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Designed by Katherine Dix

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## CONTENTS

<b>Gender Differences in School Anger</b> P. Boman	71
<b>A Case Study of Online Support for International Students in a Doctoral Program</b> V. Feast and J. Anderson	78
<b>Computer Utilization in Teaching Earth Sciences: Experience of King Fahd University of Petroleum and Minerals</b> M. H. Makkawi, M. M. Hariri and A. R. Ghaleb	89
<b>Factors Influencing High School Student Achievement in Nepal</b> B. R. Subedi	98
<b>Teacher Burnout and Perceptions of a Democratic School Environment</b> A. G. Dworkin, L. J. Saha and A. N. Hill	108
<b>Lessons from the Norwegian Folk High School Tradition</b> C. L. Harrington, T. W. Kopp and K. S. Schimmel	121
<b>Bolsa Escola: Redefining Poverty and Development in Brazil</b> C. A. Denes	137

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## Gender Differences in School Anger

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*This study examined gender differences in the affective, behavioural, and cognitive components of anger in 102 students completing their first year of high school. Results supported not only the hypothesis that girls and boys do not differ in their experience (affective) of anger but also the belief that girls are more likely to express positively (behavioural) their anger than boys. Additionally, results supported the expectation that boys are more hostile (cognitive) towards school than girls. Suggestions for future research and the relevance of the findings for schools are also addressed.*

school anger, gender differences in anger, bullying, school violence,  
classroom management

### INTRODUCTION

Anger has been defined in many ways from “a negative, phenomenological (or internal) feeling state” (Kassinove & Sukhodolsky, 1995, p. 7) to “a basic emotion whose function is to provide the organism with motivated capacities to overcome obstacles” (Lewis, 1993, p. 150). However, the present study utilises the conceptualisation of anger presented by Novaco (1975). He defined anger as having four distinct components: physiological, affective, behavioural and cognitive. In this study, gender differences in the latter three components of anger were examined in first year high school students.

The affective component of anger, also referred to as anger experience, relates to the strength of emotional responses toward anger provoking situations. The behavioural component refers to coping mechanisms, which may be positive or destructive, that people use to express anger. The cognitive component reflects the types of negative beliefs, or hostility, that people have about the world and in particular refers to the negative attributions they hold towards others or places.

The experience and expression of anger have particularly been explored in anger research. Anger has been identified in young infants and its initial experience and expression have been associated with constructive responses such as the ability to persist when encountering frustration (Lewis, 1993). Lewis reports that gender differences in the experience and expression of anger do not appear at this young age.

Studies involving adolescents and children have mainly reported results indicating no differences between boys and girls on the experience of anger (Fabes & Eisenberg, 1992; Zahn-Waxler, Cole, Richardson, & Friedman, 1994). However, these studies and others have reported significant gender differences in the expression of anger (Maccoby, & Jacklin, 1980; Crick, 1997). In both these studies boys were more likely than girls to use physical expression of their anger. In contrast to these results, Swaffer and Epps (1999), in their study of male and female adolescents, found no significant differences in either the experience or expression of anger. However, in a study of elementary, middle, and high school students

Cox, Stabb, and Hulgus (2000) found boys were significantly more likely to express their anger outwardly than girls.

Gender differences in the experience and expression of anger have also been investigated in adults with generally no significant differences being found (Averill, 1983; Stoner and Spencer, 1986). Newman, Gray, and Fuqua (1999), for example, found no significant differences between men and women on six different subscales measuring both state and trait anger. Biaggio (1989), however, reported significantly more anger producing situations for men than women. These results were tabulated from a self-monitoring two week period that failed to be replicated under more controlled conditions. Sharkin's (1993) review of gender differences in the experience and expression of anger suggests that results are inconclusive and that this may reflect a need for further study in the area.

Overall, studies tend to suggest that males are more comfortable in expressing anger over other emotions, such as sadness (Newman et al., 1999; Nunn & Thomas, 1999; Sharkin, 1993). Plant, Hyde, Keltner, and Devine (2000) also report that people generally stereotype when interpreting emotions such as anger and sadness. It is more likely that displays of anger will be interpreted as an exclusively male domain. In general, however, most studies of anger in adult males and females have failed to report significant gender differences in the experience and expression of anger.

Research into gender differences in hostility, the cognitive component of anger, has been neglected in most studies and particularly in school settings. However, there is some limited research that indicates that negative cognitions relate to lower levels of adjustment to high school (Boman & Yates, 2001). This relationship between negative cognitions and school adjustment was especially evident in males.

Research into attributional bias in aggressive boys (Graham, Hudley, & Williams, 1992; Nasby, Hayden, & DePaulo, 1980) suggests that boys also are more likely to be more hostile towards school. In school settings, it appears that school aged males are more likely, based on previous research in non-school populations, to express their anger negatively. It is also appears there are no significant gender differences in the experience of anger.

Although most anger studies do not specifically target anger directed towards school, this study tested the hypotheses that boys and girls do not differ in their experience of school anger and that girls are likely to be more constructive in their expression of anger at school. It also tested the hypothesis that boys would be more hostile towards school than girls.

In this study, the Multidimensional School Anger Inventory, as developed by Smith, Furlong, Bates and Laughlin (1998), was used to measure the different components of anger. It was predicted that there would be no significant gender differences in the experience of anger, girls would be more likely to express their anger in positive ways, and boys will have higher levels of school hostility than girls.

## **METHOD**

### **Participants**

Data for this study were collected from a metropolitan high school in South Australia. The sample comprised 102 Year 8 students (55 male and 47 female) in their first year of high school. Parental consent forms were sent to approximately 200 students and those who returned them within three days were chosen for the study. The students and parents were informed that the study was confidential, anonymous, that participation was voluntary, and that they could withdraw from the study at any time. The students were mostly Caucasian

(82%) though 13 per cent were of Asian background. Some (33%) were also receiving government assistance in the form of School Card, a program for economically disadvantaged students.

## Analytical procedure

### *Rasch measurement*

Survey data obtained from the administration of questionnaires with multiple response options are ordinal in nature, and this limits the range of statistical procedures available for their analysis. However, responses are taken to indicate strength of an individual's attitude on an underlying trait and they can be modelled against a probability function for that trait. Rasch analysis does just this and enables the set of item responses to be converted to an interval measure of known precision on the trait (Wright & Masters, 1982). It includes an internal check of the fit of items to the modelled response function, and where a misfit is found, the item is deleted from the set. The Rasch analyses were undertaken using the program Quest (Adams & Khoo, 1997).

## Materials

*Multidimensional School Anger Inventory-Revised.* The MSAI-R, a revision of the MSAI developed by Smith et al. (1998) was used. It included some extra items added by Smith et al. that made the questionnaire more appropriate for both genders as the original was designed for males only. The MSAI-R measures affective (19 items), cognitive (13 items), and behavioural (22 items) components of school anger which consisted of 9 positive coping and 13 destructive expression items. Some items were adapted for Australian conditions, which were approved by Smith and Furlong (personal communication). These adaptations involved language variations and did not change item content. For example, "You asked to go to the bathroom and the teacher says no" became "You asked to go to the toilet and the teacher says no."

The data were subject to Rasch analysis and the fit statistic revealed that two items on the affective subscale (Items 5 & 6), and one from the behavioural subscale (Item 47), did not attain adequate scalar properties and were subsequently removed. Only one distinct behavioural subscale was also evident, that is, only one total coping score was allocated to each student. The internal consistency reliability scores with the above mentioned items removed were good with the affective subscale at .84, the cognitive .74, and the behavioural subscale at .76.

The affective subscale measures *anger experience* and presented hypothetical school situations which the students reported their own level of anger on a 4-point Likert scale: (1) I wouldn't be angry at all, (2) I'd be a little angry, (3) I'd be angry, (4) I'd be very angry. The behavioural subscale represented *positive coping* strategies on which the students reported how often they may use them in dealing with their anger. Once again it employed a 4-point scale: (1) never, (2) sometimes, (3) often, (4) always. A high score reflected positive coping strategies while a low score reflected destructive ones. The cognitive subscale measured the students level of *school hostility* to a series of statements on a 4-point scale: (1) strongly disagree, (2) disagree, (3) agree, (4) strongly agree.

## Procedures

The students were administered the MSAI-R in the school resource centre at the beginning of their final term for the year. The author, a research assistant, and the school's English coordinator carried out the administration during the students' regular English lesson time.

The students were told that the MSAI-R generally asked them about their feelings and thoughts on school. Students were able to raise their hands to ask for help if they needed some clarification of items.

## RESULTS

### Descriptive Statistics

Mean scores, and standard deviations, for the three anger sub-scales including gender differences are presented in Table 1. Girls' mean scores were higher for both anger experience and positive coping. Boys, however, had a higher mean score for school hostility.

**Table 1. Means and Standard Deviations for Anger Sub-scales**

SUBSCALE		Total	Males	Females	t	p
Affective	Mean	44.3	43.7	45.0	0.83	ns
	SD	7.4	7.4	7.5		
Behavioural	Mean	59.5	57.8	61.4	2.55	.006
	SD	7.4	6.8	7.6		
Cognitive	Mean	29.0	30.2	27.5	2.75	.004
	SD	5.0	5.5	4.0		

ns = not significant

### Inferential Statistics

#### *t*-tests

Independent samples *t*-tests were conducted to test whether boys and girls mean scores significantly differed on the anger subscale scores. The results are also reported in Table 1. There was no significant difference on anger experience. However, boys were less likely to use positive coping strategies than girls  $t(100)=2.55$ ,  $p=.006$  (one tailed). Boys were also significantly more hostile towards school than girls  $t(100)=2.75$ ,  $p=0.004$  (one tailed).

#### *Correlations*

A Pearson correlation revealed that there was a significant negative relationship between anger experience and positive coping  $r=-0.24$ ,  $p<0.05$ . The relationship accounted for 5.6 per cent of the variance. There was also a significant negative relationship between hostility and positive coping  $r=0.59$ ,  $p<0.05$ . The relationship accounted for 35 per cent of the variance. The results are presented in Table 2.

**Table 2. Correlations of the three components of anger**

	Affective	Behavioural	Cognitive
Affective		0.11	-0.24*
Behavioural			-0.59*
Cognitive			

\* $p<0.05$

### Item Analyses

Independent samples *t*-tests were also conducted on each individual item within the MSAI sub-scales to determine which items, if any, significantly differed for boys and girls. These results are presented in Table 3. Only two of the 23 anger experience items differed significantly. Girls were, first, more likely to be angered by someone spreading a rumour about them, and second, making fun of their hair or clothes.



**Table 3. Significant gender mean difference items in MSAI subscales**

SUBSCALE	Boys (n=55)	Girls (n=47)	t
<b>Anger Experience</b>			
Someone starts a mean rumour about you that spreads all over the school	3.25	3.57	2.12*
Your best friend makes fun of your hair or clothes	2.16	2.83	3.32**
<b>Anger Coping</b>			
I talk it over with another person when I'm upset	1.82	2.62	4.76**
When I get angry at school I share my feelings	1.55	2.19	4.24**
When I'm angry I break things	1.76	1.23	3.32**
When I'm upset I calm myself down by reading, writing, painting or some similar activity	1.67	2.34	4.00**
I cry when I'm angry	1.35	2.06	5.05**
When I get angry my stomach or head aches	1.75	2.26	3.00**
I punch something when I'm angry	2.53	1.05	5.19**
When I'm angry at a teacher, I make jokes in class to get my friends laughing	2.16	1.77	2.02*
<b>School Hostility</b>			
School is really boring	2.82	2.30	3.44**
Adults at school don't care about students	2.36	1.94	2.84**
Most days I get annoyed at someone or something at school	3.07	2.47	3.46**
At this school teachers go out of their way to help students through tough times	2.44	2.79	2.29*

\* $p < 0.05$  \*\* $p < 0.01$

Eight of the 22 anger coping items had significant differences. Girls were more likely to talk things over with someone, to share their feelings, and calm themselves by reading or writing when angry. Girls were also more likely to cry or have a head or stomach ache. Boys, however, were more likely to break things when angry. Boys were also more likely to disrupt a class when angry at a teacher or to want to get back at a teacher for receiving a bad grade.

Significant differences were found in four of the 13 school hostility items. Boys found school more boring and were more likely to be annoyed by someone or something at school. Girls were more likely to believe adults at school cared about students and that teachers would go out of their way to help them.

## DISCUSSION

This study, as predicted, found no significant gender differences in the experience of anger. Males were found to use more destructive coping mechanisms than females. In relation to the cognitive component of anger, it was found that males were significantly more hostile towards school. Interestingly, students who indicated low levels of hostility towards school also tended to indicate lower levels of anger experience and show more constructive coping mechanisms.

Although no significant gender differences in the experience of anger were found, it is worth noting that two anger experience items did significantly differentiate between males and females. These two items involved spreading a rumour and having a best friend make fun of one's hair or clothing. These items were specifically added by Dr Furlong (personal communication) to render the MSAI (Smith et al., 1998) more relevant to the female experience of anger.

Regarding anger expression, females were more likely to have positive coping mechanisms. These coping mechanisms were all of a passive nature. For example, girls were more likely to share their feelings or talk things over with someone else when angry. Males were more likely to indicate destructive coping mechanisms and it was noted that these were active in character. For example, boys were more likely to break things or disrupt a class when angry. This is consistent with other studies that have reported adolescent males are more likely to outwardly express their anger (Cox, Stabb, & Hulgus, 2000; Maccoby & Jacklin, 1980; Crick, 1997). Not all studies have reported this difference between the inward and outward expression of anger (Averill, 1983; Newman, Gray, & Fuqua, 1999; Stoner & Spencer, 1986). However, those studies that have not reported this have been of adults rather than adolescents.

One of the unique contributions of the current study is the exploration of the cognitive component of anger. This exploration was achieved by examining school hostility. It was found that males had higher levels of hostility towards school than females. Interestingly, on a relational level, girls were more inclined to trust adults within the school setting. This may reflect a greater inclination of girls to share feelings and to talk things over with others. It may also be that these findings are idiosyncratic to the current study. However, studies of attributional bias in aggressive boys have reported that they are more hostile (Graham et al., 1992; Nasby et al., 1980) and this concurs with the present study's findings that boys are more hostile towards school. Overall, future research is needed to further explore this under investigated area.

One of the more interesting findings of the present study was the link between the cognitive component of anger and the behavioural and affective aspects of anger. Based on this study's results, it appears that the cognitive component of anger relates to the more healthy expression of anger and may moderate the actual experience of anger. The relationship between positive coping and lower levels of hostility towards school was particularly strong. This may be of importance and relevance when schools are addressing issues such as bullying and other types of harassment and violence.

In conclusion, the author has three main suggestions. Firstly, further studies are needed to actually measure and investigate the cognitive component of anger. These studies could also further explore the possible link between the cognitive, expressive, and experiential components of anger. Future studies may also wish to explore the passive/active aspects of anger coping and its relationship to gender. Secondly, intervention programs designed to help young people cope in healthy ways with their anger could be advised to address differentially the needs of angry females and males and to include the important cognitive aspect of anger. Finally, it may be very helpful for teachers to pay attention to statements made by students that suggest an underlying hostility towards school. This could be useful in preventing some later behavioural problems, both in the classroom and schoolyard, which reflect destructive anger coping strategies.

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# A Case Study of Online Support for International Students in a Doctoral Program

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*Online delivery methods that replicate aspects of face-to-face teaching and facilitate learning at a distance are becoming a more common teaching and learning approach in Australian universities teaching external international students. This paper examines a trial of a new online method of course delivery, using a CD-ROM as the basis of materials provision, communication and interaction, for a group of Thai doctoral students in a course at Flinders University in South Australia called Approaches to Research. The paper uses a case study approach and employs a focus group to collect data. The twin purposes of the paper are to describe the two methods of course delivery in which Approaches to Research is taught and to investigate the views of the Thai student group about the success of replicating face-to-face with online teaching. The findings of the paper, which are organised into themes, may provide pointers to university staff contemplating the use of online teaching to facilitate learning at a distance for international students.*

online delivery methods, international students, case study, focus groups

## INTRODUCTION

*Approaches to Research* is the first compulsory course in the Doctor of Education programme at Flinders University, with a regular intake of internal students. Concurrently with teaching this course internally in 2002, teaching staff trialled a new way of teaching with a group of students from Thailand. The Doctor of Education is a professional doctorate designed to meet the needs of leaders in educational institutions and associated organizations, who wish to pursue studies at the doctoral level that are based on research but where the principal orientation is not only about the development of new knowledge but also the application of that knowledge in professional practice (Flinders University, 2003).

This paper describes two delivery methods used for teaching the course *Approaches to Research*, the regular method adopted with internal students and the trial of online support for international students undertaking a doctoral research program externally. The main purpose is then to report the use of a case study using focus group data to investigate the views of the external Thai students regarding the online delivery method. The findings of the study are stated in the form of general guidelines that may be useful for other university staff contemplating online delivery for international students.

## DESCRIPTION OF THE TWO DELIVERY METHODS

The two delivery methods are described separately in this section as the internal student delivery method with its emphasis on face-to-face teaching, and the external student delivery method with its emphasis on online support resources.

### Internal student delivery method

A traditional face-to-face delivery method has been used in teaching *Approaches to Research* since its inception in 1996. In 2002, the class of 12 internal<sup>1</sup> students living in Adelaide, attending a semester-length course of 13 weekly classes each of two and half hours, had the face-to-face teaching supplemented by the use of a CD-ROM containing a number of resources to support student learning. The CD-ROM included four main sections:

- Aims and Purposes, which includes sections entitled welcome, topic overview, aims and learning objectives, assessment requirements, details of textbooks, and topic schedule of weekly activities;
- Learning Modules, which includes seven course modules comprising the course content;
- Learning Resources, which includes notes on the reference texts; links to education departments, associations and organizations; a book-length glossary of terms in educational research; links to statistical sites and online tools such as online dictionaries and thesauri; sample research proposals; a selection of reports and theses; and links to the full contents of more than 80 scholarly, refereed electronic journals that may be freely accessed with an Internet connection; and
- An Index alphabetically linked to all content on the CD-ROM.

This CD-ROM resource, which replaced traditional paper-based class handouts, also contained a link to a bulletin board called a Forum and an email facility, which students could use when connected to the Internet to communicate with each other and the two lecturers asynchronously in the intervals between classes. For example, in the first week, internal students were required to post a message introducing themselves to their classmates. The CD-ROM was linked to the School of Education's Intranet so that "the student who is at a workstation linked to the Internet and with the course CD-ROM in the drive, can seamlessly navigate between the two sets of materials [CD-ROM and Internet]"(Anderson and Askov, 2001, p. 156).

The two texts used for the course were Cohen and Manion (2000) *Research Methods in Education* and Anderson and Poole (2001) *Assignment and Thesis Writing*.

Assessment for the course included two major assignments, each of 3000 words and each worth 50 per cent of the final grade. The first assignment required students to select one of the research methods described in the Cohen and Manion (2000) textbook, describe the method and identify its strengths and weaknesses. Students were also required to illustrate the research method selected with a relevant research article, and prepare a PowerPoint for presentation in class. The second assignment, also involving a presentation and 3000-word written assignment, required students to prepare a proposal for a research study, which used an approach to research that was different from that selected in the first assignment and which was justified for the particular study. The proposal needed to contain traditional

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<sup>1</sup> Internal students are defined as those students who study using a fully face-to-face mode on campus.

elements of a research proposal such as research questions, an explanation of the importance of the study, and a discussion of limitations and ethical considerations.

### **External student delivery method**

The trial delivery method, noted at the start of this paper, had similarities to the above description of the *Approaches to Research* course with modifications for the fact that a second group of nine students enrolled in this course resided in Thailand. It was intended that the trial for these external<sup>2</sup> Thai students would replicate the experiences of the internal face-to-face class. The two staff teaching the course travelled to Nakhon Sawan Rajabhat, Thailand, to offer an intensive six-day period of face-to-face classroom activities, which paralleled the first half of the 13-week face-to-face class and first assignment requirements described above. Students completed the first assignment presentation requirements in that week and subsequently produced their 3000-word written assignment, mostly submitting these assignments after their arrival in Australia some two months later. These students also had the benefit of the CD-ROM materials and the Forum and email. Towards the end of the first part of the internal students' semester, the Thai students visited Australia and Flinders University for a period of approximately one month. In this time they attended two of the face-to-face classes held at Flinders and worked on the remainder of their *Approaches to Research* assessment, as well as attending other courses. They also gave a second presentation based upon the second assignment.

Thus, in summary, identical aspects of the course for the two student groups were:

- course content,
- textbooks,
- topic sequence,
- learning objectives and aims,
- course assessment requirements and standards (grades), and
- CD-ROM materials.

Course aspects that were different for the external Thai student group related to method of delivery and included:

- an intensive period of face-to-face time in Thailand (six days) and Australia (one month) for the external Thai students, compared to 13, two and a half hour face-to-face sessions spread over a semester for internal students;
- intensive periods for assessment presentations (all done in six days) for the external Thai students, compared to a more spread-out time for local internal students;
- more communication using the Forum for external Thai students and less face-to-face communication, compared to less online communication and more face-to-face communication for internal students; and
- more reliance on CD-ROM materials by the Thai students because of the gap between face-to-face lecturer contact.

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<sup>2</sup> External students are defined as those studying at a distance from the campus.

Thus both student groups experienced the twin aspects of course delivery and resources, including face-to-face contact and access to online materials, but it was essentially the different reliance on and continuity of face-to-face classes versus online materials that differentiated the two groups.

### **CASE STUDY METHOD**

The method used to determine the outcomes of the trial for Thai students can be broadly labelled as case study, which, in the broadest sense, can be either qualitative or quantitative depending on how research is conducted. This research study is best labelled as qualitative because the data were collected primarily through focus groups supported by limited participant observation by one of the authors in two classes.

Case studies are increasingly used when complex understandings of an issue or phenomenon are required. Case studies are a useful methodology when ‘how’ and ‘why’ questions are asked rather than ‘what’ questions. The reasons usually given for this preference is that ‘how’ and ‘why’ questions are more likely to be exploratory and thus suit the case study method. Yin (1994, p. 9) claimed that case studies have a distinct advantage when “a ‘how’ or ‘why’ question is being asked about a contemporary set of events over which the investigator has no or little control”. Naumes and Naumes (1999, pp. 1-7) argue that case study writing is like telling a story about an institution or situation. The story has a theme or message with details that make it vivid and memorable, and good case studies, like good stories, are powerful in that they explain the world or teach us something. However, good case studies should also do more than just tell a story; they should present evidence for that story at key points of the study, and they should provide conclusions about the findings of that study.

Definitions of case study research abound in the literature and are almost as numerous as the writers of such research. Sturman (1997, p. 61) defines a case study as a “generic term for the investigation of an individual, group or phenomena”, while Stenhouse (1985, p. 645) defines case study methods as involving the “collection and recording of data about a case or cases and the preparation of a report or the presentation of the case”. Smith et al. (1990, p. 129) state that the case study method is “an approach to research which utilises ethnographic research methods to obtain and portray a ‘rich’ descriptive account of meanings and experiences of people in a identified social setting”.

Bouma and Atkinson (1995, p. 110) note that in a case study “a single case (hence the name) is studied for a period of time and the results recorded”. They go on to describe a case study as “one person, one group, one family, one classroom, and one town, one nation” in which “the aim is description”. The present study is of this type in that a single cohort of international students is the focus: it represents what Yin (1994, pp. 39) called a ‘unique’ case, which is ‘revelatory’. Further, the present study uses the educational case study method because it is concerned with understanding an educational intervention or action and it relates to what Stenhouse (1985, p. 646) called “the refinement of prudence through the systematic and reflective documentation of experience”.

