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As an Editor-in-Chief, I have to admit that IEJEE wouldn't be there it's now without the countless hours of 'overtime' that my closest colleagues, Dr. Turan Temur, Editor, and Dr. Gökhan Özsoy, editorial board member, have devoted to this young journal. Thanks a lot Turan and Gökhan.

Sincerely

Prof. Dr. Kamil Özerk
Chief Editor
University of Oslo, Norway

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Making some modest strides: The story of downtown elementary school (DES)[1]

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Abstract
This paper discusses research, (its process and results), on an inner city school. It highlights the methods of data collection used in the research and discusses the findings. Methods of data collection include observation, interview and documentary information. Results indicate that the school in question is making modest strides, in terms of serving its students and the community in which it is located, through its school improvement programs. Besides making other strides, Downtown Elementary School (DES) strives to be a pedagogical community and a place where praxis (simplified definition: the interrelationship/interaction between practice and theory) is being practiced at its best. DES is unique because it concurrently runs two contemporary school reform programs, namely, magnet[3] and professional development school (PDS)[4]. The paper describes how these innovative ventures operate at DES and the implications of the juxtaposition of the two programs.

Keywords: *School reform, magnet schools, professional development schools, ethnography, multiculturalism.*

Introduction

This paper is about research that was conducted on a predominantly Black student populated school that has both magnet and professional development school (PDS) programs. The data used in this paper was

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[3]Magnet schools are schools with educational offerings so promising that, it was hoped, parents would overcome their fears and concerns about interracial contact and place their children in desegregated settings.
[4] It is a school for the development of novice professionals, for continuing development of experienced professionals, and for the research and development of the teaching profession. Although the concept of school-based teacher education is not new, the PDS movement is different from the traditional school-based approach because of its focus on individual public schools as well as the depth of collaboration between university and school-based educators (Lecos, 1997).

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gathered through an ethnographic research in which the author immersed herself in the research site. Entering Downtown Elementary School (DES) as a distant observer, the author gradually became a participant observer in the capacity of a substitute teacher, gathering information on the school for approximately three years. The process and byproduct of this research are presented here in this paper, in not just a simplistic narrative form but also in the form of a complex enough analysis that turns the everyday taken for granted issues into analytically abstract issues and vice versa for theoretical and practical purposes in order to attain an optimum level of analysis based on praxis, emphasizing the interrelatedness and interdependence of theory and practice and how they feed off each other.

Besides the introduction, the paper consists of four other sections: description of the methodology, presentation of the results, a discussion of the findings and a conclusion section. The second section, immediately following the introduction, is an elaboration of the methods of data collection, and how the data were analyzed. The methods of data employed, include: participant observation, interviewing, documentary information. The author provides an elaborate description of how each one was carried out since one of the foci of the paper is the "research process".

The third section of the paper is a presentation of the outcome of the research. Culling from interviews conducted at DES, the author paints a picture of the story of the school. Major themes that emerged from the data analysis include the revelation of DES as pedagogical or learning/teaching community, DES as a site where praxis, through the collaboration between different experts (theorists and practitioners) is practiced at its best. The fourth section discusses the findings at length from a critical multicultural perspective. The results of the research illustrate how DES is making some modest strides in school reform due in part to its innovative programs – magnet and PDS, albeit, the critical analysis. The fifth and final section is a summation and reinforcement of all the sections. Suggestions for further research are also made in this final section.

Methodology

This section is a crucial component of the paper and is an elaboration on the research process –the ethnographic study. Methods of data collection used in the field research on DES include participant observation, interviewing and documentary information. These are described in detail in the next few sub-sections. Note worthy is their face-to-face nature, especially in the case of the first two methods. After all, earlier social science researchers have long recognized the relevance of fieldwork:

> Good training in theory and acquaintance with its latest results is not identical with being burdened with 'preconceived ideas'. If a man sets out on an expedition, determined to prove certain hypotheses, if he is incapable of changing his views constantly and casting them off ungrudgingly under the pressure of evidence, needless to say his work will be worthless. But the more problems he brings with him into the field, the

> more he is in the habit of moulding (sic.) his theories according to the facts and of seeing facts in their bearing upon theory [what better way is there to explain the use of *praxis* in research than this], the better he is equipped for the work. Preconceived ideas are pernicious in any scientific work, but foreshadowed problems are the main endowment of a scientific thinker, and these problems are first revealed to the observer by his theoretical studies. (Malinowski, 1922, pp. 8-9).

