA goals in post-conflict countries such as Sierra Leone. The Minister of Education, His Excellency Dr. Alpha Worie and other officials of the Ministry of Education particularly supported the training. A second round training is planned to take place in September/October 2005.

Facilitators Training Workshop

The Master of Education in Information and Communication Technology (MEd-ICT), initiated as a pilot project in January 2004, is being run in three universities in Sub-Saharan African countries: Cape Coast University (Ghana), Makerere University (Uganda), and Addis Ababa University (Ethiopia). The project is designed in such a way that the local institutions are assisted to build their

own multimedia teaching facilities, acquire and develop content to enable them run the programme by themselves at the end of the project. The universities concerned are required to adopt the curriculum, get formal approval and finally award degrees for successful students.

As per the design of the programme, a workshop for one of the modules for the MEd-ICT was run at the University of Cape Coast (Ghana) from April 18 to 22, 2005. The aim of training facilitators on one of the modules of the MEd-ICT Programme, *SRX 880: Systems and Tools for CAE Authors*, was to provide them with an experience of interacting with MEd-ICT students at the University of Cape Coast. The training has also provided IICBA the chance to assess the status of the programmes at the three partner universities, and the requirements for the smooth coordination of activities in the remaining part of the programme.

The workshop was attended by MEd-ICT Students from the University of Cape Coast (UCC), several staff of the Centre for Continuing Education of UCC, and the Course Facilitators from all the other two Partner Institutions.

PGDE-ICT Workshop

IICBA has introduced a programme on the Use of ICTs in Education in six Sub-Saharan African countries: Ghana, Uganda, Ethiopia, Sudan, Senegal and Burkina Faso. The main objective of the Use of ICTs in Education programmes is to build local capacity in terms of organizing computing facilities for training, content development, tailoring of curriculum, skills transfer for the local staff, production of critically needed manpower in the use of ICT for education and initiate research in the field. As an effective strategy to achieve the objective of the project, the local universities are required to adapt the curriculum, get formal approval and finally award degrees for successful students.

The project targets training of teacher trainers in partnership with teacher training institutions. The Université de Ouagadougou (Burkina Faso) and Université Cheikh Anta Diop de Dakar (Senegal) were identified to be partners in the project. The first workshop was organized at the Université de Ouagadougou (Burkina Faso) from June 6-11, 2005.

The workshop at the University of Ouagadougou (UO) was undertaken with the purpose of training facilitators from the two partner universities (UO and UCAD). It focused on the practical aspect of three of the modules for the PGDE-ICT and providing the facilitators from UCAD with an experience of interacting with PGDE-ICT students at the University of Ouagadougou. Course moderators from the University of Montreal discussed the status of the PGDE-ICT programme in the presence of the Project Coordinator, course facilitators. A work plan for the remaining part of 2005 was prepared during this workshop.