### **Data collection using focus groups**

The data for this case study of international students were collected using focus groups. Focus groups as a method of data collection in the field of education, particularly in the area of curriculum reform and evaluation, have been employed for many years although there has been a recent upsurge of interest in this strategy, particularly since the 1980s. Although often combined with other data collection strategies, it is not uncommon for researchers to use

focus groups as the sole data collection strategy. According to Morgan (1996, p. 130), focus groups are defined as “a research technique that collects data through group interaction on a topic determined by the researcher”. Morgan identified three essential elements of focus groups: a research method devoted to data collection, interaction in group discussion as the data source, and the active participation by the researcher. Further, Morgan (1996, p.131) stated “typically that they consist of structured discussions among 6 to 10 homogeneous strangers in a formal setting”.

All of Morgan’s three essential elements were present in this study. However, focus groups were used in a particular way in this research. Only one focus group was held rather than what appears to be the norm of a series of focus groups. The reason for this approach was, first, the size of the target group (nine students) – it was felt to be beneficial for interactive purposes, as well as practical, for the students to be interviewed as a whole group rather than in a series of smaller groups. The second reason for a single focus group was availability of the participants. The course lecturers asked the students for their cooperation in attending the focus group at a predetermined day and time immediately prior to their timetabled class with the internal students but they did not themselves participate in the focus group.

A one-minute survey, included in Appendix 1, was conducted at the beginning of the focus group to obtain background details of the nine students. A standardised set of questions, included in Appendix 2, was developed as a basis for the focus group and to give it structure. The researcher acted as the moderator of the focus group. A two-hour time limit was imposed for the focus group, and hence it was necessary for the moderator to be quite directive with participants so that all questions could be addressed and to prevent conversation from wandering ‘off track’. However, to allow for open-ended input, the final question invited students to add anything they desired, and the first question asked for a single word or phrase to describe their experiences in *Approaches to Research*.

Care was taken to avoid one limitation of focus groups, namely, the common tendency for one or more individuals to dominate conversation. A further limitation of the focus group was that the moderator was not a trained interviewer although she had some previous experience with conducting individual interviews.

Students were assured, both verbally at the beginning of the focus group, and in a written paragraph at the beginning of the one-minute survey that their responses would be anonymous and all discussions kept confidential. They were further assured that their responses would only be reported in aggregate to the course lecturers and that raw data would not be disclosed.

### **Data analysis**

The focus group session was videotaped and fully transcribed following the group session. Key answers were also recorded on large sized butcher paper (as per the instructions in italics for each question shown in Appendix 2) so that students could view their responses and respond to others. These data were then analysed for common themes, which were used to distil a series of broad lessons to be learned when developing further online courses, such as those for external students.

### **RESULTS: FINDINGS AND THEMES**

The one-minute survey revealed that the nine Thai students were all mature age students. The group consisted of four females and five males who, with one exception, were all aged over 40. Three of the males were also aged over 50. All nine students had Master’s level qualifications. They all worked as English teachers at various Thai universities and two



students reported being Head of the Foreign Language programs at their respective institutions. All nine students had workforce experience, with six of the nine students reporting they had been working for more than 10 years.

Four main themes emerged from the focus group discussion, two of which involved somewhat contradictory reports from the students. First, students were concerned with the difficulty of the course and often expressed the view that the content was ‘hard to understand’ and ‘complicated’. In particular, they expressed concerns on many occasions with the technical terms in the textbook and CD-ROM and the need to consult dictionaries constantly in an attempt to understand the meanings of difficult words. The Cohen and Manion text (2000) seemed to be problematic as it is ‘written for a native speaker’. A relevant comment from a male student was “We only understand the surface information but need to understand the whole content”. English language difficulties were raised a number of times over the two-hour focus group. One student simply said, “There are language issues”. To overcome this, another student commented, “We looked for Thai texts and books in research to help us. And that is better. But even Thai books have English texts”. The students requested simplified textbooks on Research Methods as well as translation of terms and content into Thai to assist them with English difficulties. They also felt that having an online dictionary to explain difficult terms was helpful but having something like *dictionary.com*, which is specific to the terminology in *Approaches to Research*, would be ideal. However, despite the difficulties of studying in English, students were keen to use English. One commented, “It is very good to study in English. I am an English teacher so it is good practice for English”; and another “It is difficult to express ourselves in English. To have ideas in English. But listening and speaking in English is good”.

Apart from some mention of technical issues when there were problems with modem connections and sending assignments electronically, a second theme to emerge for the Thai student group was the difficulty of the course and associated assessment concerns. At the same time that they expressed this concern, the students agreed that the content was what they needed in this type of course: it was ‘informative’ and provided them with the required knowledge. They felt that the content supplied them with a ‘good international education’ and the research topics were appropriate. A relevant comment from a male student that echoed the first theme was “The content is good but it’s hard for us to read”; and another from a female student was “We are not sure we understand correctly so we need high concentration and get very tired. But it is good”. These contradictions around this theme may be summed up by the comment that “It enriches but it is difficult”.

A third theme emerged around student-centred learning. The group expressed delight over the student-centred approach, which one student described as ‘self-study’, although conversely they often expressed thoughts about needing more lecturer input. One student commented, “We feel we have been thrown in the deep end”. They felt more assistance was needed with understanding vocabulary and jargon, especially the statistical terms used in the textbook, and more assistance with academic writing skills. One student commented, “We need more help with the jargon and statistical terms” and another “the text should be simplified” and should “reflect Thai culture”. They wanted the lecturers to spend more time explaining the assignments and using the online articles to point out how these articles were examples of particular research methods. The link between the research method and the article (presumably for the first assignment) did not seem clear to them.

Although the Thai students were very supportive of the lecturers’ approach, often describing them as ‘kind, helpful and friendly’, they were concerned about the lack of one-to-one support and considered that the lecturers did not have enough time to spend in replying to emails and responding to their queries. The lecturers were considered as one of the three

best aspects of the course. On the other hand, when asked about recommended changes, the group wanted the lecturers to understand student problems better and to seek feedback from students about these difficulties. They wanted more of the lecturers' time for email and face-to-face instruction as they felt they had to compete with the many other demands on lecturers' time and with many other students who also wanted lecturer input.

A fourth theme emerged around group work. The group work aspects of the course always led to favourable responses and was raised a number of times. Students felt that informal interaction with their own student group and with the internal Australian students was a very important part of their learning. They liked being able to support and encourage each other including to 'give comfort' and 'cheer each other up' when difficulties arose, and to share computers and equipment. They also appreciated the social activities that accompanied their formal learning. Students liked the CD-ROM resource materials, particularly the easy availability of links to online articles in international journals via the Internet. They expressed little frustration with computing difficulties because they either supported each other, including borrowing computers from each other, or used technicians at their respective universities to assist them. A male student commented "Sometimes we phoned each other for help", and a female added "The people in our universities (who do have the skills) helped us when it wouldn't work".

The different emphasis on online versus face-to-face teaching was strangely not identified by students as being different to fully face-to-face previous courses they had studied (apart from the time spent studying in Australia). Students liked the CD-ROM and especially access to online articles (and the fact they were 'free') but they did not identify this as online teaching or learning which was different to their previous learning experiences. Indeed, the differences they noted mainly pertained to studying in English, team teaching by Australian teachers, working in groups, the student-centred approach and being encouraged to express opinions, submitting assignments electronically, the difficulty of the course, and presenting using PowerPoint. They also remarked that there was more reading and more assessment in this course than in others they had studied. One student commented, "There is more analysis. We have to not only understand but analyse what we have learnt. Much more thinking". Another commented "You have to think harder in this one. Have to concentrate". The practical and financial aspects of travelling and studying in Australia also featured in this discussion. Some students expressed the desire to have more money and more time to spend in Australia.

Interestingly, the group defined the face-to-face aspects of the teaching method and assessment requirements as similar to what they had experienced in the past. They also identified the following as similar: content, background needed, class activities and discussion, and time allocated.

In summary, eight of the nine students felt that *Approaches to Research* provided them with a high quality course. Two students had studied in other countries including the United Kingdom, and one of those students felt that these previous experiences provided a higher quality experience than did his experiences in *Approaches to Research*. This student felt there were too many limitations including a lack of time and continuity, problems with language proficiency and the high student teacher ratio.

In conclusion, the overriding issue that emerged from the focus group discussion is that good teaching is good teaching no matter how it is facilitated. The research points to the fact that students do not notice online teaching as markedly different to face-to-face as long as the technology works and it is done well (as was noted to be the case in *Approaches to Research*). Online teaching can be seamlessly combined with face-to-face methods with

little noticeable impact on students. The important difference to these overseas students was not online versus face-to-face study, or the use of CD-ROM technology, as envisaged at the beginning of the study, but rather the difficulty of studying in English and the student-centred approach, which is used as a matter of course in most Australian universities. This approach appeared to be quite different to the more passive, instructional teacher-centred learning that they were used to in Thailand where teachers transmitted the knowledge to learners.

### LESSONS LEARNED

A large and growing part of the role of academics in Australian universities involves working in an online environment to provide learning experiences for local students (called internal students in this study) but also for those students who are distant from local home campuses, either across Australia or internationally (called external students in this study). Clearly the trial described in this paper has considerable relevance for that role. Lessons learned from this trial may help in informing online teaching at the other Australian universities.

From the experience of using the focus group research method to gauge the views of the external Thai students, the following lessons were drawn.

- Considerable attention to student support is essential in online teaching as it is with face-to-face methods.
- Overseas student issues with English language need considerable thought, careful planning and care in providing support regardless of the teaching approach used.
- Cultural factors, especially those that impact on student expectations and different approaches to learning, are more significant to students than the methods chosen.
- Online technology and the development of associated teaching methods appear to be more significant to teachers than to learners.
- Facilitating group work and interaction among online learners and educators is important.
- Mixing face-to-face methods with online support and resource materials is helpful for student learning.

Given the extensive levels of support provided in this course to the external student group, it was somewhat surprising that they reported the need for even more assistance. However, in the light of difficulties of learning in another language, and their first experience of different teaching methods (mainly the student-centred approach), perhaps it could be expected. The fact that these students were all English teachers and thus used to using English to some extent, and of mature age with extensive study backgrounds, both factors which should give them an advantage in advanced courses of study, the case for extra support is easily made for other groups of less well credentialed students. Ways of providing extra support are not easily found, particularly within resource and time constraints, although providing more assistance with difficult terms through the use of online dictionaries may be one possibility. A second possibility is to spend more time with students, either online or face-to-face in supporting them with difficulties regarding assessment. Working through possible ways of completing the assessment and providing model assignments would make the requirements clearer for students. Providing opportunities for online and face-to-face group activities, both formal and informal, is also another priority. The reported need for this intensive level

of support points to the necessity to transition students from their previous learning environment to the new one.

### CONCLUSION

The lessons learned, although expressed as separate points above, are interrelated. In general, overseas students have high expectations of the learning environment and level of lecturer support provided by Australian institutions. It is important that lecturers consult students about their learning needs and understand those needs, especially when learning is conducted in a second language, and attempt to meet those needs where possible. However, cultural and financial factors, and the complication of learning in a second language, often mean that overseas students expect levels of support beyond the resource levels of many Australian universities. Balancing the task of managing those expectations, while providing a supportive learning environment, which gives overseas students a good chance of succeeding but does not lower standards, is a challenging task indeed.

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## APPENDIX 1: ONE-MINUTE SURVEY

### Background

Notice that no names are included in this one-minute survey as its sole purpose is to gather some background data on you, the Thai student group. No one will be identified individually, either in this survey or in the focus groups. All information provided is confidential and will only be viewed by me and the person who transcribes the data. The course coordinators will not see any of the raw data and will only receive a report based upon the aggregation of these findings at the completion of the course.

Please complete the following details:

1. Gender – male/female (circle one)
  
2. Age – please select (circle one) the correct category for your age
  - 20-30 years
  - 30-40 years
  - 40-50 years
  - 50-60 years
  
3. Educational background (circle those relevant to you)
  - do you have a degree
  - do you have an honours qualification?
  - do you have a masters qualification?
  - do you have a doctoral qualification?

4. Please briefly describe your role in the workplace

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5. How many years have you been in the workforce (circle one)?
  - None
  - 1-5 years
  - 6-10 years
  - more than 10 years

Thank you for your cooperation.

## APPENDIX 2: FOCUS GROUP QUESTIONS

1. Describe, in a single word or phrase, your experiences in studying *Approaches to Research* at Flinders University (*list on butcher paper*).
2. What is different or new about the way *Approaches to Research* is taught compared to other courses you have studied? (*list on butcher paper*).
3. What is the similar about the way in which *Approaches to Research* is taught compared to other courses you have studied? (*list on butcher paper*).
4. What works well?
  - Of the differences? (*one star next to the item on the butcher paper*)
  - Of the similarities? (*one star next to the item on the butcher paper*)
5. What needs improvement?
  - Of the differences? (*two stars next to the item on the butcher paper*)
  - Of the similarities? (*two stars next to the item on the butcher paper*)
6. What have you liked/disliked about the following? (*table on butcher paper*).
  - One month spent face-to-face in Australia – teaching and assessment
  - Six days spent face-to-face in Thailand – teaching and assessment
  - Bulletin board (Forum) and email communication
  - Other CD-ROM materials
7. What have you liked/disliked about the following? (*table on butcher paper*).
  - Course content
  - Topic sequence
  - Learning objectives/aims
  - Assessment requirements
  - Textbooks
8. How important to your learning in *Approaches to Research* was help with using the technology (CD-ROM and email)? (*add answers to butcher paper*).
9. How important to your learning in *Approaches to Research* was the interaction with others in this group and interaction with the other Australian students? (*add answers to butcher paper*).
10. In your opinion and based upon previous experiences in other courses which are fully taught face-to-face, does the way in which *Approaches to Research* is taught produce what you would expect of a high quality course? Please explain. (*notes on butcher paper*).
11. What were the best and worst aspects of your experiences in *Approaches to Research*? (*table on butcher paper*).
12. Would you recommend any changes to this course? If so, what would you change? If not, why not? (*list on butcher paper*).
13. Any other comments? (*list on butcher paper*).

# Computer Utilization in Teaching Earth Sciences: Experience of King Fahd University of Petroleum and Minerals

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*The involvement of computers in earth sciences education increased dramatically in the latest decade. At present, several courses in geology utilize software and Computer Based Training (CBT) that help in interpreting and describing the most complicated concepts in very simple ways. This paper presents a general review of computer involvement in teaching earth sciences subjects at Earth Sciences Department (ESD) of King Fahd University of Petroleum and Minerals (KFUPM), Saudi Arabia. The results of a case study are exhibited to reflect the achievements of utilizing computers in the Department. The results are encouraging and support future incorporation of computers in additional geology courses. The experience of ESD in this regard could be taken as an example to develop academic teaching programs in other earth sciences departments in developing countries.*

Computer, Earth Sciences, Education, Software, The Internet

## INTRODUCTION

Since its establishment in 1963, the Earth Sciences Department (ESD) was the leading department of its kind in Saudi Arabia employing the latest academic aids in its programs. Faculty experience, collection of reputable publications, and modern laboratory instruments were utilized to transfer knowledge to students. Methods used to teach geology courses involve class lectures and laboratory demonstration. In lectures, instructors teach contemporary theories and concepts related to different subjects. In addition, students are exposed to practical exercises in laboratory sessions.

Teaching courses like Physical Geology, Mineralogy and Petrology require explaining the geological processes by which different minerals and rocks were formed, the physical and chemical properties of minerals, and the natural dynamic processes acting in the earth's interior and on its surface. Instructors of Structural and Field Geology courses, usually, train students how to visualize structural features in three dimensions, measure plane attitudes, construct cross sections, and use field equipment. Higher level and more applied geologic courses like Petroleum Geology, Hydrogeology, Geophysics, Environmental Geology, and Engineering Geology discuss different computational techniques and chart-reading methods. Without the aid of computers, instructors need to put great efforts to simplify geologic concepts and assist students

understanding. In addition, students have to spend long time to visualize, calculate, assimilate different geological processes, and interpret a great deal of geological phenomena.

To achieve excellence in teaching, computer utilization was established in early 1980s in ESD. At that time, only a few geology courses took advantage of computer development like Computer Applications in Geology and Hydrogeology. Since that date, academic programs in the Department continue to enhance teaching methods and make them more efficient. For example, many textbooks selected for teaching sophomore- and junior-level courses in geology are supplied with CD-ROMs that have a wide range of illustrations, video-clips, and figures that explain different geological concepts. In addition, a collection of software is, nowadays, available in the Department for different teaching and research purposes. The internet resources and Web-base instructions are, also, important tools used in ESD to augment the teaching process.

The objective of this paper is to shed light on the pioneering efforts conducted by ESD to employ the available computer resources for teaching geology courses and achieve excellence in education. It is also important to mention that the authors are not endorsing any of the software companies mentioned in this manuscript.

### COURSE CATEGORIES IN ESD

The use of the computer as a teaching aid has been increased considerably since 1995 until the present time. Appendix A lists both undergraduate and graduate courses that incorporate different computer aids and computational methods as part of their curricula. More information about the courses offered can be found at <http://www.kfupm.edu.sa/es/geology/geology.htm>. In summary, the geosciences courses are grouped into three categories as is explained in the following paragraphs.

The first category includes courses that utilize computer software in laboratory demonstration and hands-on through problem-solving procedures and data analysis. Examples are courses of Structural Geology, Mineralogy and Optics, Petrology, Sedimentation and Stratigraphy and Petroleum Geology. In these courses, problems that use to be solved manually and consume extensive time become automated and less time consuming. Stereographic projection and directional data plot in Structural Geology, Ternary plots in Petrology, and stratigraphic sections and well logs in Petroleum Geology are examples of such problems. Programs that are used to solve problems in Structural Geology include, for example, *SPLOT* (1988), *ROCKPIX* (1989), and *ROCKWARE* (1995). The *ROCKWARE* package, also, contains several other tools that are used to help students solve problems in Sedimentation and Stratigraphy, Hydrogeology, Engineering Geology as well as Geological Mapping Techniques. Figure 1 displays the common geological applications of *ROCKWARE*.

A second category includes those courses that depend heavily on the computer and cannot be taught without its power. Geologic media characterization and flow simulation courses fall in this classification. Examples of these courses are: Applied Geostatistics, Groundwater Modeling, Computational Methods in Geology, Remote Sensing and GIS Applications in Geology and Hydrogeology. Details about some of these courses and software used to teach them are provided in the next section.

The last category is courses that use computer software, textbooks' complimentary CDs, and the internet as supplementary tools. Educational software greatly helps students to understand different concepts and solve variety of problems. Compact disks (CDs) guide students to learn about and explore different geological processes and systems. *Earth* by Tarbuck and Lutgens (1999), *Geology Today* by Murck and Skinner (1999), *Understanding Earth* by Press and Siever (1998), and *Manual of Mineralogy* by Klien and Hurlbut, (1994) are examples of the textbooks



that use CDs to enhance teaching Physical Geology and Mineralogy courses. Figure 2 shows an example of the front page of an educational CD used to demonstrate geologic concepts. The accomplishment of the Department with regard to Internet utilization is discussed in a later section of this paper.

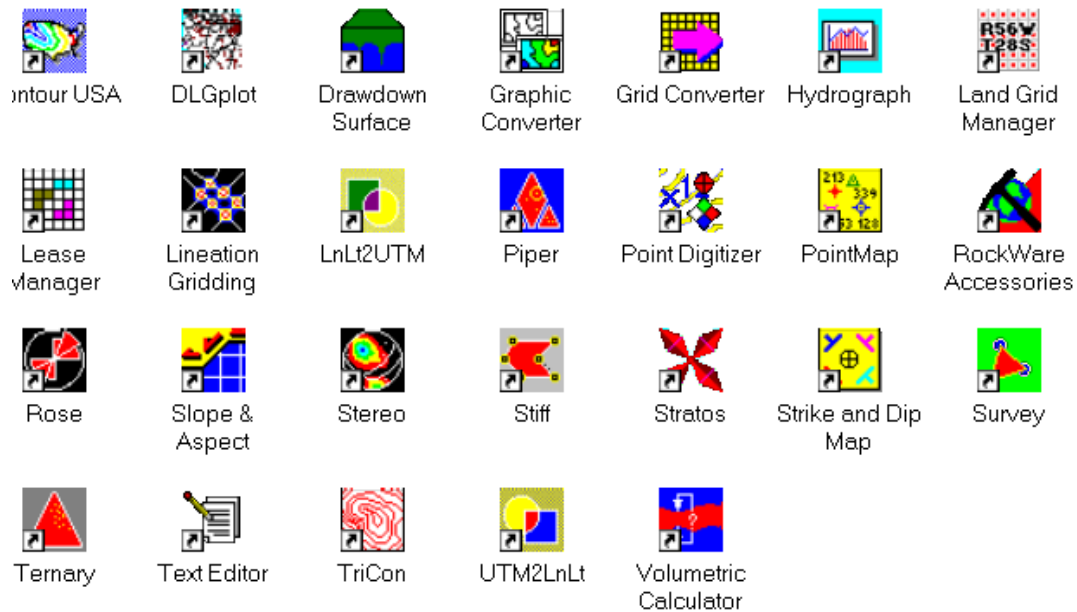


Figure 1. The main menu of *ROCKWARE* (1995) software. This program is used in several courses like Sedimentology, Hydrogeology Structural and Engineering Geology

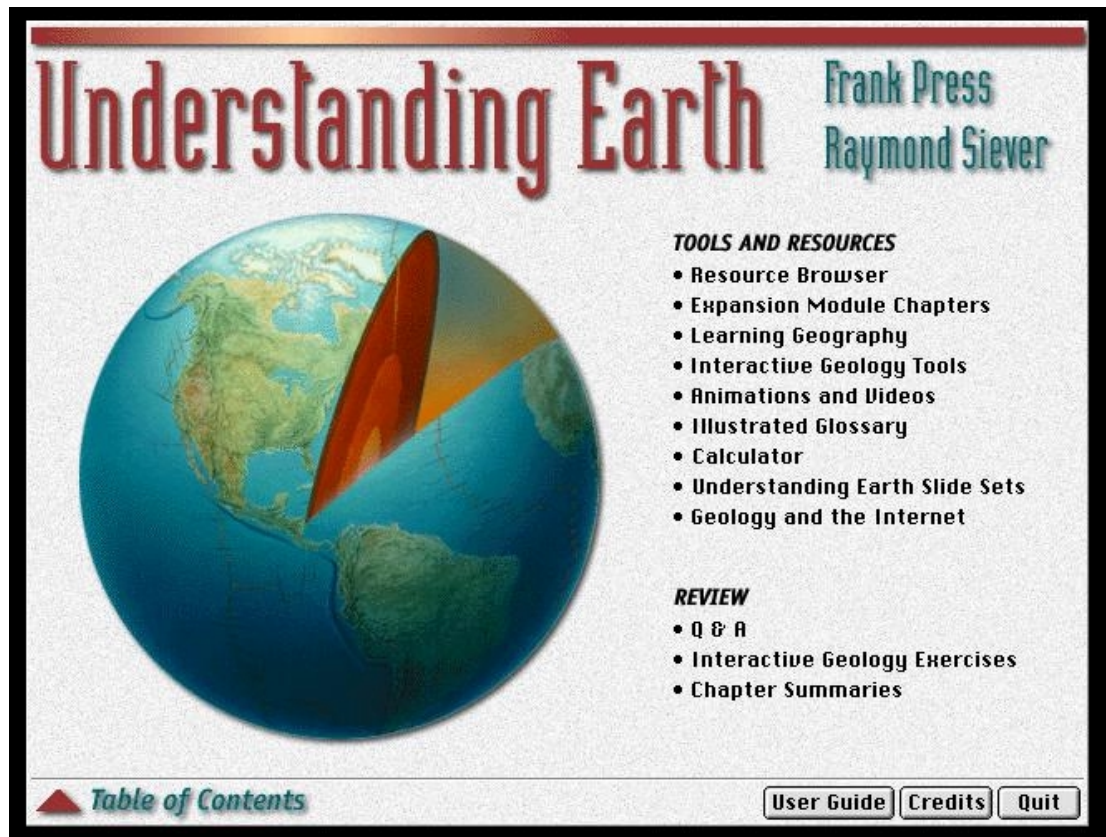


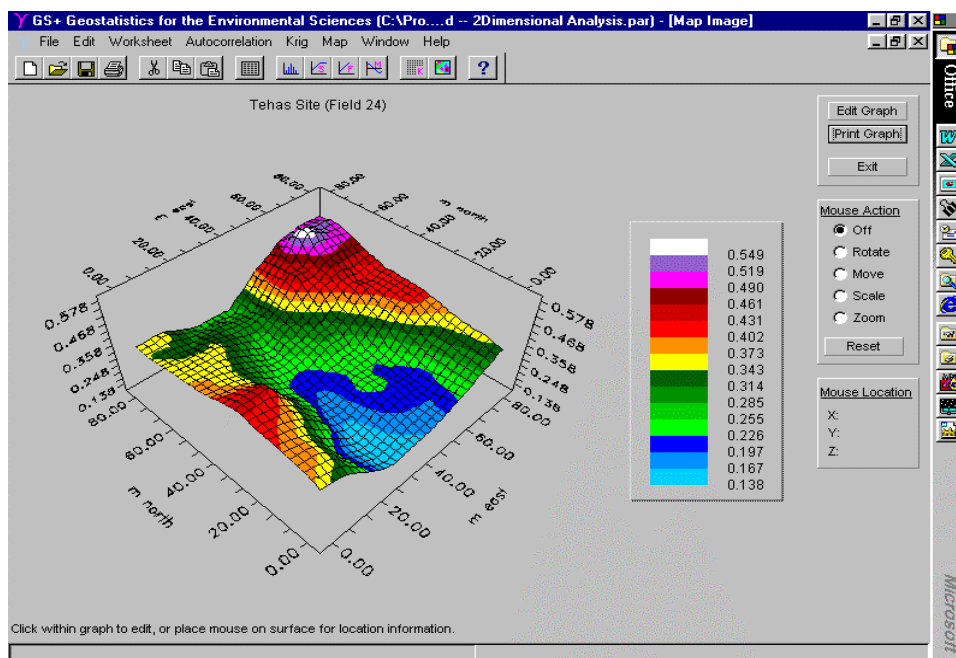
Figure 2. The main screen of *Understudying Earth* CD by Press and Siever (1998)

## CHARACTERIZING AND MODELING GEOLOGIC MEDIA AND SYSTEMS

The development and eventual accessibility of high-speed computers, nowadays, are important technological factors that strengthen the relationship between earth sciences and computers. This situation resulted in developing better teaching and interpretive approaches to deal with different geological phenomena. For instance, oil reservoir characterization, water aquifer description, mineral deposit evaluation, groundwater flow simulation, and contaminant transport modeling were considered very tedious and time-consuming fields of study. However, with the power of computers and computation, these topics became more attractive to graduate and undergraduate students. The following two paragraphs describe several available computational tools used to teach students how to characterize and model geologic media and systems, respectively.