Similarly, more contemporary researchers, alluding to the above quote, are in agreement about the importance of empirical research in theorizing and vice versa, (Alasuutari, 1996; Amundson, 1998; Denzin & Lincoln, 2005; Hammersley & Atkinson, 2007; Helfat, 2007; Spradley & McCurdy, 1972). Spradley & McCurdy, (1972), for example, spelled it out in a clear and concise manner:

> It is possible to acquire partial understanding of this perspective [phenomenon under study] by reading and studying anthropological literature. We believe that a more meaningful learning experience results from first-hand cultural investigation. Fieldwork leads to higher level of concept comprehension . . . (p. 3).

Hence, prior to writing this paper, the author embarked on a three-year ethnographic research employing the methods of data collection described below.

Participant observation

As advised by (Glesne & Peshkin, 1992; Johnson & Christensen, 2008), the author used participant observation for the purpose of being there to catch the "moments," developing an understanding of the research participants and acquiring the status of "trusted person" to facilitate the collection of data. Thus, I started off as a “participant observer”, to borrow Spradley’s words (1980, p. 53). As one that eventually became a substitute teacher in the school, the teacher began as a participant-observer at first who later became observer participant and then finally a participant-observer and attending major events such as school carnivals and speeches on Martin Luther King Jr. day, and others. Through participant observation (through being part of the social setting of the school) the author tried to learn firsthand how the actions of the research participants correspond to their words; see patterns of behavior; experience the unexpected; develop a quality of trust with my research participants that motivates them to tell the author what they might not otherwise tell an outsider or a stranger.

As noted by several scholars, (Johnson & Christensen, (2008); Anzul & Ely, 1991; Glesne & Peshkin, 1992; Spindler, 1997; Spradley, 1980), participatory observation served as the essential means of gathering qualitative data. Besides being useful as a tool for establishing rapport, it is also useful as a method of gathering data. Participatory observation covers a continuum of different kinds and degrees of participation.

The type of participatory observation that was used during the first few weeks of the research was mostly observation without note taking, in

order to give the research participants the chance to become used to the author's presence. The author then gradually began to take field notes and make arrangements to observe certain individuals and functions of the school. The author's approach eventually became as interactive as possible depending on the type of rapport that was established in each instance/situation or moment of the research process.

Besides day-to-day observations and interactions with individual teachers and staff throughout the two year study, the author had the opportunity to observe five major events: the carnival, the launching of the school book coupon, the Martin Luther King Birthday celebrations, and the Black month cultural celebrations. Each event, although not a one-day celebration, ended with a gathering of the entire school for an hour or two of exuberant performances such as dances, speeches, recitals and pep-rallies. The author also had the chance to interact with the whole school population on a day to day basis in the capacity of a substitute teacher, get the feel of what is going on, observe and learn the language of the new environment as the author became fully immersed and her presence no longer bothered anyone.

Interviewing

The second major data collection method employed was interviewing. Informal conversational interviews were carried out throughout the research. That is to say that the author asked questions on the many occasions when something was happening that she wondered about, and had conversations with the people she came in contact with, without formally arranging a time to ask questions. In terms of formal interviews, the author conducted open-ended and semi-structured interviews whereby appointments were set up with selected research participants. Ten audio taped interviews were conducted with two University representatives, the school principal, an administrative staff, two parents, two interns and two mentor teachers who were willing to have an in-depth conversation with me.

The University officials that were interviewed have a longtime relationship with DES as well as expertise in teacher education, magnet schools and professional development schools. One of them has worked as a representative of the University in its collaboration with DES in the training of teachers by assigning them as interns to various mentor teachers. The other University official interviewed was an expert in teacher education and has served for a long time on various committees that represent the University in the PDS consortium of universities and is behind the beginning of the University of Tennessee's collaboration efforts with the neighboring public schools.