Quantitative description of geological parameters in porous media is highly dependent on the correct application of statistical, mathematical, geostatistical, and computational tools (Clyton, 1994). Two courses, in ESD, were designed to provide students with basic and advanced knowledge to deal with geologic media characterization issues. These courses are Computational Methods in Geology and Applied Geostatistics. Examples of the software used to train students on these topics are:

- *WinGSLIB (Geostatistical Software Library for Windows, Ver. 1.3.1)* which is a collection of FORTRAN programs that include statistical tools, 2- and 3-D spatial models, estimation procedures, conditional simulation routines, and plotting and printing utilities (Deutsch and Journel, 1998).
- *GS+ (Geostatistics for the Environmental Sciences, Ver. 3.17)* is a user-friendly windows program that covers most of the important geostatistical tools. Components of the package are: descriptive statistics, semivariogram analysis, block and punctual ordinary kriging, and 2D and 3D mapping (see Figure 3).



**Figure 3. An output screen of GS<sup>+</sup> (1998) shows the spatial distribution of lead concentrations**

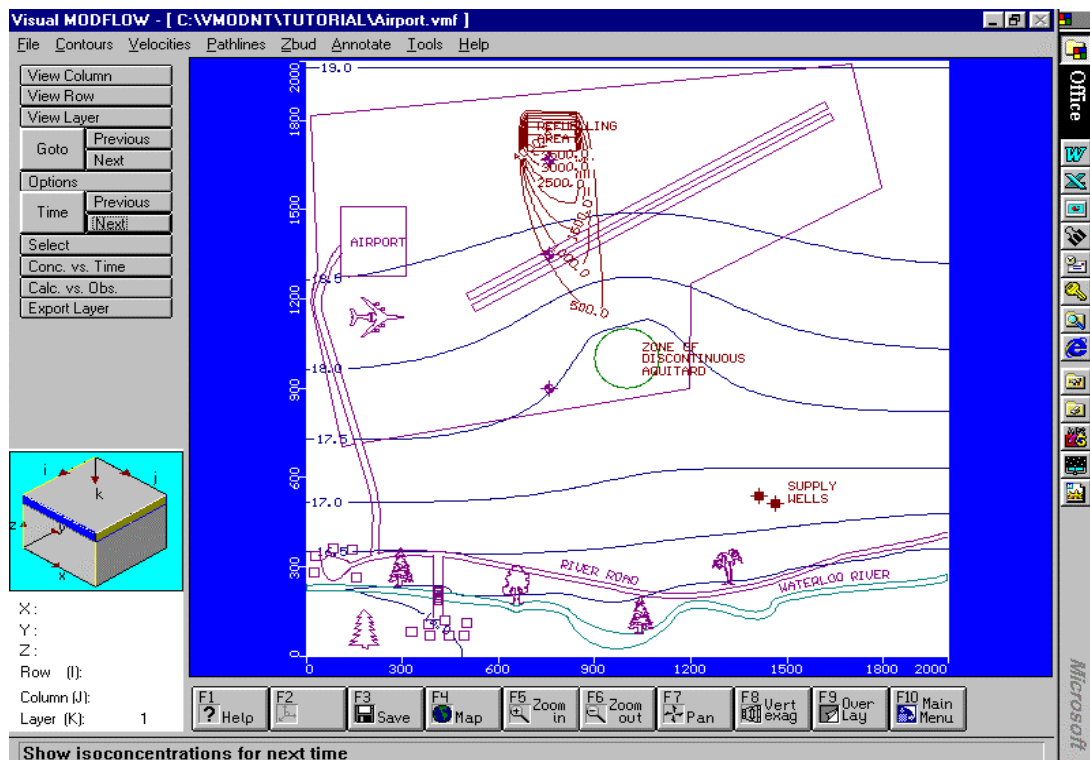
- *SURFER (Ver. 8)*, which is used to model topography or geologic attribute distribution, is considered one of the most powerful surface-modeling packages. It is dependent on applying

mathematical, statistical and geostatistical techniques to generate the required map and girding system.

In addition to the characterization of geologic medium, prediction of geologic fluid system response to natural and man-made alterations is considered very important to earth scientists. The tool used to measure such effects on a geologic system is called a numerical simulator (Anderson, et al., 1993). Although numerical flow and transport models are widely used in earth-related engineering disciplines, earth scientists are the only professionals who can judge their results from qualitative and physical perspectives. For example, the spatial variability of geological parameters may dramatically affect flow and transport regime in the porous media. Dealing with numerical flow simulators is not only a matter of plugging-in and changing input parameters to match the historical records of aquifer responses, but also of understanding the physical meaning behind changing input parameters. As a result, earth scientists are key personnel in running numerical models to get the most appropriate results. Several geoscience courses combine the knowledge of earth sciences with a wide range of computational methods. These courses include Hydrogeology, Advanced Hydrogeology, and Groundwater Modeling.

Examples of state-of-the-art software that are used in teaching these courses and training students at both graduate and undergraduate levels are:

- *GMS* (Ver. 3.1) and *Visual MODFLOW* (Ver. 2.8.2) are user-friendly and widely accepted groundwater flow/transport packages. Both programs help performing calibration, verification, and simulation tasks and output the results on a screen or to a printer. The packages simulate the behavior of groundwater and contamination in the saturated and unsaturated geologic media. Their outputs could be visualized in 2-, or 3-dimensions as shown in Figure 4.



**Figure 4.** An example from *Visual Modflow* (ver. 2.8.2, 2000) output screen. It shows groundwater head distribution and contaminant transportation mechanism towards the water supply wells

- *VS2DT* (Ver. 2.5) is a software program that simulates complicated groundwater flow and contaminant transport in the vadose zone. It generates different output files that represent moisture content, water saturation and pressure head distribution in either one or two dimensions.

### **WEB-BASED INSTRUCTION**

The use of World Wide Web (WWW) as an instructional tool is gaining momentum as more instructors incorporate it in teaching. Any instruction procedure that makes use of a computer facility is called Computer Based Training (CBT), and those that employ the Web for instructional purposes are known as Web-Based Instruction (WBI). This advance in teaching methods can be employed in a distance education model or as an adjunct to teacher-led classrooms. McCormack and Jones (1998) state that one reason for employing WBI is that “most educators aim to use a teaching method that is effective, efficient, and enjoyable”. Web-Based Instruction (WBI) is all of these things.

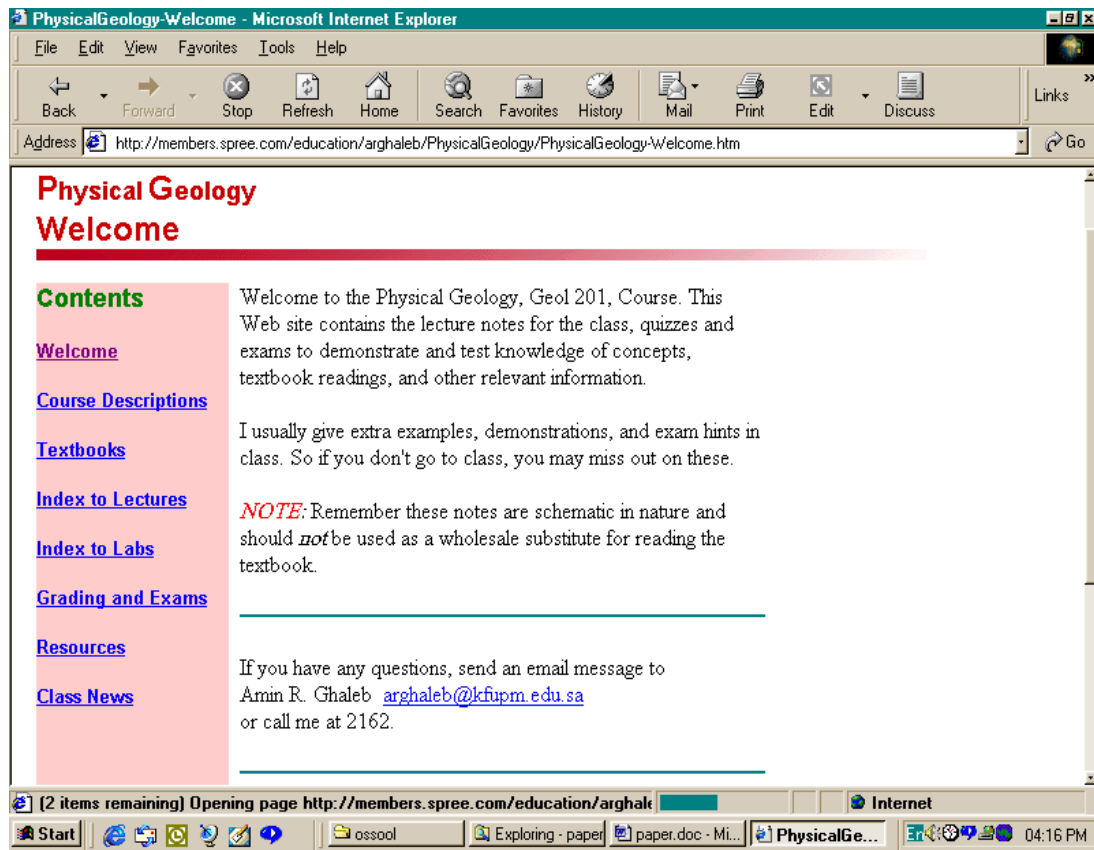
WBI technology is designed to meet the needs of more diverse student groups. Typical classes consist of students with varying abilities and previous knowledge; therefore, WBI can help teachers to deal with these differences. WBI also allows students to work at their own pace and in a more comfortable learning environment. Some students work faster than their peers while others may wish to take longer time to deliver or prepare an assignment.

From a teacher’s perspective, WBI can help in various daily management tasks by reducing the paper flow required for paper-based instruction, allowing for quick and easy revisions to instructional materials, and ensuring that instructional materials are always available to students. An added bonus of Web-Based Instruction is the fact that it can offer students so-called ‘virtual teacher’ because students can access the instructional materials anytime and anywhere (Butler, 1997a, b, and c). This allows students who were absent the opportunity to access instructional materials away from school, and even the possibility to accommodate students in a course when their schedule is full.

Because this method of instruction allows students to explore concepts in a variety of ways and enables teachers to meet the diverse needs of students in single classrooms, the technique was implemented in ESD to grasp these benefits. An example is the application of WBI to Physical Geology course. An experiment of teaching Physical Geology course using WBI was conducted to evaluate the applicability of this technology for teaching purposes in ESD. Once internet access became available to students at KFUPM and the computer resources of the Department were updated, this facility was used as a complement to this course. Students were prepared for this new teaching practice by introducing the internet, internet browsers, web links, and software required to design websites. One hour of the three laboratory hours is devoted to this purpose.

Course materials were prepared and uploaded to the Server to be available for students through WWW. Students were provided with enough information about the contents of course materials as shown in Figure 5. Therefore, they can link to and explore eight major pages of the site. These pages include Welcome, Course Description, Textbooks, Index to Lectures, Index to Labs, Grading and Exams, Resources, and Class News. Students, usually, spend one hour every week browsing chapter’s notes, solving quizzes and exams, and reading other related links worldwide through this site.

After evaluation, it was noticed that the main objectives of this experiment have been achieved. For example, students were exposed to a wide range of information sources via WWW. As a result, this experience helped in enhancing their understanding capabilities and interpretation skills as explained in the subsequent section.



**Figure 5. The introductory page of Physical Geology course web site used in Earth Sciences Department of King Fahd University of Petroleum and Minerals (KFUPM) to teach sophomore students**

### CASE STUDY

A case study was conducted to measure students' reaction about implementing Computer Based training (CBT) techniques in teaching geology courses. A sample of 17 out of 23 ESD undergraduate geology students responded to a questionnaire prepared by the authors for this purpose. The main reasons to seek input from undergraduate students were their new-found experience in dealing with CBT method and more extensive involvement of computer aids and computational methods during their academic life. Students' response was considered a good measure for evaluating computer utilization in teaching. The following academic performance of the sample reflected its fairness:

- 43 per cent of the sample has an overall GPA of 3.0 or above on 4.0 scale,
- 43 per cent of the sample has an overall GPA of 2.0 or above on 4.0 scale,
- 14 per cent of the sample has an overall GPA below 2.0 on 4.0 scale,
- 58 per cent of the sample has a major GPA of 3.0 or above on 4.0 scale,
- 33 per cent of the sample has a major GPA of 2.0 or above on 4.0 scale, and
- 9 per cent of the sample has a major GPA below 2.0 on 4.0 scale.

Half of the sample experienced taking at least one CBT geology course, 19 per cent attended two to three CBT geology courses, and 31 per cent participated in more than four CBT courses. A high percentage of the sample (94%) stated that they benefited from utilizing computer and software in different geology courses because it helps in understanding geologic concepts, solving homework

problems, and interpreting various results. In support of this opinion, 82 per cent of the students indicated that more geology courses should incorporate computer facilities in their curricula to expose learners to new technologies. In response to a question about using Web-Based Instruction (WBI), 76 per cent of the sample stated that they have used the Internet to enhance scientific knowledge. Students explained that the Internet has exposed them to a variety of informational sources and animated illustrations. In addition, it helped in enriching their term papers with recent discoveries and applications. Finally, the complete sample believed that practising use of computer packages and the internet would help them in their future careers because it is the medium of communication and job execution for most employers.

### CONCLUSION

Use of the computer became essential and a major part of earth sciences education. Earth sciences courses are categorized into three groups according to the level of computer involvement in their teaching. Courses that use computers in laboratory demonstration, data analysis and problem solving procedures fall in the first group. The second category consists of courses that depend heavily on computational methods like modelling-related subjects. The last group includes courses that use textbook CDs and WBI to explore, illustrate and clarify different geological concepts.

Utilization of computers in geology courses helps both instructors and students to optimally execute classes and build knowledge. Bennett (1996-97) supported this approach by stating, "Although teachers will have to alter their accustomed practices, they will reach a new level of importance, will accomplish more, and will have greater job satisfaction when schools take advantage of the power of computers". He continued by reporting that "computerized education, properly used, can provide a personal side to education that is impossible today". The personal side becomes possible when teachers are released from conventional class preparation and management tasks, which enable them to focus their attention on individuals and diverse groups of students.

Although Earth Sciences is a small department at KFUPM, its pioneering efforts to enhance students' knowledge by utilizing the language of future, computers, are considered a great achievement. It is believed that the Department will continue this endeavor to supply the Kingdom with highly qualified geologists that are not only equipped with conventional geologic skills but also with modern technology.

### ACKNOWLEDGMENTS

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## APPENDIX A

Undergraduate courses that include computer applications:

- Physical Geology
- Historical Geology
- Mineralogy and Optics
- Structural Geology
- Sedimentation and Stratigraphy
- Petrology
- Petroleum Geology
- Hydrogeology
- Environmental Geology
- Remote Sensing and GIS Applications in Geology
- Geological Mapping Techniques
- Engineering Geology
- Geomorphology
- Computational Methods in Geology

Graduate courses that involve utilization of computers:

- Seismic and Sequence Stratigraphy
- Geophysical Exploration
- GIS Applications in Geology
- Photogeology and Remote Sensing
- Applied Geostatistics
- Geological Lab Techniques
- Advanced Hydrogeology
- Groundwater Modeling
- Development of Groundwater Resources
- Terrain Analysis
- Advanced Engineering Geology
- Geo-Environment

# Factors Influencing High School Student Achievement in Nepal

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*This study investigated the effect of resources and class size on student achievement. A sample of 30 high schools and 152 teachers involved in teaching 556 classrooms were selected. Hierarchical linear modelling (HLM) technique was employed for data analysis. A significant effect was found on student classroom achievement due to the availability and use of resources. Class size contributed a negative effect to student's scores. Significant teacher-to-teacher variation in average classroom student achievement was also found. The study also found a significant difference across the teachers in class size slope.*

Average classroom student achievement, mean class size effect, mean resource effect, variance component, multilevel research

## INTRODUCTION

Students are taught in a variety of ways in schools where teachers use different resource materials within classrooms having unequal sizes. The average student classroom achievement, to some extent, may depend on the teacher's specific way of instruction. Thus, teacher's performance may be shaped by the extent of use of creative teaching materials, quality of such materials, effective teaching techniques employed by the teachers, resources available for them, and use of such resources during the teaching and learning processes. In a study, (Wenglinsky, 2000) mentions that teacher inputs influence professional development, professional development influences classroom practices, and classroom practices influence student achievement. And all of these influences take into account socioeconomic status and class size, suggesting that the impact of teacher quality is measured above and beyond these non-teacher quality factors.

Different research workers have contended that there is a substantial effect of class size on students' scores. It is possible that to some extent the change in student achievement is due to the increment in the class size. The smaller class sizes have shown improved student behaviour and achievement scores (Whittington, 1985; Achilles and Bain, 1986). Correa (1993), and Burnett (1996) have also reported lower student achievement due to an increment in class size. According to Beverly and Glass (1982), students may be inattentive in a large-group lesson because they are sitting at the back and know they will probably not be called on. In a smaller group, students are closer to the teacher and each student is more likely to get a turn. In a field study, Subedi (2000) also found a negative relationship between class size and student achievement in high schools in Nepal. At the policy level optimal class size will equate the marginal benefits of additional students with the marginal costs generated by the reduction in achievement of the individual students (Correa, 1993).



An influential factor on student achievement could be the availability and the use of resources by teachers in teaching and learning activities. Simplicio (2000) suggests that teachers must be willing to utilize different methods, strategies, and approaches to instruction, and they must also be willing to change their assessment tools and evaluation criteria. There exists limited motivation for teachers to put in extra commitment as the teacher policy regarding such matters as levels of remuneration, incentive structure, career advancement remain largely unchanged (Bista, 1999). An anticipated change necessary for schools is the transition of the traditional instructional style to the innovative techniques by providing enough incentives and readily available resources for teachers. Availability of resources and use of resources by teachers in high schools was found to have a positive effect on student achievement (Subedi, 2000). Armstrong, Barbrow, Brush, and Ulintz (1999) also found a positive effect on student achievement when they provided teachers with a wider variety of computer-based resources to integrate with instructional activities. Alkadry and Nyhan (1999), in a research study conducted in Florida, found that the more resources the students were provided with in the classroom the better they improved in their achievement. To improve the learning outcomes within a school, it is imperative to educate teachers on the issue of appropriate use of instructional resources and materials. Teachers are left with a substantial responsibility to employ the instructional tools properly, however, the accessibility of the resources vary school to school.

### **PURPOSE**

The purpose of this study is to explore how student classroom achievement is affected by class size, availability of resources and use of such resources by teachers in the high schools (Grades 9 and 10) in Nepal. Correa (1993) stated that increasing class size reduces student achievement and suggested further empirical study to establish a theoretical foundation for this relationship. Similarly, Turner (2000) suggested the need for further research on the relationship between school resources and student outcomes. Hierarchical linear modelling (HLM), a multilevel technique, was employed for this study since the multiple classrooms were nested within a teacher (several classes taught by the same teacher). Thus, the classroom level and the teacher level models were defined as level-1 and level-2 models respectively. Questions to be answered through this research include, how much teacher-to-teacher variation in within-teacher classroom achievement remains after controlling for the effect of mean class size and mean resource?, in addition to, how much teacher-to-teacher variation in within-teacher class size effect on classroom student achievement remains after controlling for the effect of mean class size and mean resource?

An important contribution of this paper from the analysis perspective is that this study has employed a newly established multilevel research technique using HLM in Nepal. Moreover, this study aggregates student level data to the class level in order to examine the effects of different teachers on the different class groups that they teach. Thus, this study employs as the lowest unit of analyses the class group and not the individual student with the student achievement data aggregated and averaged at the classroom level. As this paper is the product of an eight-month span fieldwork-based research in Nepal, the generalizations of study results will help the related authorities to improve student achievement.

### **RESEARCH QUESTIONS**

Following research questions were answered through this study.

1. a) Does the mean resources of at teacher level significantly predict the average classroom achievement after controlling for mean class size?

- b) Does the mean class size at the teacher level significantly predict the average classroom achievement after holding constant mean resources?
  - c) How much teacher-to-teacher variation in within-teacher average classroom achievement remains after controlling for the effect of mean class size and mean resources?
2. a) Does the mean resources significantly interact with the effect of class size on average classroom achievement at classroom level after holding constant the effect of mean class size?
- b) Does the mean class size significantly interact with the effect of class size on average classroom achievement at the classroom level after controlling for mean resource?
  - c) How much teacher-to-teacher variation in within-teacher class size effect on average classroom achievement remains after controlling for the effect of mean class size and mean resources?

## VARIABLES

### Outcome variable

*Average Classroom Student Achievement:* Average classroom achievement or mean class scores were obtained from the school records based on the final examination results (2000) of Grades 9 and 10. The average classroom achievement scores were based on parallel tests and scoring schema for each subject taken by the students at Grades 9 and 10 on the high schools, where sampled teachers were teaching.

### Classroom level (or level-1) predictor

*Class size:* This variable was the total number of students in the individual classrooms in which the sampled teachers were teaching.

### Teacher level (level-2) predictors

*Mean class size:* This variable was the average of the class sizes that a sampled teacher was engaged in teaching.

*Mean Resources:* This variable was defined as the average availability of resources, such as curricular and co-curricular materials, in the school for teachers and the extent of the use of resources by a specific teacher in the classroom for supporting curricular and co-curricular activities. This variable was measured based on Likert type 5-point rating scale, and was averaged for every sampled teacher. For example, the mean resource associated with a teacher who was engaged in teaching three classrooms was computed as the mean of responses from all three survey forms provided for three separate classrooms. The degree of rating was based on the ranges from strongly agree (5) to strongly disagree (1).

## METHODS

### Population and sample

The target population for this study comprised all the teachers at Grades 9 and 10 of government and private high schools of Lalitpur district, Nepal. As the population units were apparently found in different geographical clusters and there was difficulty in updating the entire list of teachers from the population, multistage cluster sampling was employed to select teachers. Representative random samples were selected using random numbers

through this sampling procedure containing at least 20 per cent of the population members at each stage. This sampling technique was also used because of cost efficiency. The number of clusters in each stage at the time of sample selection was kept as maximum as possible. Increasing the number of clusters increases the precision of the sample and when using cluster sampling, selecting more clusters with less between-group variation improves precision (Henry, 1990). A desired validity was assured by optimizing the sample size. In total, 30 schools out of 152 (20% schools) were selected. High within-cluster heterogeneity was attempted by choosing the sample teachers of both sexes from different subject areas teaching in the classrooms of varying qualities. This helped in increasing the sample precision.

After dividing the entire district into two sub-populations, the Lalitpur municipality and village development committees (VDCs) region, the Wards and VDCs were sampled randomly in the first stage. Altogether, ten VDCs (25%), and seven Wards (32%) were selected from the district. In the second stage, different schools were randomly drawn from the selected Wards and VDCs. Then, 30 high schools out of 152 (20%) were sampled. There were 16 government schools (53%) and 14 private schools (47%) selected in the sample. Four to six teachers were selected from each sample school depending on the number of high school teachers. Altogether, 152 teachers were selected excluding the position-holding teachers in order to obtain the sample. More than 30 per cent of the teachers were sampled from each school for this study. Three to four (at least 40%) classrooms were selected for each sampled teacher based on the number of classes each teacher was involved in teaching. The averages of all classroom scores were computed for those classrooms, which were nested within a particular teacher.

### **Instruments and data collection**

Before designing the final survey form, a pilot survey questionnaire was developed and administered to 10 teachers in three high schools. The final survey questionnaires were prepared based on the teacher's feedback from the pilot survey. The final survey forms were administered to the teachers based on the number of classes they were engaged in teaching. For example, if a teacher was involved in teaching four classrooms, then four forms were administered to that particular teacher in order to obtain the teacher's response on individual classrooms. Once teachers had completed and returned the survey forms, student's average scores (based on 1999 final exam results) for the related classrooms were computed and recorded on the teacher's forms. One hundred teachers were engaged in teaching four classes and 50 teachers were involved in teaching three classes. Participant teachers were requested to provide the factual information as fairly and independently as possible. In case of confusions on reading and interpreting the questionnaires, the researcher clarified teacher's queries. Adequate information and instructions were provided to participant teachers prior to filling out the questionnaires. The confidentiality of the teacher's response was assured in order to preserve the ethical conditions of the survey. All possible measures were followed to increase the validity and reliability of the survey.

The conditions of similar test difficulty in a particular subject for each class provided valid scores for the study. The parallel test designs were handled by the academic administration of each school under the direction of District Education Office. Comparable instructional objectives in a specific course, uniform classroom testing situations throughout the district, the same test lengths and time allocation for specific subjects, and unique government policy regarding the curricula for all the high schools were the basis for valid test scores.

### Data analysis and model specification

Hierarchical linear modelling technique, using the HLM program (Bryk, Raudenbush, & Congdon, 2000) was employed for the data analysis. However, SPSS was used to enter the survey data, and create the SSM file for HLM analysis. Initially, random effect and random coefficient models were run, and tested the significance of intercept, slope, and variance component. Several steps suggested by Tate (1998) were followed before using the teacher level predictors in the level-2 conditional model. The results showed teacher-to-teacher variation for the within-teacher models. So, within-teacher conditional models were formulated. Then, mean class size, and mean resource predictors were used as teacher level predictors in these conditional models.

To answer the above research questions, the coefficients (slopes, intercepts, and variance components) of the level-1, and level-2 models were estimated.

#### *Classroom level (level-1) model*

The average classroom achievement for classroom  $i$  and teacher  $j$  is given by the following level-1 within-teacher model.

$$(\text{CLASSACH})_{ij} = \beta_{0j} + \beta_{1j} (\text{CLASSIZE})_{ij} + r_{ij}$$

where  $i = 1, 2, \dots, 556$  classrooms; and  $j=1, 2, \dots, 152$  teachers. The level-1 predictor was centred around its grand mean.

#### *Teacher level (level-2) model*

At level-2 the average classroom achievement,  $\beta_{0j}$ , and the within-teacher effect of class size on classroom student achievement,  $\beta_{1j}$ , become new outcome variables at the teacher level or for the between teacher model.

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (\text{MEANRES})_j + \gamma_{02} (\text{MEANCLAS})_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10} + \gamma_{11} (\text{MEANRES})_j + \gamma_{12} (\text{MEANCLAS})_j + u_{1j}$$

For above models,  $j=1, 2, \dots, 152$  teachers; and the randomly varying slope,  $\beta_{1j}$  is strictly based on the predictors: mean resource and mean class size. These level-2 predictors were centred around their grand means.

It is assumed that the relationship between the predictors and the outcome variables are linear. The predictors are independent and they are measured error free. The residual terms  $u_{0j}$  and  $u_{1j}$ , which are normally distributed, vary randomly with means zero, and variances  $\tau_{00}$  and  $\tau_{11}$  respectively. The variance-covariance components represent the variability in  $\beta_{0j}$  and  $\beta_{1j}$  remaining after controlling for the effects of mean resource and mean class size. The further assumptions about the error terms are independence, normality and homoscedasticity. Residual versus predicted average classroom student achievement plots and normal curves provided the evidence for correct fit and normality respectively. Scatter diagram for residual versus predicted indicated the homoscedasticity.

## RESULTS

The summarized results for final estimations of fixed effects, variance components, and reliability and average OLS coefficients for level-1 intercept and slope are shown in the Table 1, Table 2, and Table3, respectively.

The mean resource as a level-2 predictor significantly ( $p=0.005$ ) predicted the average classroom achievement ( $\beta_{0j}$ ) at  $\alpha = 0.05$ , after controlling for the effect of mean class size.

**Table 1. Final estimation of fixed effects**

Fixed Effects	Coefficient	Standard Error	t-ratio	d. f.	p-value
Model for teacher means					
Average adjusted teacher mean, $\gamma_{00}$	50.24*	0.97	51.97	149	0.000
Mean resource, $\gamma_{01}$	3.25*	1.13	2.87	149	0.005
Mean class size, $\gamma_{02}$	0.26	0.15	1.78	149	0.075
Model for class size effect					
Average within-teacher class size, $\gamma_{10}$	-0.33*	0.09	-3.43	149	0.000
Mean resource, $\gamma_{11}$	-0.28*	0.11	-2.65	149	0.009
Mean class size, $\gamma_{12}$	0.002	0.01	-0.23	149	0.839

\*significant at 5%, and 1% level of significance

\*\* significant at 5%, level of significance

There was found a high positive effect ( $\gamma_{01} = 3.25$ ) of mean resources on the teacher mean of classroom achievement with standard error of 1.13, and t-ratio of 2.87. In other words, the expected increase in teacher mean of classroom achievement is found to be 3.25 with respect to one unit change in mean resources. The mean class size did not have a significant effect. However, there was found to be a very small positive effect for mean class size ( $\gamma_{02} = 0.26$ ) on average classroom achievement at level-2.

**Table 2. Final Estimation of Variance Component**

Random Effect	Variance	d. f.	Chi-square	p-value
Average Classroom Achievement, $U_{0j}$	112.13*	134	2140.48	0.000
Class Size Slope, $U_{1j}$	0.33*	134	288.17	0.000
Level-1 effect, $r_{ij}$	2.59			

\*significant at 5%, and 1% level of significance

A significant variability ( $p < 0.001$ ) across teachers in within-teacher average classroom achievement was found after controlling for mean resources and mean class size. The variance for within-teacher average classroom student achievement was found to be 112.13 with the chi-square value of 2140.48.

**Table 3. Reliability and average OLS coefficients for level-1 intercept and slope**

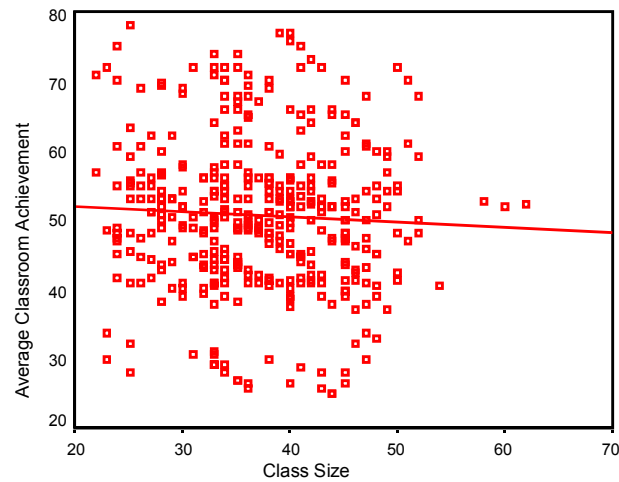
Random Level-1 Coefficients	Reliability	Average OLS Level-1 Coefficients
Intercept	0.75	51.21
Slope of Class Size	0.30	-0.48

Mean resources significantly predicted ( $p=0.009$ ) the within-teacher effect of class size on achievement at classroom level holding constant the effect of mean class size. There was found to be a negative effect of mean resource ( $\gamma_{11} = -0.28$ ) on the slope of class size with standard error of 0.11, and t-ratio of  $-2.65$ . Significant effect ( $p=0.839$ ) was not found for the mean class size in predicting the within-teacher influence of class size on achievement (with standard error of 0.01) at classroom level after controlling the effect of mean resources. However, mean class size had a very small positive effect ( $\gamma_{12} = 0.002$ ) on the slope of class size at the level-1 model. In addition, a significant effect (with  $p=0.001$ ,  $\gamma_{10} = -0.33$ ) was found for the class size effect on classroom achievement in the teacher population.

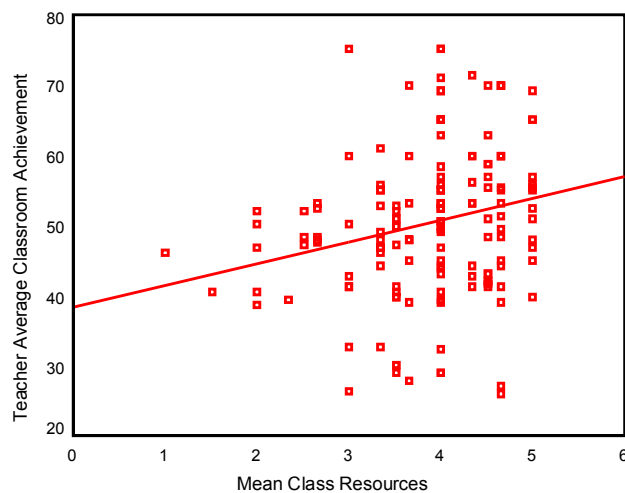
The teacher-to-teacher variation in the slope of class size was found to be significant ( $p < 0.001$ ) after controlling the effect of mean class size and mean resources. The variance component for the effect of class size on classroom student achievement was found to be 0.33 with the chi-square value of 288.17. The variance component for the level-1 equation was found to be 2.59. The chi-square statistics for the final estimation of variance components were based on only 137 sample units that had sufficient data for computation. However, the fixed effects and variance components were based on all the 152 sample observations.

The proportion of variation across teachers, also termed as the intra-class correlation, was 0.98 showing the percentage of variance in classroom student achievement between teachers. The proportion of variance explained by this model compared to the random coefficient unconditional model was 4.9 per cent; as a result of the limited number of variables in the final model the variance explained was small.

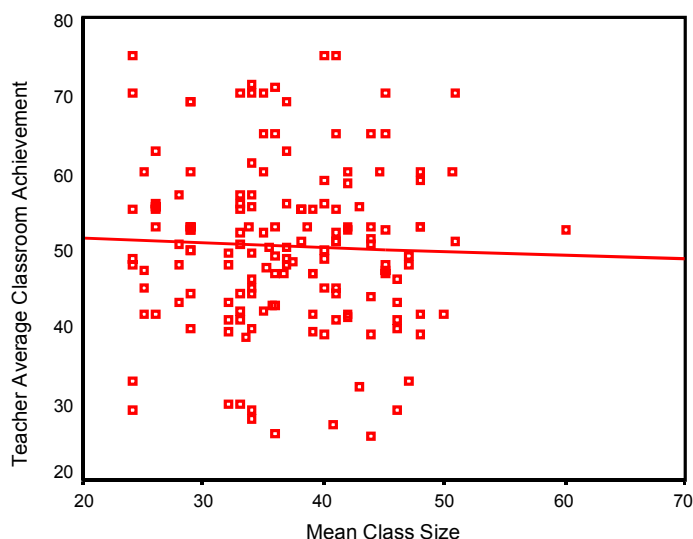
The scatter plots with line graphs presented in Figure 1, Figure 2 and Figure 3, display the relationship between average classroom achievement and different predictors at the classroom and teacher levels.



**Figure 1. Scatter plots with line graph showing a negative relationship between Classroom Achievement and Class Size**



**Figure 2. Scatter plots with line graph showing a strong positive relationship between Teacher Average Classroom Achievement and Mean Class Resources at level-2**



**Figure 3. Scatter plots with line graph showing a negative relationship between Teacher Average Classroom Achievement and Mean Class Size at level-2**

## DISCUSSION

The resource variable at the teacher level provided a substantial contribution to the average classroom achievement. A positive effect on average classroom scores due to the availability of resources and use of such resources by teachers is worthy of discussion. Although the extent of the availability of resources for teachers may vary from school to school, the accessibility of educational materials in schools is an essential means of enlivening the academic enterprise. Teachers can maximize classroom achievement by optimizing the use of the available resources, controlling for the effect of class size at the same time. In order to increase achievement, optimizing the use of instructional materials properly by a teacher in the favour of students is more crucial than merely using such materials.

For the teacher level model, the contribution of resources to class size effect was negative. This finding is important in the sense that the influence of resources within a classroom is diminished as the class size increased. As it is apparent that a teacher needs many more resources for a class with a relatively large class size, the limited availability of instructional materials and resources adversely influenced instructional processes. This kind of adverse influence of resources on class size, resulted in a negative impact on classroom achievement.

A negative effect of class size on classroom achievement could be due to a crowded classroom producing a less favourable teaching and learning atmosphere. Such a situation reduces the teachers' chance for individual student attention. In the context of Nepal, only a few high schools have predetermined their policy to admit a specific number of students per classroom or section of a class. The teaching and learning activities are the functions of student classroom admission. Possibly the larger class sizes more adversely influenced students' achievements. The schools' autonomy to control the internal factors for structuring optimum class size in order to increase student's achievement is considered to be essential. Bista (1999) suggests a greater focus should be given on what happens inside the schools because local actions and factors generally determine student outcomes. A favourable class size that encourages effective teaching and learning strategies will promote an advantageous classroom environment. This, in turn, will help provide individual student care, teacher-student interaction, and increase student achievement.

An important variation across the teachers in average classroom achievement was observed due to the actual differences in mean classroom achievement rather than extraneous factors. As individual teachers have varying qualities in their skill, performance, socioeconomic status, experience, age and other characteristics, they may have uniquely contributed to the student achievement. Also a teacher-to-teacher variation in the class size effect (slope) was found to be statistically significant, signifying that a true variation exists in the population of class size effects at classroom level across the teachers, after removal of the effect of resources and mean class size.

### CONCLUSION

This study found a positive effect of resources and a negative effect of class size on average classroom achievement. A significant variation was also found across the teachers in average classroom achievement and the class size effect. Teachers who used the available resources effectively in the classroom were able to increase the achievement. The availability of resources and use of such resources by teachers contributed to an adverse impact on class size effect, and in turn, class size influenced negatively average classroom achievement. A negative effect of class size suggested that a classroom with a large number of students is likely to decrease the average level of achievement. Significant variations were found in average classroom achievement and class size effect across the teachers.

The critical issue for education is how to induce the most productive use of school resources through governance, finance, and management structures that enhance student achievement (Bolton, 2000). Of course, it is more essential to arrange adequate resources including instructional materials and set up standard class sizes within the schools based on the available resources. Suggestions include leasing space, collaborative, relocating administrative space, and district-wide redistribution of space (Burnett, 1996).

The generalizations of the results of the study can be extended to high school students of a similar age and grade in Nepal. Further policy researches to structure the allocation and use of available resources to specific subjects and establish an optimum class size are suggested. The school district evaluators and researchers can extend similar studies to fit higher level models using, for instance, school level predictors for a level-3 model, and district level predictors for a level-4 model. The use of important variables, such as teacher's commitment, teacher's socioeconomic status, and the investment in managing resources necessary to teach specific subjects would be more meaningful to predict achievement due to such factors.

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# Teacher Burnout and Perceptions of a Democratic School Environment

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*How do democratic personnel policies of the public school principal affect teacher burnout and how does teacher burnout affect support for democratic instructional styles? Using sequential OLS models from questionnaire data of 2,961 urban public school teachers, the research finds that teachers, who perceive that their principals are non-authoritarian, are supportive and collegial, and involve them in campus decision-making, are less likely to experience burnout than those teachers who perceive the opposite. However, both burned out teachers and those who report that their principal treats them democratically do not support a similar democratic treatment of their students, as indicated by their rejection of student-centred instruction. Policy implications of the research are discussed in the context of the state's accountability mandate.*

## MANAGEMENT STYLE AND TEACHER BURNOUT

The concept of burnout originated in the writings of the psychologist Freudenberger (1974). He first coined the term burnout to characterize a malady experienced by human service professionals who appear to 'wear out,' or reach a stage where they are no longer able to perform their tasks effectively, and sometimes even to care about their clients.

Research on burnout has generally come from a psychological orientation, which views burnout as a failure to cope with job stress. This approach defines burnout as a loss of idealism and enthusiasm for work that is manifested by exhaustion, depersonalization, depression, low morale and emotional withdrawal (Maslach and Jackson 1981). It is an approach which regards the causes of stress as being related to work overload, role conflict and role ambiguity (see Dworkin 1997).

Because of this focus, the emphasis of most psychological research sees burnout as an inability to cope with an array of life stressors. This approach tends to ascribe 'blame' for burnout to the victims of burnout and proceeds then to offer of a panoply of strategies to enhance coping ability (Abel and Sewell 1999; Cedoline 1982; Farber 1991; Gold and Roth 1993; Pines 1993; Shaw, Bensky, and Dixon 1981; and Swick and Hanley 1983).<sup>1</sup>

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<sup>1</sup> It is possible to conceptualize a principal who, faced with a burned-out teaching staff, might need to resort to authoritarian practices to compel teachers to fulfill their full teaching duties.

In addition to the somewhat clinical approach cited above, there are social psychological orientations that view burnout as the loss of idealism and enthusiasm that can be organizationally induced, although this orientation, too, recommends coping strategies (Cherniss 1980, 1992; Maslach 1978a, 1978b, 1993; and Maslach and Jackson 1982). Likewise, Pines and Aronson (1988) portray burnout as a mental exhaustion induced by emotionally demanding situations. Pines (1993) suggests that such situations create an existential crisis in which the individual comes to question his or her role identity.

The sociological views of burnout take a somewhat different focus. These views have grown from the tradition of alienation research. In this perspective, which is embraced by the Berkeley Planning Associates (1977), Dworkin (1987, 1997, 2000), Dworkin, Haney and Telschow. (1988, 1990), LeCompte and Dworkin (1991), Schwab and Iwanicki (1982), Sparks and Hammond (1981), burnout is seen as a form of role-specific alienation. Borrowing from the conceptualization of Seeman (1959, 1975), this perspective views burnout as the result of the conjoined effects of powerlessness, meaninglessness, normlessness, isolation, and estrangement. Thus burnout is seen as organizationally induced and should thus be redressed through organizational change, not personal coping.

The present paper represents an application of the sociological perspective where burnout is a form of role-specific alienation. Its purpose is to investigate the relationship between teacher burnout and the subjective experience of a particular form of school setting, namely the democratic school. The particular relevance of the linkage between burnout and democratic schools is twofold. First, because burnout is seen to result from a sense of powerlessness, this condition that can be resolved by the prerequisite organizational conditions that permit democratic schooling to flourish. But second, a burned out teaching staff may be incapable of making the necessary extra efforts to empower students in a student-centred democratic school.

Thus, in this study we focus attention upon the teachers' perceived managerial style of their school principals, the perceived collegiality that exists among teachers at their school, and their endorsement and practice of a student centred pedagogy. These attitudes and reported behaviors are examined as factors both affected by, and likely to affect teacher burnout. Our research objective is to examine the links between the behaviors and perceptions associated with a democratic school and teacher burnout.

### **TEACHER BURNOUT AND THE DEMOCRATIC SCHOOL**

Building on the alienation perspective as outlined above, studies of teacher burnout should focus attention on various characteristics of school organization, and the conditions that flow from them. Some of these have already been identified. For example burnout has been linked with school size, school bureaucratic structure, grade level, the administrative style of the principle, and other similar factors which contribute to a stressful work environment. Furthermore, many of these characteristics have a curvilinear relationship with burnout, which suggests that burnout may be a phenomenon that appears under moderate rather than extreme conditions.

Our focus is on a particular kind of school organization that has periodically received much attention, namely the 'democratic' school. Recently, interest in the concept of a democratic school revolve around issues that vary from its student-oriented pedagogical ideologies (that is, that democratic schools are conducive to better achievement by students), to specific subject concerns, for example the learning of civics (that students learn about a democracy better in a democratic school). But interest in the democratic school originates from wider concerns as well.

The concept of the 'democratic' school has its origins in the writings of John Dewey. Dewey believed that a democratic society was one in which the divisions between groups, no matter on what criteria, should be minimized and that shared values, meanings and goals should be maximized (Soltis 1994). The school, according to Dewey, should be a microcosm of the type of society that is desired. Thus to achieve a democratic society, it is necessary to first have a democratic school (Dewey 1916). Accordingly, the implementation of a 'democratic' school would have implications for the roles and behaviours of administrators and teachers within it, and this organization did, and still would, clash with the hierarchical organization of traditional western schooling.

If organizational conditions are seen to be a cause of teacher burnout, as the sociological perspective described above argues, then one might expect that there are identifiable aspects of organizations that are directly linked to its occurrence. For example, if an authoritarian structure, the centralization of decision-making in administrators, the external monitoring of teachers and the absence of professional autonomy are the causes of teacher alienation and burnout, then the democratic school might be seen as an organizational alternative to minimize its occurrence. However there are some complications in this hypothesis that need to be considered.

At a macro level, it has been suggested that there is a fundamental contradiction between the notion of a democratic school and the kinds of school structures found in a free-market economy. On the one hand parents want the right to choose the best school to suit their own and their children's interests. On the other hand, society regards schools as primary agents for creating a common set of values and culture among its citizens (Levin 1994). This conflict between the private and social goals of schooling also impact upon the environment of the school, and the position of the teachers within it. The idea of a democratic school as the best structure for the maintenance of a democratic society resolves this conflict through the interactions between the main participants of the schooling process, namely the principal, the teachers, the students and the parents.