The principal and the administrative staff that were interviewed have both been with DES for a very long time and have seen it move from being magnet school as it was originally intended, to being a professional development school as well. In fact, the school administrator has been with

the school since it was founded, first as a classroom teacher, and then a curriculum supervisor.

The two parents that were interviewed have first hand knowledge about their children's school because they both work there and so are well informed about issues of concern and the advantages of having their children enrolled in DES. The fact that they are parents and teaching assistants rather than classroom teachers makes their perspective a useful addition to the picture because they are able to view issues from different angles and appreciate issues that may not be of much concern to the teachers and other members of staff of the school.

Two mentor teachers were also interviewed. One was a former intern at the school who got recruited after completing her teacher education program. This teacher therefore had a considerable knowledge and experience base that consists of knowing what it means to be an intern and what it means to be a mentor and therefore offered a lot of insight on the issues at stake. The other mentor teacher has several years of experience as a teacher and a mentor and is a recipient of several teaching awards and so speaks with authority on the issues that were discussed. At the time of the interview, she had just won an award for excellence in teaching skills. She had a lot to offer as to what the school was doing with the interns and teaching in DES in general.

The two interns from the University that collaborates with DES that were interviewed, were at different stages of their program and worked at different grade-levels so the author was able to tap into their different perspectives based on the length and type of interaction with the school and length of time spent in their teacher training program thus far. All in all, therefore, the population of respondents was diverse with different perspectives that provided an insight to the broader picture.

Documentary information

Documentary information was gathered from various publications and manuscripts such as affiliated university students' term papers, local newspapers, DES's handouts, application forms, announcements about events and agenda of events, description of programs and activities of school, etc. The author was also able to obtain and study documents that guided the development of both programs at the school. Some of the other documents include historical newsletters of churches, notes that have been written by various members of the civil rights movement at the time of the desegregation of the city. The handbook of the County's Substitute Teacher, The Title One Parent's Handbook, and the School's Staff Handbook were reviewed.

Data analysis

Data analysis was part of the research process right from the very beginning to the end. The data included field notes, ten audio taped

interviews, photocopies of newspapers, and other printed materials mentioned above under documentary information. Data analysis entailed the summarization of data, transcription of interviews, coding and interpretation. It also entailed the integration and presentation and all of the above; i.e. the integration of the summarization of data, transcription of interviews, coding and interpretation in a way as to make sense of it all and give an organized picture of the process and outcome of the research.

As advised by various experienced researchers such as (Johnson & Christensen, 2008; Wolcott 2001; Corbett, Dawson, & Firestone, 1988; Miles & Huberman, 1984), the author started data categorization and the writing of research report early in the study and continued after the field research was over. Field notes were organized by day and time and where observation took place, the audiotapes were labeled according to the interviewee's given name.

As the author continued to gather, organize and summarize the data, clusters or analytic units began emerging (in the form of ideas and phrases repeating themselves), which were then used as tools for organizing the description of the data. Throughout this qualitative research, the author paid close attention to the fact that all the stages of research are interdependent. Thus, data were in fact invariably analyzed throughout the research process. There were several mini-analyses all throughout the research as the author sought to summarize and make presentations, interpretations and integrations with every bit of data that were gathered each day.

The ten audio taped interviews were transcribed into typewritten texts by the author and then read over and over to familiarize the author with their contents. Field notes and some information from documents were also transcribed, scrutinized, sifted and as time went on themes began to emerge (in the form of ideas, topics and subject matter) and the data was categorized according to these themes which are further *crystallized*, i.e. reflected, refracted and the findings discussed in the next section. In essence, the author did not only focus on portraying a detailed description of events and processes at the school (at the micro level) but also on "making the familiar strange and the strange familiar", (Spindler & Spindler, 1983, pp. 23-24) drawing on the real life situation and the ideal, and teasing the data to see if there is common ground for the past, present and future advances at DES and the idealized versions of the school's magnet and professional development programs (at the macro level). Thus, the analysis process included grouping data from different sources together to provide concrete thick descriptions that consist of different aspects of DES culture and provide a rounded picture that makes theoretical implications possible while heeding to the warning from Hammersley and Atkinson (1983),

> Theorized accounts give much poorer representation of the phenomena with which they deal. On the other hand, assuming the theoretical ideas are well founded, they begin to give us much more knowledge about how particular

> aspect of social process is organized and perhaps even why events occur in the patterned way they do. (p.177).