Various theories of management suggest that a democratic environment in a school context not only benefits the academic and socialization experiences of students, but also affects the work productivity and well-being of teachers. A democratic school environment is one in which teachers and students, along with school administrators, engage in open and shared decision-making processes in the teaching-learning enterprise where differences are minimized. Dewey argued that in a democratic school the students would share in the determination of their own learning environment and learning content and process. Many contemporary writers advocate a democratic voice for students and teachers in school management (Apple 1988; Carnoy and Levin 1985; Darling-Hammond 1996; Giroux 1988; Goodlad 1996; Sarason 1996; Soder 1996; Tedford 1996). To the extent that this aspect of the democratic school is implemented, then the professional and autonomous role of the teacher is radically changed from its traditional form. Further, as Darling-Hammond (1996) has observed, the task of implementing democratic instruction is both daunting and requires skills not often provided to teachers in their pre-service instruction. Herein then lies the contradictions of the attempt to incorporate democratic values into school organizational structures.

One manifestation of these contradictions can be found in the current phase of school reform in the United States and other countries. Central to these reform efforts have been accountability systems that mandate high-stakes, standardized testing. These tests are used as a sole or principal evaluation instrument in order to award or withhold an educational outcome such as student grade promotion or graduation, or to assess teachers, school

administrators, schools, or school districts, including the likelihood of their continued employment, continued operation, or state certification. Accountability systems such as that which is prevalent in the United States affect teachers and schools and increase the chances that teaching will be narrowed to the curriculum actually tested, and that teachers or school administrators may compromise their professional standards order to elevate student scores (McNeil 2000). This has the potential of retarding the development of the kind of democratic school environment that empowers teachers and students and mitigates burnout.

### CONCEPTS AND THE ANALYTICAL MODEL

In order to proceed with the examination of our proposition, that a democratic school reduces the likelihood of teacher burnout, we first must define what we mean by a democratic school. For our definition of the democratic school, we rely heavily on the discussion by Tse (2000). Given that we are primarily concerned with the school organizational structure and its impact on teacher morale, we begin by selecting from Tse those characteristics of a democratic school that likely affect a sense of alienation from the teaching role. What follows is an itemization of the relevant characteristics.

- Non-authoritarian and non-bureaucratic management by the principal;
- Open communication of knowledge and information;
- Shared decision-making regarding school matters;
- A sense of responsibility by staff and students for school decision-making;
- Student-centred approach to teaching and learning processes;
- Parents are regarded as partners in the educative process;
- Full representation of teachers and students on the school council or school board.

Not everyone would agree with this description of a democratic school. Nor is there consensus about its desirability. These are not the issues of concern here. What is of concern are the consequences of a democratic school environment for the facilitation of the professional role performance of teachers. Although in theory the ideology of a democratic school environment assumes the feeling of a satisfactory role performance by teachers, in practice this has not been the target of systematic investigation. While we have research studies of how students respond to and perform in a democratic school environment, we know little about how teachers respond and perform. In particular, we know little about whether a democratic school creates an organizational environment that minimizes factors that are conducive to teacher burnout.

However, in making the above argument, there are some cautions that we need to point out. Democratic schools may not minimize teacher burnout; they may even contribute to its occurrence. What are some of the negative factors that must be considered? First, teachers themselves may consider their own role as more ambiguous in a democratic setting. Most role definitions for teachers assume a hierarchy of knowledge and power where the teacher stands above the student. However in a democratic school environment, this hierarchy is minimized, with consequences for a wide range of negotiable behaviours, including those of learning and discipline. In a traditional school the power of teachers is vested in their exercise of authority to order compliance, while in a democratic school a teacher's power is vested in expertise, which must be regularly demonstrated through persuasion. This state of role-ambiguity might be stress producing, at least for some teachers where role-ambiguity is uncomfortable.

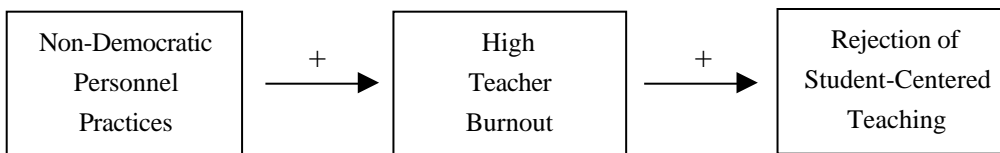
Second, democratic schools are likely to require teachers to exert extra effort in working on a shared basis with students in the teaching-learning process. This too might create a more stressful environment for teachers. One of the characteristics of burned-out teachers is that

they tend to be less willing to make extra effort on behalf of their students. Whether the democratic environment is the cause or the effect of the burnout syndrome, clearly the environment itself may become a catalyst for its manifestation.

Third, the notion of a democratic school cannot be conceptualized without recognizing that the school is also a workplace. It is a site where the power relations between administrators, teachers, students, and even parents, are contested. Therefore even a democratic school must somehow resolve these issues of power (Ginsburg and Kamat 1997). For these reasons, it could be argued that a democratic school further ‘de-skills’ a teacher, in that teaching and learning become a shared exercise in which the teacher is only one equal partner, if that (Seddon 1997). All of these characteristics add further complexity to the questions that guide the present study.

Finally, under the aegis of school accountability mandates by the public, government, and business, the content of curricula is often removed from the control of school personnel (see Heubert and Hauser 1999). Control over curricular decision-making that often accompanies the implementation of accountability systems may make democratic schooling problematic. Negotiating the pressures for some level of democracy in schools and the accountability mandates can result in heightened job stress for teachers as well as in school administrators (Dworkin 1997).

Keeping in mind these cautions, we have developed a model, presented in Figure 1, that describes our hypotheses and guides for analyses of the relationship between the ‘democratic’ characteristics of schools and the incidence of teacher burnout. Our model also examines the extent to which teacher burnout is related to the rejection of student-centred teaching, a central component of the democratic school.



**Figure 1. Analytical Model showing the hypothesized relationship between Management, Burnout and Support for Democratic Education**

Our analytical model is based on the production-function procedure according to which we cluster variables into additive blocks. The relationship between democratic education and burnout is expected to be complex, even when the perspective of only the teacher is considered. In our analysis we assume that personnel practices of the school principal affect burnout, but we recognize that the reverse could be argued.<sup>2</sup> Nevertheless, much prior work has suggested that the principal is central in defining the school climate and in affecting teacher morale, including the magnitude of teacher burnout (Dworkin 1987; Dworkin, Haney and Telschow 1990; Dworkin and Townsend 1994; Firestone and Rosenblum 1988; Kyriacou 1980; and Murphy and Paddock 1986). Therefore, we hypothesize that the teacher’s perception of the authoritarian style of the principal will be directly related to teacher burnout. We expect that this relationship will persist even when other burnout variables are included in the analysis.

<sup>2</sup> It is possible to conceptualize a principal who, faced with a burned-out teaching staff, might need to resort to authoritarian practices to compel teachers to fulfill their full teaching duties.

In the second part of the model regarding support for democratic instructional practices, we place burnout as an independent variable. Jackson (1968) observed long ago that teachers exert much control over the students once the classroom door is closed and the principal returns to his or her office. Democratic instruction, or 'the acceptance of student-centred teaching', requires additional effort in classroom planning compared to those in which a set lesson plan, perhaps even drawn from a textbook, is used.

Burned out teachers, according to Maslach and Jackson (1981) blame their students for their sense of a personal loss of accomplishment (meaningfulness). As democratic teaching styles require both trust and respect on the part of teachers, it is unlikely that burned-out teachers will grant such trust and respect to the very students they blame for their sense of loss. Finally, it is unlikely that those teachers who feel that they are denied autonomy and freedom by their school principals will accord autonomy and freedom to their students. Consequently, we propose that the relationship between burnout and democratic instruction requires burnout to be the independent variable and democratic instruction the dependent variable. Furthermore, we hypothesize that the more burned out the teachers, the less they support student-centred curriculum.

### DATA AND THE CONSTRUCTION OF VARIABLES

The data for this analysis are taken from a survey questionnaire administered in the fall of 2000 to all teachers in one of the Houston area's largest school districts.<sup>3</sup> The district employs over 3,600 teachers and has an enrollment of 55,000 students.<sup>4</sup> It is one of the largest in Texas to receive an accountability rating of 'Recognized' by the Texas Education Agency, thereby indicating that it has promoted above average achievement among all major racial/ethnic groups of students and among students from low income families. The student body of the district is composed of 49.7 per cent Hispanic, 35.4 per cent African American, 11.7 per cent white, and 3.2 per cent Asian American. The district student body has slightly more boys than girls. A total of 70.1 per cent of the students participate in the Federal subsidized lunch program thereby labeling the district as 'high poverty'. This poverty rate is higher than found statewide, but similar to that found in large urban districts in the state.

Of the total teaching population, 2,961, or 81.8 per cent completed the survey. Although teacher demographics are not comparable to those of the student body (60.5% of the teachers are white, 28.9% are African American, 9.3% are Hispanic, and 1.3% are Asian American), the district is one of few in the metropolitan area that has had a history of minority teacher employment for over 30 years. The district usually loses 10 to 15 per cent of its teachers each year, largely due to retirements and some due to the turnover of new teachers. This turnover rate is comparable to that of most school districts in the metropolitan area and is lower than in many of the other high-poverty districts. As is

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<sup>3</sup> The study was part of a larger project that sought to measure the nature of the school climate in the district using 23 different indicators. However, to enhance the return rate no attempt was made to collect data which might identify individual teachers, or to link individual teacher attitudes to student performance on the state-mandated test, the Texas Assessment of Academic Skills (TAAS). Therefore, some demographic variables were deleted from the survey instrument.

<sup>4</sup> One of the authors of this paper has had a working relationship with the district for a decade and his research group serves as the out-sourced research department for that district in studies of student achievement and faculty attitudes.

typical of K-12 schools, the teachers in the district are predominantly female (79%). More than one-half of the teachers have been teaching for less than ten years.

The questionnaire items were analyzed using principal component analysis to determine their structure, and factor scores were computed to create scales based on the individual items making up the latent constructs. Reliability estimates were determined for the scales based upon Cronbach's coefficient alpha. Table 1 presents the resulting variables that are included in the analysis. They are grouped according to the constructs they measure, with some constructs containing more than one variable. In each instance the variables measuring a component formed a unidimensional scale with each factor loading surpassing a threshold of 0.40. Non-significant items were dropped from the scales prior to re-factoring. Reliability coefficients also attained acceptable levels for the number of the variables they contained. In most instances the alpha value exceeded 0.80. Table 1 presents the constructs, their measurement, and reliability coefficients.

Table 2 presents the results of two OLS regression analyses in which the two hypothesized elements of democratic education are the dependent variables, and the perceived and actual structural variables, and the attitudinal variables are the independent variables. The left hand side of the table, Part A, presents the effect of democratic personnel practices on teacher burnout, and the right hand side of the table, Part B, presents the effect of teacher burnout on support for student centred teaching. In our analyses in Table 2 we list all the variables used in the initial regressions, but display the coefficients for a revised (trimmed) model that contains only the significant relationships.

The predictors of teacher burnout, shown in Part A, parallels prior work by Dworkin (1987, 1997), but Table 2 further incorporates the role of perceived democratic personnel policies, including teacher involvement in school decision-making, perceived principal collegiality and support, and perceived principal non-authoritarianism. The OLS model incorporated the blocks of variables that described the constructs in the previous section. The full regression equation with all 13 variables produced a significant adjusted  $R^2$  value of 0.427 (unadjusted  $R^2 = 0.431$ ). Trimming the model to include only the six significant predictors yielded an adjusted  $R^2$  value of 0.430 (unadjusted  $R^2 = 0.428$ ).

The trimmed model in Part A revealed that for each standardized increment in the perceived democratic style of the principal, teacher burnout is reduced by a third of standardized unit ( $\beta = -0.338$ ). This variable is the strongest in the model and the relationship is consistent with previous research findings.<sup>5</sup> Additionally, burnout is reduced by the perception that one's students are academically able ( $\beta = -0.179$ ); and that discipline policies on the campus are effective ( $\beta = -0.197$ ). On the other hand, irrespective of principal management style, racial tokenism or racial isolation of the teacher decreases burnout slightly ( $\beta = -0.048$ ). Collegial support by co-workers and support by parents each reduced burnout slightly ( $\beta = -0.048$  for colleagues and  $\beta = -0.089$  for parents). The constructs of perceived principal

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<sup>5</sup> Initial analyses examined the effect of each of the three components of democratic personnel policies (non-authoritarian principals, principal support, and teacher involvement in policy planning and implementation) on teacher burnout. The  $\beta$ s for the three did not contribute more to the total variance explained than did the combined measure used in the paper. The  $\beta$  for non-authoritarian principals on burnout was -0.097, the  $\beta$  for principal support was -0.147, and the  $\beta$  for teacher involvement was -0.154.



efficacy, school safety and orderliness, and each of the demographic characteristics of the teachers played no significant role in burnout.<sup>6</sup>

**Table 1. Constructs and Measured Variables**

Construct	Measurement	Cronbach's Coefficient Alpha
<b>Burnout</b>	Teacher Burnout Scale (Dworkin 1987, forthcoming), 10 items Role-specific alienation (based on Seeman 1959, 1975)	0.806
<b>Democratic Schooling (Two Constructs)</b>		
Democratic Personnel Policies	Principal Support and Collegiality, 7 items	0.907
	Authoritarian Principal (reverse coded), 4 items	0.633
	Teacher Involvement in Decision-Making, 7 items	0.763
Democratic Instruction Practices	Student-Centered Instruction, 7 items (including teachers' emphasis on problem solving, efforts to make students independent learners, stress on engaging and involving students in the learning process, efforts to go beyond the textbook, and attempts to discover students' talents & interests)	0.800
	Traditional Instruction (reverse coded), 5 items (including an emphasis on lectures over group discussions, rote memorization, and drills)	0.740
<b>Principal Efficacy</b>	Principal seen as garnering resources, articulate goals, define expectations, regardless of perceived level of authoritarianism, 8 items	0.903
<b>Collegial Support of Co-Workers</b>	Perception that teachers support one another, 8 items	0.892
<b>Parental Support and Involvement</b>	Parents seen as ensuring that homework is completed, students arrive at school ready to learn, 8 items	0.801
<b>Student Abilities and Performances</b>	Perceptions of student enthusiasm with learning, concerned about grades, work hard, capable of learning, 9 items	0.804
	Perceived national academic ranking of students (Democratic schooling is based on trust and respect. Low teacher appraisals should be linked to undemocratic instructional practices)	0.711
<b>Safe and Orderly School</b>	Effectiveness of disciplinary policies necessary for democratic schooling (Tse, 2000), 11 items	0.862
	Perception of risk of physical harm at hand of students, which heightens burnout, 3 items (Dworkin 1987)	0.775
<b>Racial Isolation and Tokenism</b>	Actual percentage of teachers and students not of the respondent's race; tokenism heightens alienation (Kanter, 1977)	N/A
<b>Teacher Demographics</b>	Teacher's Gender (dummy coded female =1, male = 0) Teacher's Race (coded as individual 1,0 dummy variables for African American, Hispanic, Asian American, and White Years of Teaching (These are structural variables that describe what the teacher brings to the job setting. They are commitment 'sidebets,' or factors that are extrinsic to the work role, but which make role abandonment costly. Dworkin 1987, 1997; Cherniss 1980, 1992, Cedoline 1982; Jackson, et al. 1986; and Schaufeli et al. 1993 demonstrate how they affect burnout)	N/A

The right side of Table 2, Part B, incorporates the 13 variables initially used to explain teacher burnout, and adds teacher burnout as an additional explanatory variable with attitudes toward student-centred teaching, now considered the dependent variable. This is the second aspect of democratic education in our model. The untrimmed analysis produced a

<sup>6</sup> In an alternate model not reported here, where the dummy variable 'white teacher' was included, that variable was associated with slightly less burnout ( $\beta = -0.059$ ). In early work on teacher burnout, white teachers were more likely to experience burnout than minorities. However the several waves of school reform, following the National Commission on Excellence in Education (1983), have heightened the degree of burnout among minority group teachers.

small, but significant adjusted  $R^2$  value of 0.097 (unadjusted  $R^2 = 0.104$ ). Trimming the model to eliminate non-significant variables yielded an eight-variable result with an adjusted  $R^2$  of 0.099 (unadjusted  $R^2 = 0.103$ ).<sup>7</sup>

**Table 2. Trimmed models of the effect of democratic personnel policies on teacher burnout and the effect of teacher burnout on teacher support for student-centred instruction**

Construct and Variables	b	b(se)	$\beta$	$t_{\text{crit}}$	p =
<b>Part A Dependent Variable: Burnout</b>					
Democratic Personnel Policies	-0.340	0.022	-0.338	-15.194	0.000
Principal Efficacy					
Co-worker Collegiality and Support	-0.049	-0.020	-0.048	-2.385	0.000
Parental Support and Involvement	-0.091	0.023	-0.089	-3.864	0.000
Student Abilities and Performances					
Student Abilities	-0.180	0.022	-0.179	-8.047	0.000
Safe and Orderly School					
Effective Disciplinary Policies	-0.197	0.025	-0.197	-7.955	0.000
Racial Isolation and Tokenism	-0.030	0.001	-0.048	-2.447	0.015
Teacher Burnout	n/a				
Intercept	0.168	0.097		1.748	n.s.
R = 0.656, $R^2 = 0.430$ , $R^2(\text{adj.}) = 0.428$ , F = 174.05, d.f. = 6, p = 0.000					
<b>Part B Dependent Variable: Student-Centred Instruction</b>					
Democratic Personnel Policies	-0.082	0.026	-0.084	-3.107	0.000
Student Abilities and Performances					
Student Abilities	0.147	0.029	0.151	5.073	0.000
Comparative Rating of Abilities	-0.064	0.027	-0.065	-2.374	0.018
Safe and Orderly School					
School Safety (Fear)	-0.161	0.023	-0.159	-2.374	0.000
Teacher Demographics					
Female Teacher	0.275	0.055	0.113	5.048	0.000
African American Teacher	-0.262	0.052	-0.112	-5.027	0.000
Hispanic Teacher					
Asian American Teacher					
Teacher Burnout	-0.121	0.027	-0.124	-4.393	0.000
Intercept	-0.131	0.050		-2.511	0.000
R = .321, $R^2 = 0.103$ , $R^2(\text{adj.}) = 0.099$ , F = 26.44, d.f. = 7, p = 0.000					

For each standardized increment in teacher burnout there was a small decrease in support for student-centred teaching ( $\beta = -0.124$ ). The perception that one's students were hard working increased support for student-centred instruction ( $\beta = 0.151$ ). However, the higher the teacher ranked her or his students relative to the nation, the less the support for student-centred instruction to a slight degree ( $\beta = -0.065$ ). Women are more likely than men to

<sup>7</sup> Clearly in Table 2 the teacher attitude toward student-centered teaching is less well specified than the explanation of burnout (adj.  $R^2 = 0.096$  and  $0.414$  and respectively). However, given that student-centered teaching is an essential element in our definition of democratic schooling, our primary focus here is to assess the impact of burnout on the attainment of this aspect of a democratic school.

endorse student-centred instruction ( $\beta = 0.113$ ), while African American teachers are less likely to endorse student-centred instruction ( $\beta = -0.112$ ).<sup>8</sup> Teachers who manifest high levels of fear regarding their physical safety at school are less likely to endorse student-centred instruction ( $\beta = -0.159$ ).

Contrary to our expectation, teachers whose own treatment by the principal is perceived to be democratic (democratic personnel policies) are slightly less likely to endorse student-centred instruction ( $\beta = -0.084$ ). The multivariate relationship for this variable is negative even though the bivariate relationship was positive, but not statistically significant ( $r = 0.018$ ). We were surprised at this finding because the items that made up the democratic instructional practice scales did not include activities that would require the teachers to abrogate very substantially their authority. Rather, as noted in Table 1, the items stressed such modestly democratic practices as helping students to become independent learners, engaging and involving students in the learning process, and attempting to discover the talents and interests of students. Thus, in this urban, high-poverty school district, with children who bring few academic resources from home, teachers are not inclined to afford their students democratic treatment even when their principal follows a democratic management style.

## DISCUSSION AND CONCLUSIONS

Democratic education is usually based upon mutual respect and trust and is often seen as liberating both teachers and students. By contrast, teacher burnout is often viewed as the product of more autocratic practices and thus can be conceptualized as the result of the antithesis of the democratic school. In the present study we sought to raise two questions about the relationship between teacher burnout and democratic education.

- What is the effect of democratic personnel policies on teacher burnout?
- What is the effect of teacher burnout on support for democratic teaching practices?

The statistical models we advanced to account for teacher burnout represent those used in some of the current literature on burnout in the public schools. To those models we added the elements of democratic education to determine whether they incremented the explanatory power of the analysis.

Some of our findings were predictable, while others surprised us. The significant role that principals played in teacher burnout was not unexpected. Democratic personnel policies and practices exerted the strongest effect in lowering the burnout scores of the teachers. Collegial support of co-workers, while significant, had a much weaker effect. Prior work by Dworkin, Haney and Telschow (1990) found that the effect of co-workers was near zero under conditions where the principal was unsupportive.

The finding that racial tokenism had a weak negative effect on burnout seemed counterintuitive. An examination of which teachers were tokens helped to account for the results. White teachers were most likely to be tokens when race of student body was considered. However, their higher societal status likely counteracted the effects of being tokens relative to their students. Dworkin, Chafetz and Dworkin (1986) found that tokens with high societal status tended to be more satisfied with their jobs than those who were not

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<sup>8</sup> A preliminary model in which white teachers were not the reference group it was found that white teachers endorsed student-centered instruction ( $\beta = 0.088$ ).

tokens because their relative scarcity allowed them to accrue personally their dominant racial or ethnic group status.

In contrast to the above, the relative weak effects of burnout on democratic instruction was unanticipated. While burned-out teachers were unsupportive of student-centred instruction, as might be expected, teachers who were not burned-out, as well as teachers who perceived their principals to be supportive of democratic management practices, also were unsupportive of student-centred instruction. The relatively low level of variance explained for the endorsement of student-centred instruction (adj.  $R^2 = 0.10$ ) means that the model is poorly specified. Factors other than democratic principal style, belief in the ability of students, school safety, or teacher demographics remain to be identified for the endorsement of this aspect of a democratic school. Therefore the reduction of burnout among teachers, even in an environment that is supportive of democratic personnel policies, will not automatically result in higher support for the democratic treatment of students.

Further considerations need to be taken into account in the interpretation of our findings. The data came from a sample of teachers working in a high-poverty school district in a large Texas metropolitan area. It is important to recognize that Texas schools are under substantial pressure due to the state's high-stakes testing to raise scores of disadvantaged children on the state's compulsory achievement test.<sup>9</sup> While this pressure is universal throughout the state, and in many other states in the United States, it is especially high in school districts where most of the children participate in the federal subsidized lunch program due to family poverty, and where the percentage of minority-group children is high. The pressures due to the confluence of state accountability standards and children with few resources that they can bring from home often serve as stressors on teachers and principals. These stressors can exacerbate burnout and could lead to fears over the potential negative consequences of democratization, or even the willingness to try democratic school processes.

Why have we been able to predict effectively burnout from perceptions related to democratic and supportive management practices, but have not been able to effectively predict support for democratic student-centred instructional practices with these same variables, controlling for teacher burnout? Could it be that under the conditions of high-stakes testing democratic principals and non-burned out teachers remain unwilling to subject themselves to the risk of greater student participation in their learning experiences. An accountability system that places all or most all of the emphasis on a standardized test also places real limits on the potential for the full measure of democratic education. Student-centred instruction in the light of accountability systems requires enormous levels of skill on the part of teachers and no small amount of confidence in the real skills of the students. The ultimate indicator of democratic education is mutual respect and trust. Can democratic education and the current systems of school accountability co-exist? That may well be the focus of future research in the study of democratic education.

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<sup>9</sup> We were not able to determine the extent to which the perceived emphasis on the TAAS test by the principal affected the support for student-centered teaching. This variable was highly skewed in that it contained extreme items with small variances, that is, most teachers perceived the emphasis on TAAS to be very high.

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## Lessons from the Norwegian Folk High School Tradition

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*Founded in the mid-1800s, as, in part, a critique of classical education, the Scandinavian folk high school movement has struggled throughout its existence to offer an alternative to traditional education. However, while the philosophical principles of the folk high school system are a necessary departure from broader educational directives, they are not sufficient in ensuring its survival. Drawing on original interview data collected during a research trip to Norway, we explore the philosophy, structure and meaning of the folkehogskole tradition. We suggest that one of the unintended consequences of the connection between the structure and tensions of contemporary folk high schools, and the meanings that are created by students experiences within it, is that folk high schools tend to facilitate the same socialization processes they reject in principle. We situate this discussion in the scholarly literature related to the transitioning-to-adulthood experience.*

Norway, folkehogskole, adolescents, socialization, work-to-school transition

### INTRODUCTION

“Knowledge forced on one will never remain in the soul for eternity” (Plato).

Plato’s words shape the motto of the Ringerike Folk High School in Honefoss, Norway, one of approximately 80 such schools in the country. As is traditionally the case in Norwegian folk high schools (*folkehogskole*), Ringerike operates without tests, grading, diplomas or transcripts and features a curriculum comprised of the arts, cultural awareness and outdoor pursuits. Enrolment is voluntary and tuition free of charge. The instructional format is simple and consistent: learning activities are both physically engaging and intellectually challenging; students are given ample opportunity to explore their identities as independent, individual learners and as members of learning communities; and instruction emphasizes direct, purposeful interaction with the human and natural environments being studied (Mortensen, 1976).

In Norway, as well as the three other Nordic countries, the words of Nikolai Grundtvig, the Danish priest, poet, philosopher and educational reformer, stand today as they did in 1844, “that a proper education should awaken the individual’s aspirations to live a meaningful and fruitful life...by cultivating a spiritual commitment through the study of man [sic] and his achievements both past and present” (quoted in Allchin, 1997). The folk high school movement founded by

Grundtvig in Denmark, and now over 150 years old, was created to complement the restrictive structure of compulsory education by adding an element of spiritual awakening, and by doing so, help young adults internalise lifelong learning, personal growth and a sense of cultural identity.

Drawing on original interview data collected during a research trip to Norway, we explore the structure and meaning of the *folkehogskole* tradition. This is an important area of inquiry, in part, because little current information on the folk high school concept is available to English-speaking educators (see Davis, 1971; Manniche, 1969; Mortensen, 1976). More importantly, we believe folk high schools in Norway provide a uniquely interesting comparative case study of influences on adolescent education. Folk high schools are designed to facilitate students' transition from compulsory high school – and explicitly *not* designed as preparatory schools for higher education or paid labor. Rather, they are conceptualized as “schools for life,” helping adolescent men and women become responsible adults, whatever their futures may hold. However, folk high schools seem to emphasize (and indeed cultivate) the very qualities and skills discussed in the scholarly literature on the high-school-to-college transition (see Ezezek, 1994; Feenstra, et. al., 2001; Holmbek & Wandrei, 1993; Kegan, 1994), the high-school-to-work transition (see Arum & Sharit, 1995; Ray & Mickelson, 1993; Rosenbaum, 1996), and the adolescent-to-adult transition (see Baxter-Magolda, 1998, 1999, 2000; Hall, Williamson & Coffey, 1998). In short, Norway's folk high schools seem to successfully facilitate the very process they reject as an overt goal.

In the next section we describe the mission of the mid-1800s folk high school movement, followed by a brief description of Norway's current educational system and the location of folk high schools within that system. After discussing our data and methodology, we explore the contemporary *folkehogskole* including the tensions, challenges, and opportunities contained in its base philosophical principles and its dynamic operating structure. We then explore the meanings that are created around the experience of folk high schools. We suggest that one of the unintended consequences of the contemporary folk high school experience is that students are better prepared to meet the rigours associated with further educational advancement and the demands imposed by the labour market. We situate this discussion in the scholarly literature related to the transitioning-to-adulthood experience.

### THE FOLK HIGH SCHOOL TRADITION

As noted above, the folk high school movement began in Denmark in the mid-1800s under the leadership of Nikolai Grundtvig. Reacting against the elitism, authoritarian teaching and rote learning symptomatic of classical education during his time, Grundtvig believed “he could not find the truth in the learned study of a book, but rather in the living community of men and women who are united by faith” (Manniche, 1969 p.89). Grundtvig first called for “schools without books” in 1837 and the first folk high school opened its doors in Denmark in 1844. Grundtvig advocated schools for the “common people,” free and open to all, that emphasized spiritual enlightenment, free-flowing oral dialogue between students and teachers (the “Living Word”), self-fulfilment, fellowship with others, practical knowledge, active democratic participation or citizenship, singing as a mechanism to establish group solidarity, and the native language (“mother tongue”) as the means of enlightenment (Davis, 1971; Manniche, 1969; Mortensen, 1989; Opstein, 1983; Rust, 1989).<sup>1</sup> As Davis explains, the concern of folk high schools “is not so much with the intellectual growth of the student as with his [sic] growth in a wider sphere, one which

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<sup>1</sup> Grundtvig and American educator John Dewey, though not historical contemporaries, shared many of the same visions for a more enlightened and productive education. Both Grundtvig and Dewey believed strongly in the idea of experience in education, that education must be applicable to everyday life, and that education could be a vehicle for social change through its cultivation of an active, informed citizenship (Allchin, 1997; Dewey, 1916; Opstein, 1983).



contains the intellectual but is not defined by it” (1971 p.4). Significantly, Grundtvig believed that such an education was most appropriate for people on the *threshold* of adulthood:

[He] was convinced that until the body and brain have fully developed and until life has revealed itself so completely to the individual that he [sic] can recognize it when it is described and feel a natural desire to be enlightened, the kind of enlightenment he had in mind would fall on barren ground and be largely wasted effort. (Davis, 1971 p.29; see also Manniche, 1969)

Gradually spreading to other Nordic countries, the first folk high school opened in Norway in 1864.<sup>2</sup> Resonating with core Norwegian values – personal independence, respect for the law, respect for education, egalitarianism, a strong work ethic, support for local communities, and a deep belief in the democratic process – folk high schools were part of an explicit nation-building enterprise in the mid to late 1800s and the most visible type of non-formal education in Norway (OECD, 1990 p. 60; Rust, 1989 p.107, 120). The folk high school movement was not without competition, however. In 1877, a series of county youth schools began to open, similar to folk high schools in format but oriented toward the teaching of basic skills with an orthodox Christian perspective. In the late 1940s, Christian youth schools were forced to transform into folk high schools to secure funding support from the government. This history generated a secular vs. religious divide that continues to exist in the folk high school system (see discussion below).

### CONTEMPORARY SCHOOLING IN NORWAY

The current public education system in Norway is comprised of three tiers. The first tier of basic schooling includes primary school (Grades 1 through 6) and lower secondary school (Grades 7 through 9). Basic school has been mandatory in Norway since 1920 with the vast majority of students attending public rather than private schools (Hagen & Tibbitts, 1993 p.21). The second tier, upper secondary education, includes Grades 10 through 12. Attracting approximately 90 per cent of those who have completed basic schooling, upper secondary school is comprised of a variety of programs from one to three years in length and provides general education, vocational training and preparation for higher education. Upper secondary education explicitly aims to ensure equal status to both practical and theoretical studies (Rust, 1989 p.256),<sup>3</sup> with general courses existing side-by-side with practical and vocational courses (approximately 60% of students are located in vocational programs). Vocationally oriented students can elect to remain in the school, continue their education in an employment setting, or some combination of both (OECD, 1990; Rust, 1989).

The third tier consists of higher education institutions. While there are only four universities in Norway, there are more than 200 regional colleges where students can complete a range of two and three year programs. Since many Norwegians choose to gain work experience before entering university, and since males typically complete 12-15 months of military service immediately following upper secondary school, most university students are 25 years or older at

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<sup>2</sup> The late 1800s and early 1900s also witnessed an attempt to create Danish-American folk high schools in the U.S. While initially generating considerable excitement among American educators the concept quickly fell out of favor, though several U.S. schools loosely modeled on the folk high school model have managed to survive (such as the Highlander Center in Tennessee; Davis, 1971). Perhaps the most well-known U.S.-based organization with ties to folk high schools is the Scandinavian Seminar, a non-profit organization founded in 1949 that provides study abroad programs in Scandinavia for American students and short-course programs in over 22 European countries for people of all ages.

<sup>3</sup> This is in marked contrast to high school vocational education in the U. S., which has long been seen as a mechanism for social exclusion and personally stigmatizing for students (see Arum & Sharit, 1995; Krei & Rosenbaum, 2001).

commencement (OECD, 1990 p.88). Unlike in the United States, colleges and universities in Norway are typically non-residential.

The Norwegian government, through the Ministry of Education, funds public schools (ensuring general equality across the school system), sets the national educational agenda, and administers national curricular guidelines. The process of national educational reform, which Norway is currently undergoing, is a lengthy, open and democratic process (Hagen & Tibbitts, 1993; OECD, 1990; Rust, 1990). School reforms in Norway almost always derive from educators themselves (rather than being political initiatives) and are a response to changing social conditions, not an attempt to generate those conditions (see Rust, 1990).<sup>4</sup>

### **Situating folk high schools**

Folk high schools exist outside this broad educational structure by deliberate design. The first Folk High School Act was passed in 1892, and legislated (among other things) the amount of government funding support for each school and student in the folk high school system. Today, each school receives funding to pay teacher salaries and other financial costs. However, folk high schools are not operated by the government but by the 'folk', an amalgam of organizations as diverse as trade unions, Christian organizations, private foundations and consumer cooperatives, but with nearly complete autonomy and at taxpayer expense. Folk high schools are under no governmental mandate with regards to ideology, goals, curriculum or pedagogy.

There are (as of this writing) 82 folk high schools operating in Norway. Enrolment is entirely voluntary and tuition is free, though students must pay for room and board (government grants and loans are available) and the cost of study tours. Each year approximately ten per cent of upper secondary school graduates enrol in folk high schools, spending 33 weeks (August-May) in residence at the school.<sup>5</sup> This is most students' first time living away from home. Approximately 5,800 young men and women were enrolled in folk high schools as of October 2001 (Statistics Norway). A small number of students at each school (i.e. ten or fewer) are international students studying abroad in Norway. The schools are fairly small (averaging 75 students), are predominantly female (due mainly to military service requirements for men), and provide one of the few structured, residential learning experiences – where students and teachers work, live and learn together – available in Norway. Classes are held Mondays through Saturdays, with Saturday evenings reserved for student-initiated social activities.

In keeping with tradition and as mandated by the Folk High School Act of 1984, contemporary folk high schools are prohibited from having entrance requirements, tests, grades or diplomas. This experience does not constitute a so-called 'year off' from structured learning, however; as one teacher put it, a year spent at folk high school is "full time, not free time". The pedagogical emphasis is on self-development through peer interaction, open discussion and dialogue, and hands-on experience. Each school prides itself on its own distinctive personality and featured

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<sup>4</sup> Prior to the current efforts, Norway has experienced four major educational reform cycles in modern history: late 1830s, early 1870s, 1950s and mid-1970s. Norway has consistently relied on the model of social corporatism to guide the policy-making process. In terms of education, "this means that monopolization of tight networks of educational interest groups is an accepted practice. It is taken for granted among political factions and the general public that special councils and professional bodies ought to determine the direction of educational reform" (Rust, 1990:14).

<sup>5</sup> In addition to the annual residential course, folk high schools offer a second strand of learning. Short courses for adults, lasting from three days to sixteen weeks, are offered on weekends, school holidays and/or summer holidays. While the subject matter might differ from that covered in the annual course, the adult strand shares the folk high school emphasis on intra- and inter-personal growth (Baxter-Magolda, 1998). In 2001, approximately 19,000 adults from 50 different nations completed short courses (Statistics Norway).

selection of specialty courses. For example, Hedmarktoppen Folk High School offers drama and dance, sports and outdoor life, music, art and design, Bible and mission, and team action on the road; Varna Folk High School specializes in health and social studies, nutrition and organic agriculture, music, social work, radio journalism, and mission work; and Nordhordland Folk High School offers introduction to child care, introduction to physical therapy, travel and tourism, introduction to computers, motor mechanics, physical education, music and drama, and form, colour and design. Folk high school teachers are selected not only for their competence in specific subject areas but their ability to instil, through example, the love for learning, community responsibility and individual growth at the heart of Grundtvig's vision (Davis, 1971 p.13).<sup>6</sup> Despite sharing the values espoused by Grundtvig, however, the schools are very different from one another and it can be difficult to define a common meaning and purpose to this type of education. Davis' 30-year old articulation remains apt:

A folk high school is not only the school itself and its curriculum but also the students and why they come and what they do when they leave...it not only concerns itself with the "whole" person, but with the "whole" society. One of the aims of the schools is to confirm the students' solidarity with the milieu from which they came, and to enable them when they return to make this same milieu richer and more meaningful. (Davis, 1971 p.8)

After a brief discussion of the goals and methodology of the current project, we turn to an exploration of the opportunities and challenges currently faced by the folk high school system in Norway.

### **PROJECT GOALS**

Our research is contextualized by the fact that, as noted above, little information on the folk high school concept is available to American educators. As such, one of the primary goals of our exploratory research trip was to obtain a view of the Norwegian folk high school system at the turn of the new century. How is a 150-year old educational tradition faring under recent demands for increased assessment and accountability (Hagen & Tibbitts, 1993)? Is Grundtvig's vision useful in an increasingly complex world? Our primary research goal was to clarify folk high schools' position in the high school-to-college and high school-to-work transitions. In many ways, the boom in student services in American institutions of higher education seems to represent a reactive response to adolescent students' general lack of preparedness for the challenges presented to them in the collegiate environment (e.g., Baxter-Magolda, 2000; Kegan, 1994). In contrast, the educational mission of folk high schools offers a more proactive approach to this transition, preparing students intellectually, emotionally and physically for living and learning in an adult world. In addition, the academic literature on the high-school-to-work transition suggests a growing disjuncture between what United States high schools are designed to prepare students for,

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<sup>6</sup> While a full discussion of the roles and experiences of teachers is beyond the scope of this article, we were told repeatedly that teaching in folk high school is much more than a job. The close living and learning relationships with students, non-hierarchical exchange of ideas, and the enthusiasm and dedication necessary for successfully teaching in a school without grades, contributed to teaching being understood as a lifestyle or a calling rather than a job. For those teachers who thrive, the folk school experience is immensely rewarding – as one exclaimed, "It's easy to be happy teaching here!" Teachers report that the biggest challenges of the folk high school context are cultivating and maintaining motivation and enthusiasm (both their own and the students'), reconciling one's personal life with the extraordinary demands of the job, and maintaining awareness of the unique mission of the school system to prevent the educational experience from mimicking regular schools. Folk high school teachers practise a form of holistic teaching, a pedagogical approach "that consciously attempts to (1) promote student learning and growth on levels beyond the cognitive, (b) incorporate diverse methods that engage students in personal exploration and help them connect course material to their own lives, and (c) help students clarify their own values and their sense of responsibility to others and to society" (Grauerholz, 2001 p.44).

and what the employment sector expects from high school graduates.<sup>7</sup> We believe the so-called ‘schools for life’ mandate of the folk high school tradition offers interesting insights into how young adults might experience the high school-to-college, work and life transitions.

### **Data and methods**

During a three-week period in Spring 2001, we conducted site visits (2-3 days each) at six folk high schools in the Southern coastal region of Norway, including three schools affiliated with the Information Office for Folk High Schools (IF) and three affiliated with the Information Office for Christian Folk High Schools (IKF). The schools varied in setting (urban to rural), local ownership patterns (county to private foundation), size (50 students to 90), tenure (the oldest school was founded in 1876, the newest in 1983), popularity (determined by number of applicants), target student body, and financial stability. At each school we attended classes, ate meals, participated in school assemblies and social events, explored school grounds and the local communities, and collected the images and sounds of school life. We conducted formal (tape-recorded) interviews with school teacher-administrators (virtually all school administrators are current or former teachers), full-time teachers and students. In total, we interviewed ten teacher-administrators, nine full-time faculty members and 18 students. We also had numerous informal (non-recorded) interactions with students, staff workers, teachers, administrators and members of the local communities. Finally, we conducted lengthy (recorded) interviews in Oslo with four national folk high school administrators associated with IF and IKF. All interviews were conducted in English.

This manuscript reports primarily on the formal interview data. The open-ended loosely structured interviews lasted from approximately 15 to 180 minutes in length. Interview transcripts were analyzed using a line-by-line content analysis to uncover key issues, themes and patterns across participants’ experiences. Similar to grounded theory methodology (Glaser & Strauss, 1967), our approach was directed toward developing an in-depth understanding of the folk high school settings and its participants’ histories of, experiences with, and perspectives on the future of the schools. Due to human subjects agreements with our universities, neither the schools nor the interview participants are mentioned by name in this manuscript. All quotes included are verbatim, though they have been edited for clarity and minor grammatical errors.

## **DISCUSSION**

### **Current challenges and opportunities**

In the past 20 years there have been a number of changes in the folk high school experience: fewer teachers live on campus full-time, instead rotating shift duties to cover evening and weekend hours; school policies have necessarily evolved to address changing norms in drug and alcohol use, sexual activities and exposure to new technologies (email, cell phones, etc.); much of the school year is now geared toward preparing for international study trips to places such as Zimbabwe, China, Guatemala, Russia, Spain and the United States; some schools now give examinations and grades (though this violates the 1984 government mandate); and some are more clearly oriented toward academic and occupational success (violating the ‘schools for life’ mission).<sup>8</sup> Our site

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<sup>7</sup> This invokes, obviously, the familiar debate about whether public schools should educate for a democratic citizenship or train future workers; see Giroux (1984), Giroux and McLaren (1986), Hadden (2000), Hall, Williamson and Coffey (1998), Mitchell (2001), and Parker (1996).

<sup>8</sup> Nearly thirty years ago, Mortensen (1976) observed an increased emphasis on academics in some schools and a reliance on grading systems in others. Indeed, one of the more vocationally oriented schools we visited offered students the option of both examinations and grades, believing it in their best interests to have tangible documentation of their experience to offer prospective employers.

visits revealed at least four distinct tensions or challenges currently faced by the folk high school system in Norway: (a) the economic viability of individual schools; (b) their relative isolation from one another and from the administrative offices in Oslo; (c) the tension between “Christian” and “non-Christian” (i.e. IKF- and IF-affiliated) schools; and (d) new accountability to the Ministry of Education. Each of these issues is discussed briefly below.

The economic viability of individual folk high schools is challenged by a number of intersecting factors. While all folk high schools receive funding support from the government to cover teacher salaries and additional expenses, as noted earlier, demographic patterns indicate a sharp birth decline in Norway (and throughout Europe), resulting in too few students for too many schools (OECD, 1990 p.15). While the school system as a whole does not appear jeopardized, individual schools are struggling to stay afloat. Competition between schools to attract students is fierce, with more and more resources allocated to marketing and recruitment. Local ownership and sponsorship patterns are perhaps most crucial for how schools fare economically, creating considerable disparity in an otherwise egalitarian-oriented national culture. One of the schools we visited was forced to take a year off in the late 1990s because it was essentially abandoned by its original owner (a labour union who has never come through with funding support) and was unable to attract enough students to justify economically its annual course. At the time of our visit the school was operating with 50 students (and room for at least 20 more) but struggling to pay salaries to its small staff. A teacher-administrator explained:

We have not done so well in '97, '98, '99 and 2000, so [the school] is not something we make money on. My work here is much more than other principals from folk high schools in [this] area, I work with economics and try to get money to pay wages and so on. So I have a very good relationship to the local bank!

Another site school, owned by the local county, received more applications than any other folk high school for 2000-2001 (close to 600) and reported no funding concerns at the time of our visit. To offset the demographic patterns and economic uncertainty, virtually every folk high school engages in external money-making enterprises, such as renting dorm rooms to overnight guests, hosting parties and receptions, running summer camps for mentally and physically challenged children and adults, and offering for-profit short-term education courses during the summer holiday.

A second challenge to the folk high school system continues to be the relative isolation of individual schools, not only from each other but from the administrative offices in Oslo (Mortensen, 1976 p.498). The independence of the schools is in some ways inevitable (due to geographic barriers, especially in the North), is mostly intentional (reflecting the deep respect for local traditions and communities throughout Norway), but seems detrimental to the overall flourishing of the school system. Both teachers and administrators report feeling isolated, with little presence in their local village or town, little interaction with nearby primary and secondary schools, little opportunity to engage in shared activities with other folk high schools, little contact with colleges and universities, and little interaction with the home administrative offices except around issues of marketing and recruitment. Principals hold annual or semi-annual meetings but most staff members have few networking opportunities with colleagues. While faculty and staff were convinced of the soundness of their own school's purpose and goals, the sense of being participants in a larger educational movement seemed generally lacking:

Every citizen in Norway knows of the folk high schools...But they don't know what it is. They know that there are folk high schools but what are they doing? So we have a communication problem. We have to communicate to the public what folk high schools do...We are in this public relations strategy now trying to get the schools to have a common goal (Administrator, NF).

One teacher-administrator reports that most people in the town near her school do not seem to realize the school exists, even though the folk high school is 140 years old and right next door to an upper secondary school. In her words, “The folk high school is like an island.”

A third challenge is the increased emphasis on accountability and assessment throughout the Norwegian educational system since the late 1980s (Hagen & Tibbitts, 1993 p.27). In the past decade this has impacted folk high schools in several ways. Most importantly, the folk high school system cooperated with the Ministry of Education on a late 1990s project to document or assess experiential learning and validate it against formal criteria. Each school was required to compile an extensive descriptive document detailing its basic values, teaching methods, course descriptions, overall philosophy, dormitory life and so on, a process to be repeated every five years. As an administrator at IF explained, “We are using a lot of nice words but the government wants to know what we are actually doing, what [students are] gaining from the experience.” While there was widespread resistance to such documentation, the teachers and administrators we spoke with felt that it was ultimately in the folk high school system’s best interests:

We have been rather reluctant to document ourselves at our type of school...because once you document you put things on a piece of paper and how can you really do that when you talk about people?...Every student is a universe in itself and we approach it with respect...As Grundtvig said, it’s that person that is the goal and aim for everything we do. And it’s not like [students are] an empty barrel that we’re supposed to fill...We tend to ask more about what they come with...than how we can fill [them] up...But we documented it...And that helped us...become aware of certain routines, so I think the schools ultimately benefited...There was a reluctance all over the folk high school[s] to go into it, but money talks! (Teacher-administrator)

One of the outcomes of documentation is that folk high schools are now more formally situated in the national education system than ever before. As of 1997, students receive three academic credits toward higher education through successful completion of a folk high school program.<sup>9</sup> We emphasize that the documentation is not an outcome-based assessment. Explains an administrator with IF:

Grundtvig said that we can say nothing about outcomes. The outcome is growing after the year...Grundtvig pointed out that you are not doing this for an exam or degree but for life...So, how do you measure that?...On the individual scale you cannot do it. And, we don’t want it. But, you can describe it. And those three points are given to you because you have attended an environment for some time. (Administrator, IF)

In many ways gaining the three credits was an important institutional victory for folk high schools in that it formally symbolized their value and legitimacy within the Norwegian education system. However, there are several potentially negative implications of this change. First, there is now an objective criterion for successful completion: attendance. After documentation, students not appearing in class at least 90 per cent of the time over the course of the school year (counted in hours and days) do not receive a certificate of completion and are thus ineligible for the three credits (lack of attendance or a serious infraction of school rules are virtually the only way students can fail folk high school).<sup>10</sup> Second, there is now an extrinsic reward attached to a school

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<sup>9</sup> Young men can receive three credits for folk high school completion or for military service but not both. Completion of folk high school or military duty is considered by the Ministry of Education to certify “realkompetense” or “life competence” (as opposed to formal competence), and is thus deemed worthy of credit toward further schooling. Real competence is currently being conceptualized by the folk high school administration as including “learning in the social arena,” “learning in the personal arena,” and “learning in the subject-matter arena” (personal communication with IKF administrator, May 30, 2002).

<sup>10</sup> Faculty are under new accountability expectations as well. Folk high school teachers are required by contract to work 1,712 hours and 30 minutes per academic year, including time spent preparing for class and teaching, evening

system long predicated on a mode of learning that exists outside the familiar sticks and carrots of formal education. Finally, as noted, the three points links folk high schools to higher education in an unprecedented way, symbolically transforming ‘schools for life’ into stepping-stones to college and university.<sup>11</sup>

Faculty and administrators were concerned that introduction of the three credits would herald changes in the reasons why people apply to folk high schools, the type of student who enrolls, and the educational experience they anticipate. As one teacher put it, “It could sabotage our program.” Each year the Information Office for Folk High Schools (IF) surveys incoming students about their decision to enrol in the school system. In the 2000-2001 school year 20 per cent enrolled so they could explore what they wanted to do later in life; 16 per cent hoped to develop as a person; 15 per cent wanted to do something different from what they have been doing in secondary school; and only three per cent enrolled to gain the three credits.<sup>12</sup> In terms of the type of student who might enrol, the three credits did seem to herald a change, at least in some schools. Staff and faculty at five of the site schools said their applicant pool was less diverse than in the past: students applying tend to be wealthier, more academically successful and more clearly oriented toward higher education and professional careers.

While there is little evidence in our research that the three credits leads students to expect a different kind of experience from that which folk high schools traditionally offer, teachers report struggling harder each year to generate students’ interest and enthusiasm for coursework and activities not graded:

It is always a challenge to make things serious, not like playing at school, not like a kind of entertainment. For some students, they are so fed up with the school and they love to be entertained, and to make it serious, to make it useful for them, for their daily future life, I think that is a challenge. (Teacher)

That’s very exciting for Americans...A school with no grades! That is, of course, a big challenge, especially in motivation. They are so trained from high school that there are grades everywhere. That’s why they learn it – they don’t understand any other reasons for learning, than getting a good grade. And that’s terrible...Our teachers have to teach students to think differently, to forget high school, forget grades, forget everything you have done...Now you have to experience it all from another level. (Teacher-Administrator)

You have to “sell,” in a way, every lesson. It’s not like an ordinary school where you’re told from above that this is something you must do. I think that makes it easier in some ways because the students know, “Ok, I have to do this.” And the teachers know it’s something they have to do, and you try to do it as well as you can. But here, it’s even more difficult. Every lesson has to be sold. (Teacher)

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and weekend residence, and participation in social activities and study trips. Most administrators we spoke with seemed to be making a symbolic “good faith” effort to keep track of employees’ time, but one principal, struggling with a teaching staff resistant to the lifestyle obligations of the job, was compiling (literally) a minute-by-minute log of their whereabouts and activities.

<sup>11</sup> This linkage is visible in other ways as well. For example, folk high school administrators report that applicants are more likely to be enrolled in general studies than vocational studies in upper secondary school. In addition, folk high school students are more likely to have well-educated parents. Over 50% of folk high school students have parents with college or university experience, compared to only 37% of upper secondary students (Statistics Norway).

<sup>12</sup> When asked why they chose a particular school, 56% of students referred to the subjects and coursework offered; 13% said the geographic location of the school appealed to them; 9% said the school’s brochure was attractive; and 8% said the school had been recommended to them by others (administrator, IF).

A final challenge facing the folk high school system is the tension between its two main branches: IKF and IF, or 'Christian' and 'non-Christian' schools.<sup>13</sup> As noted earlier, the folk school movement in the mid-1800s, while based in Christian values and Grundtvig's belief in the path toward spiritual enlightenment, generated a counter-movement of youth schools with strong ties to conservative Christian churches. As the result of legislative changes in the late 1940s the youth schools were transformed into folk high schools. Today there exist two different administrative offices in Oslo that cooperate on marketing, recruitment and publicity (and also coordinate the teachers' union) but ultimately have different philosophies and goals:

We are working very closely with the Christian schools...but we have a diversity in thinking. The owners of the Christian schools would like to see them more geared toward Christian life. And that overlaying vision or philosophy, we don't have...Our schools are more Grundtvig-like. (Administrator, IF)

We like to put it in a positive way, when you come to [a] Christian folk high school you know what you're coming to, it is going to be...a Christian experience. [But we] do not see measurable results in terms of so many saved souls, so many people joining [the] church, so many new pastors coming out of it, that kind of thing...If you go to other schools, you will get another kind of experience...We all agree that there is nothing to be gained by hoping for failure from the other branch. So, we are willing to get along. (Administrator, IKF)

At each of the schools we visited (three IF and three IKF) we asked about differences, if any, between the two types of schools. Responses were mixed:

It's not that I'm negative to the Christians, but they are, in actual meaning of the word, not folk high schools because they became folk high schools...I think we are really close to what Grundtvig meant with the folk high school and I think the more Christian schools have perhaps more problem with accepting differences and [non-Christian] pupils. (Teacher-Administrator, IF school)

I think that [the distinction] is a little bit artificial...The aim of this school is supposed to bring youth to personal acceptance of God. The question is, how do you do that? We don't [teach] religion, we don't teach Bible knowledge, [it's not] "hammer Jesus Christ into your head" or anything like that. (Teacher-Administrator, IKF school)

Some of the Christian folk high schools have been accused, perhaps rightfully so, [of] thinking of the school as...a means to evangelize...whereas many of the NF schools like to think they're not a means to anything, they *are* the fulfillment, the school *is* the fulfillment...My view is very close to the IF view. The school and the development of each student and their freedom to choose what they want their lives to be is basic, very basic to us...Grundtvig said as a folk high school you're not supposed to preach about the light, Jesus being the light...but you are supposed to tell about what you see from the light...I try to have that as a hook. (Teacher-Administrator, IKF school)

Most of those interviewed predict the two strands would merge into one within the next decade, though there were mixed responses to this potential change:

I think we will see these two organizations coming together as one because we're in a school that has to fight for our right to exist as towards the government, and then we would have much more force to talk about or to negotiate better positions for our schools if we stay together, and pedagogically there is very few problems concerning that now. (Teacher, IKF school)

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<sup>13</sup> The term "Christian school" erroneously implies that other schools have no basis in religious or spiritual doctrine, and/or are "anti-Christian"; however, we adopt this terminology since it is widely used within the folk high school system itself. As noted above, enrollment is down throughout the folk high school system and is declining more rapidly in IKF schools, due largely to the growing secularization among Norwegian youth.



We have these two organizations...and some have...said that we can go together...I think we are different, and I don't think [NF] would like to join us either, because it's a bit frightening with [our] Christianity...There's not a problem, but I think we feel best if we are like we are. (Teacher-Administrator, IKF school)

Taken together, these tensions and challenges point to the dynamic nature of the folk high school movement. Founded in the mid-1800s, in part, as a critique of classical education, the folk high school movement has struggled throughout its existence to offer an alternative to mainstream traditions, while at the same time incorporating (however reluctantly) some hegemonic practices. So, although the philosophical principles of the folk high school system are a necessary departure from broader educational directives, they are not sufficient in ensuring its survival. Folk high schools do not endure simply because they offer an alternative to government-sponsored education. Rather, folk high schools have evolved in ways that ensure their connectedness to ever changing social contexts without completely undermining their original purposes. The result is that the folk high school experience is meaningful, not because it is separate from contemporary social life, but rather because it informs it and prepares students to engage in it. In the next section we explore the connection between the structure of the folk high schools and the meanings that are created by students' experiences with it. We suggest that one of the unintended consequences of this articulation between structure and meaning is that folk high schools tend to facilitate the socialization processes they reject in principle.

### **Transitioning**

At the heart of the supposed education crisis of the 1980s and 1990s in the United States was the belief that high schools fail to prepare adequately students for the world of paid labour (see Giroux, 1984; Ray & Mickelson, 1993). In particular, school reformists argued that graduates entering the labour force lack basic skills, motivation and discipline, and hold inappropriate or unproductive attitudes toward work. Similar arguments have taken place in Norway. Researchers conducting a comprehensive review of the Norwegian education system in the late 1980s commented, "we were told more than once that the educational sector is somewhat divorced from the activities of firms and the needs of the labour market...[Employers] did not feel they had sufficient influence over teachers and local authorities". (OECD, 1990 p.15)

Sociological research identifies a number of different factors shaping the education-occupation association, including broad social norms and expectations about work, the quality of educational systems that prepare students for work, the vocationally oriented choices available for students and the involvement of guidance counsellors. The single most important (and typically overlooked) factor is the nature of the labour force itself (Kerckhoff, 2001; Krei & Rosenbaum, 2001; Ray & Mickelson, 1993, Rosenbaum, 1996). As this research clearly indicates, students' attitudes and motivation toward employment might best be explained by factors typically overlooked by the corporate sector and those calling for school reform: the types of jobs available to students with a high school degree. Ray and Mickelson (1993) argue that United States high school students' motivation for work is low because the entry-level jobs available to them are patently unappealing (low pay, status and power, little chance for advancement, etc.). In their detailed analysis of a school reform task force process, the authors conclude, "Not one [task force] member linked the...lack of motivation and discipline among non-college-bound youths with the kinds of jobs that companies have eliminated and created over the past several years" (Ray & Mickelson, 1993 p.7). In addition, research confirms that employers are more interested in (and "dismayed" by) behavioural and attitudinal traits of young job applicants than by student achievement, giving high school students little incentive to strive for academic success (Rosenbaum, 1996; Ray & Mickelson, 1993).

Literature on the high-school-to-college transition documents similar limitations in the various competencies (cognitive, psychological, attitudinal, moral etc.) of students on the threshold of adulthood. While some students obviously have no difficulties adjusting to college life, others struggle to succeed academically and find a home in their new environment and still others fail to adapt and drop out. As Baxter-Magolda notes, “Campuses across the United States are plagued with alcohol and drug abuse, lack of civility among students (for example, date rape, hazing, discrimination), eating disorders, and mental health concerns” (2000 p.141; see also Ezezek, 1994; Feenstra et. al., 2001; Holmbek & Wandrei, 1993; Kegan, 1994).

In her extensive work on the adolescent-to-adult transition in contemporary America, Baxter-Magolda (1998, 1999, 2000) argues that constructing an adult identity is becoming increasingly confusing and complicated, but the need for complex adult identities is growing (1999 p.630; see also Hall, Williamson & Coffey, 1998). Through a longitudinal study of how students come to understand themselves in relation to knowledge, Baxter-Magolda finds that adult life increasingly requires the capacity for “self-authorship” – or “the ability to collect, interpret and analyse information and reflect on one’s own beliefs in order to form judgments” (1998 p.143). Self-authorship involves cognitive, inter-personal and intra-personal dimensions of development and entails trusting oneself, the confidence to direct one’s own life, making one’s own meaning out of life experiences (i.e. developing an internal voice and personal authority), and maintaining one’s own identity (1998 p.147).

Baxter-Magolda argues that higher education has a responsibility to assist young adults in making the transition from adolescence to adulthood, “from being shaped by society to shaping society in their role as society’s future” (1999 p.630).

Because one of the major goals of higher education is to prepare citizens for effective participation and leadership in contemporary society, higher education should contribute to the development of self-authorship...Educators must find ways for students to practice the kind of learning and thinking that our society demands of us as adults. (Baxter-Magolda, 1998 p.144, 155)

While college mission statements routinely address key elements of self-authorship, aiming to empower graduates to be self-initiating, balance individual and community needs and be civic-minded, mature and responsible adults, campus efforts to promote these capacities are rare (Baxter-Magolda, 2000 p.155). As a result, most United States college graduates have not yet acquired internal identities and self-authorship, although most of the occupational and social settings they enter after graduation expect them to function as if they have (Baxter-Magolda, 1999 p.641; see also Lowman, 1990).

### **Lessons in self-authorship from the folk high school experience**

Interview data provides suggestive evidence that Norwegian folk high schools are cultivating the adult skills called for in the high-school-to-college and school-to-work transitions, and at an age prior to any collegiate or adult work experience its graduates might have. By constructing an environment in which learning is voluntary, intrinsically rewarding and geared toward real-life knowledges and skills, folk high schools tap into the peripheral parts of adult education that are difficult to quantify and not purposively oriented toward larger academic or economic goals (Mortensen, 1976 p.499). In the words of teachers and administrators:

It is a very complicated issue. Primarily, we do not want to...say that we are functional schools, and that we promote [job] skills...The idea is growth. The skill is the vehicle. We

teach using subjects as a vehicle. That begs the question, what do we teach? Basically, human skills...we try to help people grow. (Administrator, IKF)<sup>14</sup>

They have been in the school system for twelve years, with exams. They haven't had the freedom to choose what they wished to do. They are tired, and they're not sure what...they want to be. "What are my abilities, what do I want?" We are then offering a time, and they're coming to us *voluntarily*, I think that is important, to investigate themselves. (Administrator, IF office)

Basically we would like to think [we are helping to create] better people, everything that human life incorporates...That sounds rather philosophical, doesn't it? But you realize it's rather a practical way of doing it. We always ask ourselves this question, Is this good for them as people?...Will it improve their lives as a whole, bring some kind of meaning to their whole lives? (Teacher-Administrator)

The folk high school students we spoke with offer a surprisingly unified message about what they have learned over the course of the year:

You have people around you 24 hours a day, you share a room with someone, and you have a lot of people around you everywhere, always, wherever you go. And that can be hard but that is also a very good thing, because then you...really learn a lot about yourself and how you respond to different things...It's not always easy...Some [things] are bad and some are good, and I think that's a great lesson for life. (Female Student)

[At folk high school you have] the opportunity to do things your way...It's difficult to live so close to people [but] you evolve as a person socially...Respect, tolerance, patience, and I think that's the best thing about folk high schools, that you evolve as a person and it's easier to deal with problems you face later in life...Sometimes it's very difficult to get through it, but you do. And when you get through it then you have learned a lot. (Male Student)

[My] parents, they always want me to take higher education, but they always told me to take a break to go to folk high school because then you can really make sure this is what you want...[Here I can] discover Norway and discover myself...I've learned to handle problems...in my own way, without help from my family. It has been tough because you live so close to many people that you don't normally mix with... If I went straight to college I [would] be reading, and reading and reading...I want to read, and read and read, but I also want to live...I think this year has made me ready to go on. (Female Student)

While students were not without criticism of their experiences (for example, rules, food, curfew) they repeatedly emphasized the positive value of the year. They appreciate the time and supportive environment in which to reflect on their futures, the close relationships with teachers and fellow students, and the ability to explore their intrinsic interests without connection to extrinsic rewards. They believe the experience has given them better communication, conflict management and decision-making skills, enhanced respect for others, greater tolerance for diversity, and more confidence about who they are as individuals and what their futures might hold.

This newly developed intra and interpersonal maturity and self-authorship (to use Baxter-Magolda's terms) helps prepare folk high school graduates for higher education and the labour

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<sup>14</sup> The relationship of subject courses to the folk high school mission has led to an interesting debate. Historically, students did not enroll in folk high schools to learn about particular subject matter (i.e. students did not apply to specific subject programs). As earlier quotes imply, simply being at the school *was* the experience, *was* the education. Formalized subjects were introduced in the 1980s during severe economic depression in Norway as a new way of marketing the schools to potential applicants. Of ongoing debate is the question of *which* subjects can adequately serve as the vehicle for the enhancement of inter- and intra-personal maturity. As one teacher queried, Can golf? Can surfing? Of particular concern at present are the extremely popular sport, leisure and outdoor life courses featured in many folk high schools.

force, even though (as noted earlier) this is adamantly not the schools' purpose. We were told with pride that an administrator at a university in England favours graduates of Norwegian folk high schools "because they're much better students, because they know what they're going to do when they start a course, and they finish it...Students from folk high schools...are more mature and they know what they're going to do" (Teacher-Administrator). Similarly, an administrator at IF told of a corporate director in Oslo who, with extensive experience interviewing young adults, said she "could very easily see that those who had folk high school in their background were those who came to work on time and stayed and had a better attitude, more happy, and more productive." While the evidence is merely anecdotal (none of the schools we visited keep detailed records of students' trajectory after completing the year), administrators, teachers and students believe in the tangible usefulness of a folk high school experience:

Our main goal is to enlighten people and to help them live meaningful, self-independent life in happiness, or to have an appetite for life. To recognize the mystery of life and participate in it...But of course, that will in the next step mean that the effect will be that you are also doing a job or study more carefully because you see the meaning associated with it. (Administrator, IF)

We think that if we give them an awareness of each other and how...the environment between students [is] and an awareness of their own role in that, where they can be active, contributing, sharing their views even though it disagrees with the others...If we manage that here it will spread to wherever they go...We're not training carpenters, we're training better carpenters. (Teacher-Administrator)

An American high school graduate who was attending folk high school before heading to college in the United States explains:

At college I'm going to have to start the freshman classes...and that's going to be a challenge because I didn't do that good in high school...I guess college is...my time to learn, so I have to prepare myself for it. [In folk high school] I've learned to be more concentrated on doing things. [I've learned that] if you want to do something easy and just throw something together, that's not hard. But if you want to get something really good done...it's going to be a challenge.

Evidence also suggests that the meaning of folk high school experience becomes more apparent over time, with alumni reporting two, five or ten years after completion that they finally appreciate what the folk schools taught them. Explained one teacher-administrator, "If we talk to them later on [they say] 'now we understand what we learned'...Sometimes we think they should have learned it while they were here but it's not like that!"

### **CONCLUSION: FOLK HIGH SCHOOLS AS "SCHOOL RECOVERY"**

The transition to adulthood is a process, not an event, with the journey increasingly confusing and complicated (Baxter-Magolda, 1999; Kerckhoff, 2001). Perhaps the single most valuable lesson from the folk high school experience is the importance of sustained personal reflection about one's identity, future life trajectory and relations with others that takes place in a supportive learning community. In many ways, Grundtvig's original mission seems more timely than ever. A clear theme in the interviews with both teachers and students is the necessity of what might be termed 'school recovery': intellectual and emotional recovery from the gruelling academic routine of exams, grades and extrinsically defined educational goals. Folk high schools offer time off (at government expense no less) from the so-called 'rat race' of compulsory schooling, to help develop the intellectual, emotional and relational capacities that will serve one best in adult life. The individual maturity and eagerness to learn that are necessary to thrive in higher education, as well as the attitudinal and behavioural expectations demanded by the corporate sector of young

employees, are the very qualities cultivated in Norway's folk high schools – despite Grundtvig's insistence that they be schools for life and nothing else.

Attaining adult status varies cross-culturally, and the experiences of young Norwegians in the folk high school system is not always transferable to other cultures with different educational systems. There are, however, clear implications of the folk high school experience for the United States context. Research confirms that high school guidance counsellors and vocational teachers in the United States find it difficult to advise work-bound students (e.g. Krei & Rosenbaum, 2001). The increasing trend toward credentialism means that virtually all students receive the same advice (enroll in college), leaving work-bound students marginalized in the high school counselling and advising process, uncertain of their future path, and often lacking key skills such as motivation, self-discipline and the ability to work collaboratively. College-bound students have a difficult transition as well, attempting to thrive in a more demanding academic environment, make new interpersonal connections, forge a desirable career trajectory (for some), and develop an adult identity. In many ways, the growth of student affairs and the rising economic cost of student mental health services in the United States represents a reactive approach to students' lack of preparation for higher education and beyond. Folk high schools, in contrast, represent a proactive approach, allowing young adults the time and support to question "Who am I? What do I want out of my life? What is right for me?" It is apparent that a legitimate, institutionalised form of "school recovery" was important to the participants in our study. Perhaps we should now consider what lessons from the folk high school movement might be instructive beyond the Scandinavian context.

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## Bolsa Escola: Redefining Poverty and Development in Brazil

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*The Bolsa Escola program in Brazil presents a clear break from the economic growth models and supply-side based strategies of the past. Founded on the assumption that the supplemental income generated by child labour outweighs the potential benefits of primary education, Bolsa Escola attempts to address the demand-side component of high dropout rates by providing conditional income-subsidies to families with school-aged children. Following a brief survey of the major discussions on child labour as related to educational attainment, this paper follows the Bolsa Escola program from its conceptual foundations to the initial results as related to school enrolment, child labour and income. Finally, the conclusion explores the potential economic and political obstacles to a sustainable program as well as issues to consider for future improvement of the program.*

Latin America, income subsidy, child labour, enrolment, dropout rate

### **INTRODUCTION: OPTIMISM AND CONTRADICTION IN BRAZIL**

Over the past 20 years, the struggle to maintain and improve upon a stable democracy in Brazil has created the space for a wide variety of development initiatives including indigenous land rights, fair terms of trade and ecological preservation. While the optimism generated by the progress of many of these initiatives is merited, a closer look at Brazil's development indicators reveals several contradictions. Although Brazil boasted the world's eighth largest economy according to GDP in 1999 it also has one of the most unequal income distributions in the world. Moreover, the overall incidence of poverty in Brazil between 1984 and 1999 was over 22 per cent, with the highest concentration in the northeast (UNDP, 2001).

As development experts continue to explore various strategies for bridging the income gap, there is a growing consensus that educational attainment is one of the strongest correlates for poverty levels among Lesser Developed Countries (LDCs) (Psacharopoulos and Nguyen, 1997; World Bank, 2001). Unfortunately, the contradictions evident in Brazil's general development indicators are reflected in the area of education as well. While Brazil spends 11.1 per cent of its GNP on primary education and 19 per cent of its GDP on social services – a respectable amount comparable to many European countries – the average level of schooling for the adult population in 1990 was four years. This is an amount equivalent to El Salvador, Guatemala and Nicaragua, all of which have less than half the per capita income level of Brazil (Economist, 1997).

Brazil's poor indicators at the primary schooling level can be partially explained by education's historical context within government policy. Beginning in the 1970s, the vision of a state rivalling those of the developed world led the military regimes in power to invest overwhelmingly in higher education. Thus, while the children of middle and upper-class

Brazilians were able to attend some of Latin America's finest universities free of charge, primary and secondary public schools were left to deteriorate. Furthermore, despite the relatively high spending on education, the quality of education has remained low due to poor spending and management. In reference to this dilemma, Paulo Renato de Souza, the Minister of Education in 1997 stated, "We didn't know how many pupils we had, or where. Enrolment lists were years out of date...No one knew who was responsible for what" (Economist, 1997).

Over the past six years, however, the Brazilian government has initiated several progressive education reforms in an attempt to improve public education at the primary level. Representing a marked shift in development paradigm, Bolsa Escola is a national program that attempts to address the demand-side component of high dropout rates by providing income subsidies to families with school-age children on the condition that each child attends school regularly. This strategy is especially significant given that while enrolment rates are as high as 96 per cent, 63 per cent of children drop out before finishing primary school (World Bank, 2001, p.2). Thus, by recognizing the limits of strategies based on supply-side determinants, the program is founded on the assumption that a family's dependence on the supplemental income generated by child labour outweighs the future potential benefits of a primary education.

The first section of this paper explores the major discussions on child labour as related to educational attainment in the developing world, as well as the various strategies employed over time to address the issue. The next section describes the conceptual foundations of the Bolsa Escola program and its practical evolution. The third section reviews the various quantitative and qualitative studies detailing the initial results of Bolsa Escola as related to school enrolment, child labour and income. The fourth section discusses the potential economic and political obstacles to a sustainable program and the tools available for averting these obstacles. Finally, the conclusion will review the major themes discussed in the paper as well as further issues to consider for future improvement of the program.

#### **TOPIC BACKGROUND: EDUCATION AS RELATED TO CHILD LABOUR AND THE CONDITIONAL INCOME-SUBSIDY**

It is generally agreed upon that increased levels of educational attainment lead to an increase in future earnings and standard of living (Psacharopoulos and Nguyen, 1997). Thus, it should be of great concern that levels of school enrolment are lowest among the poor (Ravallion and Wodon, 2000). With the poorest 20 per cent of the population in Latin America having attended an average of four years in school compared to 10 years among the wealthiest 20 per cent, there is a rigorous debate over how best to reduce high dropout rates in LDCs (IADB, 2001).

There are two main strategies traditionally promoted by international organizations and governments concerned with the issue. First, it is strongly believed that legislation prescribing universal education and mandating school attendance is a prerequisite to reducing dropout rates (DOL, 1998). Unfortunately, many LDCs face extreme levels of poverty, exacerbated by highly unequal income distributions, and do not have the institutional capacity or perceived legitimacy to enforce mandatory attendance (Linz and Stepan, 1996). Second, it is widely argued that improved access to quality primary education is an essential element for increased school attendance. A lack of school facilities to serve geographically isolated populations, combined with service fees, greatly reduces the possibilities for attendance. Several studies have also concluded that a student attending a lower quality school is more likely to drop out and complete fewer grades (Poverty Lines, 1996). LDCs, however, face many immediate issues such as civil unrest, HIV/AIDS and



deteriorating infrastructure, restricting their ability to invest consistently in education-based projects, the benefits of which may not be realized for years. Furthermore, in many cases where improvements in access and quality were made possible, school enrolment among the poor remained low (Psacharopoulos, 1996).

As these supply-side oriented solutions resulted in inferior outcomes than anticipated, researchers and practitioners began to examine possible demand-side explanations for high dropout rates and low attendance. Becker (1965) and Rosenzweig and Evenson (1977) are among the first widely recognized authors to explore the relationship between low attendance and child labour (Psacharopoulos, 1996). These authors argued that while parents realize sending their children to school provides increased opportunities for a better standard of living in the future, they are also faced with the immediate impacts of extreme poverty such as a lack of food, clothing and medicine. Thus, children are commonly used as labourers in the informal market to supplement family income (Araújo and Nascimento, 2001).

Along with the aforementioned works, among others, international organizations such as the World Bank, the International Labour Organization (ILO) and the United Nations Children's Fund (UNICEF) have helped to bring the issue of high dropout rates as related to child labour to the forefront of discussion. Moreover, although the deleterious effects of low school enrolment may not become evident immediately, the repercussions of child labour are profoundly shocking. Injury, violence, crime and prostitution are only some of the risks of working in the informal sector, and bring with them a strong call for attention.<sup>1</sup>

With this increased attention, case studies on the subject supporting the relationship between low enrolment and child labour have become increasingly available. As the literature evolved, a consensus emerged arguing that in order to increase school enrolment and attendance, the option of school must be made more attractive to parents (e.g., Grootaert and Kanbur 1995; Todorov, 1989; World Bank 1995 and 1999). A recent study in sub-Saharan Africa clearly states that regardless of access to school and laws requiring attendance, it is ultimately the head of household's decision whether a child will be allowed to leave the family.

The family is the gatekeeper in deciding which children will be allowed out of the home... They will not invest in sending a child to school if there are no clear expectations of economic returns for the family as a whole. (Lloyd, 1996)

Another study used the Second Welfare Monitoring Survey of 59,193 individuals in Kenya to determine the effects of income on primary school enrolment. The study was able to,

...firmly reject the hypothesis that the parameters of the primary enrolment equation do not depend upon log of per capita household expenditure at the one per cent level of significance. (Deolalikar, 1996)

Statistics on Brazil also show a correlation between income and child labour. While the overall incidence of child labour in Brazil is nine per cent, the incidence for the bottom 20 per cent of the income distribution is almost four times greater than that at the top 20 per cent (World Bank, 2001).

Due to the aforementioned contributions, among others, the effects of child labour on school attendance, such as fatigue and illness from long hours, injuries and work schedules that conflict with school hours are able to more clearly explain low levels of attendance (DOL,

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<sup>1</sup> Keck, M. and Sikkink K. (1998) explore in detail the use of "symbolic politics" as a method to stimulate awareness of a specific issue or cause.

1998). Moreover, while government investment in accessible, affordable, quality schools continues to be viewed as necessary, it is no longer seen as sufficient for increasing attendance. The appropriate strategy for addressing the issue, however, remains a strong point of contention.

In the past, LDCs have implemented untargeted subsidies to poor families in an effort to alleviate the struggle for basic goods. Well-documented examples of such programs, generally focusing on in-kind transfers in the form of food rations and health care, are being implemented in Mexico, Egypt and South Africa among other countries (DOL, 1998).

There are several arguments, however, refuting these strategies. First, food subsidies distort the agricultural market to the detriment of farmers who experience lowered prices. Given that in many cases these programs are directed toward the rural poor, food-based in-kind subsidies may have unintended future consequences for the very families in need of assistance. Second, many in-kind subsidies are administered independently of the government and do not develop already existing institutions. Thus, these programs may further weaken already low levels of institutional legitimacy in LDCs. Finally, many authors argue that in-kind transfers create a binding economic constraint on the beneficiaries who ultimately know what they need better than program administrators (Ravallion and Wodon, 2000).

In response to the shortcomings of in-kind subsidy programs, LDCs have gradually undergone a shift to “targeted conditional cash transfers” as a method to increase school enrolment (Feranti et. al., 2000). These programs provide cash-subsidies to poor families on the condition that specific education or health requirements are met while eligibility is based on a “means-tested” and “scoring” system. Means-tested programs set the parameters for beneficiaries by establishing a mean income level while a scoring system is based on housing status, presence of durable goods and number of parents among other variables.

While they are few, several authors have attempted to minimize the connection between supplemental income attained through child labour and school attendance. For instance, a study focusing on school enrolment and child labour in rural Bangladesh concluded that while the subsidy slightly reduced the incidence of child labour, the reduction did not correspond to the increase in child enrolment. The reduction in the incidence of child labour by boys (girls) represents about one quarter (eighth) of the increase in their school enrolment rate. This conclusion suggests that given the income subsidy, parents have chosen to substitute their children’s time with activities other than child labour or school. In support of this claim, the 1995-6 Household Expenditure Survey by the Bangladesh Bureau of Statistics reveals that “child labour” ranked fourth among rural families as the “main reason for the longest absence from school of school-age children.”<sup>2</sup> The authors do concede, however, that these statistics may not accurately reflect the true decision-making process of parents due to the strong and prevalent stigma associated with child labour. Miguel Székely (2001) also places doubt on the efficacy of conditional target income-subsidies, arguing that while programs such as Bolsa Escola may have positive effects on educational attainment and income in the short to medium-run, they do not change the “elements in the underlying economic structure” that create poverty.

The overwhelming majority of recent research, however, indicates that targeted conditional income-subsidy programs have had a strong positive effect on educational attainment and

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<sup>2</sup> The reasons ranking above “child labor” for Rural, Non-poor and poor were “Other,” “Sickness” and “Bad Weather,” while “Unscheduled Vacation” ranked above “child labor” for urban population.

child labour. Besides Bolsa Escola, which will be examined next, some of the other more widely discussed programs are the “Progresas” in Mexico, the “Programa de Asignación Familiar” (PRAF) in Honduras, the “Red de Protección Social” in Nicaragua and the “Beca Escolar” in Ecuador (World Bank, 2001). It is not within the scope of this paper, however, to provide an exhaustive study of targeted conditional income-subsidy programs.

### **PROGRAM DESCRIPTION: FROM LOCAL TO NATIONAL BOLSA ESCOLA**

The conceptual foundations of the Bolsa Escola were initiated during the early 1980s at the University of Brasilia under the coordination of then Professor Cristovam Buarque. Debate over the practical implementation of the program continued until 1991 when “A Revolução nas Prioridades,” the first document describing the philosophy of the program, was published. Presenting a clear departure from the modernization-based development strategies of the past, the authors argued that poverty would have to be disassociated from traditional schemes for economic growth and realigned with the improvement of access to essential social services. Thus, poverty would cease to be viewed as the opposite of rich, or a condition on one side of a linear path toward higher salaries through overall economic growth. Improved access to these services such as nutrition, education, health, public transport and potable water would best be met through a series of incentives appropriate for mobilizing the poorest citizens. Moreover, the authors believed that a mobilized citizenry would, in turn, stimulate a higher demand for basic goods that would eventually cycle through the economy (Araújo and Nascimento, 2001; Cidade Criança, 2002).

After six years as a regional program under Governor Buarque in the Federal District of Brasilia, Bolsa Escola was passed by the National Congress and sanctioned by President Fernando Enrique Cardoso. Several noteworthy changes occurred when the program was made nation-wide. First, the eligibility requirements for families were widened to include children between the ages of six and 15, thereby concurring with federal law prohibiting children under the age of 16 from working (Brazilian Embassy, 2002; PNBE, 2002). Additionally, the program was extended to provide a subsidy of R\$15 per month for each child with a maximum benefit of R\$45, as opposed to the previous flat rate per family regardless of size. Second, municipalities belonging to micro-regions with a Human Development Index less than or equal to 0.500 were eligible for participation. Among requirements held over from the initial Bolsa Escola program, eligible families must have an income less than or equal to half a minimum wage per month per capita and parents are required to hold a job or be actively seeking employment and registered with the National Employment System (SINE). Finally, all children must be enrolled in school with no more than two absences per month and those forced to repeat a year are given extra support during school break to improve their chances for remaining in the program.

Although the program was made national, several measures were taken to distribute administrative, financial and regulatory responsibilities vertically as well as horizontally. Moreover, many spaces were created to encourage and expand civic participation, thereby ensuring a higher level of government accountability. By changing, rather than lessening, the role of the central government this new dynamic creates a three-way relationship between the local and state governments and civil society, allowing each party to regulate as well as reinforce one another’s role (Tendler, 1998).

Before the expansion of Bolsa Escola, a 1996 constitutional amendment delegated chief jurisdiction over primary education to the states and municipalities, thereby shifting the federal government’s role from one of financial administration to one of technical support, regulation and mobilization. Moreover, the decentralized nature of the program creates more space for participation at the local level. Thus, while the federal government assumed

responsibility for providing 100 per cent of the resources destined for families, the payments are made directly to the mother of the family in the form of a banking card distributed by the Ministry of Education. The maternally-based administration of the funds within families is an important feature given the sufficient evidence that women are more likely to spend a larger portion of their income on the family than men (Stromquist, 1999). Furthermore, an executive board in charge of operations was created within the Department of Education allowing for a broad range of represented interests including the Department of Child Welfare and Social Assistance, the Governor's Office, and the Council on the Rights of Children and Youth (Cidade Criança, 2002).

Several key steps in the application process also help reinforce civic participation and government responsibility. First, the municipal government is required to approve a law officially establishing the "Bolsa Escola" in correspondence to the national outline, thus legally ensuring the municipal government's full and long-term commitment to the program. Second, a Council for Social Control must be established to evaluate the program, monitor for fiscal integrity and execution, mediate between the government and the heads of household and facilitate community participation. Moreover, to prevent the misuse of funds for political ends, no more than 50 per cent of the council's members can be affiliated with the municipal government. Finally, families and schools are required to complete and sign the "Terms of Agreement" to ensure legal responsibility for the information provided and to maintain an inclusive and permanent role in the program.

By using clearly defined geographic as well as socio-economic parameters, the target population is kept specific and neutral, allowing for little interpretation based on political motivations. Moreover, the high level of civic presence and participation, including the Council for Social Control, the executive board and school-based organizations creates an environment of financial and administrative transparency discouraging electoral misuse.

Currently, Bolsa Escola supports eight million children through the distribution of R\$127.2 million to 5,512 municipalities per month, or 99 per cent of the total in the country. The overall cost of the program is equal to each Brazilian paying R\$12 per year (PSDB, 2002).

The Brazilian government has also increasingly addressed possible supply-side variables in educational attainment. The passage of a 1998 constitutional law, requiring a minimum expenditure of 15 per cent of federal, and 25 per cent of state and municipal funding on primary education, guarantees the commitment of at least \$280 a year for each Brazilian student. This is a considerable increase from the past average of \$50 spent per pupil per year in the northeast (Economist, 1997). An abundance of projects and programs have been founded in support of Bolsa Escola. The "Livro Didático" project, established in 1997, invests roughly \$142.5 million a year for the purchase of books to be distributed in primary schools throughout Brazil. TVEscola provides training for primary school teachers in remote areas and has provided satellite dishes, television sets and tapes to about 50,000 schools. The Fund for the Development of Primary Education and Teacher Improvement (FUNDEF) was more recently created to increase the extremely low wages paid to teachers by an average of 13 per cent, including an increase of over 50 per cent in poorer areas (Brazilian Government, 2001). By balancing the disparate distribution of teacher incomes across the country, this program helps to retain more qualified teachers in poorer areas. Finally, the Programa de Erradicação de Trabalho Infantil (PETI) and Fundo de Garantia da Renda Mínima (FGRM) were created in 1999 to provide a greater focus on child labour. PETI provides income-subsidies to poor families with children involved in hazardous labour and for after-school activities to keep children away from work (World Bank, 2001).

## RESULTS: BOLSA ESCOLA IN THE FIELD

The Bolsa Escola program at the national level has only been in existence for little over a year. Thus, while there is relatively little recent research on the outcomes of Bolsa Escola at the national level, there were several studies conducted during the initial expansion period from 1995 to 1999. The available data on school enrolment and income as related to child labour from this period are overwhelmingly positive.

In terms of school enrolment, a 1997 joint evaluation by UNICEF and the Institute for Applied Economic Research demonstrates that the dropout rate had been reduced from 10 to 0.4 per cent while enrolment in higher education had increased (World Bank, 1997). Concurrently there was a decrease in the employment rates of children aged 10 to 14 by 31.2 per cent, reflected by a 36 per cent decrease in the number of street children in Brasilia (Pólis, 2002)

Additionally, there was a significant increase in income among the poorest 10 per cent of the population and by 1998 the supplement of one minimum wage had allowed for the retrieval of some 10,000 families from acute poverty, lifting the per capita income to R\$279 (\$168) (Araújo and Nascimento, 2001; World Bank, 2001)

While the initial quantitative data suggest a positive improvement, a study conducted by Missão Criança, an NGO created by Buarque to monitor Bolsa Escola and garner international financial support, highlights some of the effects of the program not measurable in numbers. The consensus among the 56 families interviewed indicates that the new resources were directed toward the purchase of basic necessities such as food and medicine, vastly improving health conditions. A significant number of families expressed that they were also able to purchase previously unattainable “luxury items” such as school uniforms and materials for home improvement. Another positive effect of Bolsa Escola stems from the dependability of the monthly income-subsidy, as opposed to the uncertain receipts associated with the informal work sector. The consistent supplement gave families access to previously unattainable sources of credit and stimulated the practice of financial planning. These findings demonstrate Bolsa Escola’s potential for addressing the lack of increased investment opportunities and stimulating local economies discussed above. Finally, while the program subsidies tended to be lower than the supplemental income from child labour, families indicated that the reduction in violent incidents and health problems associated with the informal sector outweighed the loss in income (Araújo and Nascimento, 2001).

The major shortcoming of the program expressed in the survey was a lack of specific information available to the families. Some families were uncertain of the sources of the funding while others were unsure of the criteria for participating in the program. Several families believed that they had been picked at random and that benefits could be terminated at any point (Araújo and Nascimento, 2001).

Finally, the apparent success of Bolsa Escola in Brazil is exemplified by the increased interest in the program abroad and the increased support from external financial sources. Since its implementation at the national level, the United Nations Conference on Trade and Development (UNCTAD) has presented an initiative to implement a coordinated program between Brazil and Mozambique and Sao Tomé and Príncipe consisting in the transfer of capacity building and methodology related to the Bolsa Escola (Capdevila, 2001). Furthermore, the plan included the possibility for debt forgiveness on the part of the latter countries’ creditors in order to liberate valuable resources necessary for implementing the programs (Capdevila, 2001). Another indicator of Bolsa Escola’s recognition as a viable program is the recent increased financial support from international NGO’s such as Build a School and international organizations (Build a School, 2001). In December 2001 the Inter-

American Development Bank approved a \$500 million loan to be distributed over two years for the implementation of federal income-based transfer program for poor families (IADB, 2001).

These most recent events further support Cristovam Buarque's vision of an international Bolsa Escola supported by bilateral and multilateral funding agencies. Buarque estimates the cost of such a program at \$240 million while benefiting one million disadvantaged children each year (World Bank, 1997).

### **DISCUSSION: THE CONTINUED EVOLUTION OF BOLSA ESCOLA**

Given the findings of initial studies of Bolsa Escola and similar programs mentioned above, there is no doubt that targeted conditional income-subsidies will remain an important tool for governments and NGOs. Moreover, increased international attention will bring about a more lively and inclusive debate on the subject, allowing organizations and governments the opportunity to share ideas.

There are several critical issues at hand when looking at Bolsa Escola's potential for the future. Of greatest concern is the economic and political sustainability of such a program given the region's tendency for cyclical patterns of economic growth and radical policy shifts during changes in government.

Ideally, a nation would increase social spending during periods of economic decline when the poor need assistance the most. Studies indicate, however, that investment in social services by Latin American governments follow "anticyclical" patterns. Moreover, it is well documented that education is often the service that is reduced first and most drastically (Feranti, D. et. al., 2000). Nelly Stromquist (1999) confirms this conclusion, arguing that

Facing pressure to reduce budget deficits, many governments look first to education for ways of diminishing expenditures. That education is easy to attack is facilitated by the fact that mainly poor families attend public schools today; their voices are weaker than those of families whose children attend private schools.

This is especially alarming due to the fact that poor families, which depend entirely on the public school system, are hit hardest by these budget cuts. "It has been estimated for Latin America that...a reduction of five to 10 per cent in government expenditures as a proportion of GDP may result in a net drop in family resources three to four times larger" (Albanez et al. 1989 cited in Stromquist, 1999). This net drop is often associated with increased fees for social services, representing a high percentage of poor families' incomes, and thereby increasing the opportunity cost of sending children to school.

By developing a multi-level and institutional approach, however, the Brazilian government has made good use of its institutions and legislature to bolster the sustainability of Bolsa Escola. First, many authors argue that the decentralization process, first stimulated by the participatory 1988 Constitution, created the administrative and fiscal autonomy at the sub-national levels of government necessary for the development of Bolsa Escola (ILO, 2001). This autonomy, combined with the various spaces created for civic participation, offers many channels for maintained pressure to continue the program when threatened by external factors. Second, the 1998 constitutional law requiring a minimum expenditure on education at the federal, state and municipal levels has created a buffer for social spending during periods of economic decline or changes in government. Third, by reducing the income gap the Bolsa Escola program softens the disproportionate consequences faced by the poor during economic recessions. Finally, the range of institutions and organizations in support of Bolsa Escola mentioned above provide a social service safety net, increasing the chance that

poor populations will continue to receive some form of support during times of economic and political instability.

The final issue discussed in this section is the influence of the transnational financial sector and international organizations on Brazilian economic and political policy. Brazil, like most LDCs, is subject to pressures from abroad for improved investment opportunities associated with a stable currency and economic expansion. As Cristovam Buarque stated almost 20 years ago, however, one must question the seemingly positive effects of the pro-growth macroeconomic strategies increasingly implemented around the world. A recent study on child labour in Western India concluded that the, "...prevalence and absolute expansion of child labour in a period and region of relatively high growth of aggregate output indicates that the nature of economic growth is flawed" (Swaminathan, 1998). Thus, policies aimed at GDP growth in general may not be relatively ineffective at increasing educational attainment and combating poverty, but actually exacerbate the situation.

The severe effects of macroeconomic reform as components of structural adjustment policies (SAPs) prescribed by the World Bank and International Monetary Fund (IMF) have been well documented. This comes as no surprise given the fact that many SAPs mandate drastic cuts in social spending and, in general, focus on short-term economic adjustment measures that may ignore the long-term consequences of increased dropout rates. One study focusing on recent SAPs in Brazil, Costa Rica, Senegal, Tanzania and Hungary indicates that spending in primary and secondary education decreased as a result of SAP measures while a similar study in Africa concluded that they had a significant effect on educational performance and attendance (Reimers and Tiburcio, 1993 cited in Stromquist, 1999; Samoff, 1994 cited in Stromquist, 1999). Similar conclusions have been drawn among Latin American countries.

The data for the level of educational expenditure as a proportion of total government expenditure in Latin America, which cover a period of about 16 years, reveal a negative annual growth in 14 out of 19 countries. (Reimers, 1991 cited in Stromquist, 1999)

Thus, it is crucial that governments implementing social reforms such as Bolsa Escola continue to search for the external support necessary for maintaining autonomy in the face of international economic and political pressures.

## CONCLUSION

Putting aside the economic and political sustainability of Bolsa Escola, there are four issues that may prove to be important as the program develops. First, program directors must explore ways to incorporate adequate methods for monitoring the efficacy of the program, especially given its highly inclusive and decentralized nature. The ability to consolidate the information gathered by the multiple parties involved must be developed for effective reflection in the future. Second, despite the high presence of non-governmental participation there is no evidence in this research of significant representation by women's groups in the program. While the maternal administration of funds within the family is an important step in the right direction, it does not make up for the subordinate role women play in Latin American society.<sup>3</sup> Third, as indicated above, a strong public relations campaign must be developed to further inform the public about the intentions and regulations of the program. Arianna Legovini of the IADB suggests, to the contrary, that eligibility requirements not be disclosed in order to prevent distortions in data given by potential beneficiaries (Legovini,

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<sup>3</sup> Stromquist (1999) provides an enlightening perspective on the role, or lack thereof, of women and women's organizations in development strategies in Latin America and Africa.

2001). The author believes, however, that this strategy displays a fundamental mistrust toward the public at large and serves to perpetuate the relationship between low levels of institutional legitimacy and civic participation. Future attempts to improve Bolsa Escola will be incomplete without fully considering the experiences of the families potentially benefited by the program. Finally, many of the forums established to diversify interests represented at the administrative level are appointed by the Brazilian government. As information about the program is increasingly made available to the public, it is important to continue searching for new vehicles of civic participation such as participatory budgets and increased opportunities for public elections to administrative boards.

While government investment in accessible quality schools has continued to be viewed as necessary, it is no longer seen as sufficient for increasing educational attainment. The Bolsa Escola program presents a clear break from the economic growth models and supply-side based strategies of the past. Furthermore, the initial studies, both quantitative and qualitative, provide a positive outlook for the program in the future. These results greatly outweigh the relatively small levels of expenditure necessary for sustaining the program, measured at less than one per cent of the Federal District's annual budget during the initial period of expansion from 1996 to 1999 (ILO, 2001). As Feranti (2000) states, "Targeted social spending accounts for small shares of GDP, but the programs it makes possible can make such a large difference to poor people affected by a negative shock." As the Bolsa Escola, and the institutions necessary for monitoring its process, increasingly become a fixture in Brazilian social welfare and education policy, it is important to remember that the program is still a recent phenomenon. It is all too easy to become entrenched in the complex practicalities and lose sight of the greater transformation taking place within development paradigm. Bolsa Escola is just one expression of the alternative vision for development expressed in "A Revolução nas Prioridades."

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