There is the need for triangulation in order not to rely on only one piece of data rather than different kinds of data. Hammersley and Atkinson (2002) indicated that the danger of undetected error built into data-production can be minimized through the use of different kinds of data rather than a single piece of data. They assert that if different kinds of data lead to the same conclusion, then one can be a little more confident about that conclusion, bearing in mind that the different kinds of data have different kinds of error built into them.

Hence, the author did not only gather different kinds and sources of data, but also tried to remain systematic, rigorous and robust in conducting this research exercise. Through reflective thinking, nothing was taken for granted as the author worked on "making the familiar strange and the strange familiar" (Spindler & Spindler, 1982, pp. 23-24). In order to facilitate the process of making the familiar strange and the strange familiar, the author did not only review the available literature on magnet and professional development schools, but also immersed herself in DES, a school that has both programs, as well as triangulate various other techniques of data collection. Data from one method complemented, authenticated or contradicted data from another method and/or provided ways and means of carrying out other methods of data collection. In other words, through casual observation, the author was able to design questions to investigate during participant observation. All the stages of the research are intertwined and interrelated. They are framed and formed from one another and data from one are crossed examined through the use of another method. For instance, interview questions were framed from notes taken during observation and the entire collection of data from interviews, observation and documents were triangulated not so much to "commend the use of different methods as to give weight to the idea of reflexive triangulation" (Hammersley & Atkinson, 2002, p. 232).

In addition, data from different respondents gathered at different moments and in different situations were triangulated and never taken at face value. For instance, through participant observation (through being part of the social setting of the school) the author tried to learn firsthand how the actions of the research participants correspond to their words; see patterns of behavior; experience the unexpected; develop a quality of trust with the research participants that motivates them to tell the author what they might not otherwise tell an outsider or a stranger.

The outcome is not just a simple narrative but also a complex enough analysis that turns the elementary, taken for granted issues into analytically abstract issues and vice versa for theoretical and practical purposes attaining an optimum level of analysis based on *praxis*, emphasizing the interrelatedness and interdependence of theory and practice; how they feed off each other. Emerged major themes include: *DES*

as Pedagogical Community; Praxis at Its Best: Collaboration between Different Experts. Subsequent sections, present more detailed descriptions these findings. The author proceeds to discuss the big picture in greater depth through critical multiculturalism.

Results

DES as pedagogical community/learning community

A theme that emerged was the school as a learning team or a community of learners. This is made possible and facilitated by the school's magnet program. There were computers everywhere, at least two in the non-magnet classrooms and up to five or more in the magnet classrooms. There were also two computer laboratories and i-Note-Books for some of the higher-grade magnet students to be used both at school and at home for note taking and for doing homework. There were computer classes for parents, the community tried to stay connected as a school, a family of friends, who shared each other's expertise in trying to raise the students as not only knowledgeable but also decent up-right respectable future leaders.

It was not always easy, but in as much as possible, every staff member and some of children's guardians tried to stay involved in the school's activities in general and especially in the activities of individual children. The principal and assistant principal were the ones who, for the most part, dealt with some of the most difficult daily situations such as misbehavior and disrespect of students. The administrative staff, especially those who have been there for a long time, have a way of calming down whatever situation there might be that inhibits learning and encourages disrespectful behavior of each other and of grown-ups. Each person in the school, in their assigned role and capacity played a very important role in trying to bring about the success of the students.

Different children with different problems and needs were assigned staff with special expertise to deal with these needs and it was not always easy but they tried their best. Eye and dental care was provided to all students periodically. Extra speech and reading lessons for specific students were provided. Projects/programs were designed for the gifted and talented. Additionally, extra-curricular activities such as music and dance were made available to students whose parents were interested in having their children take up such lessons and extra-curricular activities. The involvement of most parents, the subject of the next subsection, was also highly noticeable.

Involvement of parents, grandparents and guardians. Every now and then, parents, grandparents or guardians would make unannounced visits to check on their children and sometimes they may happen to come on a day that their children are having a bad day or a day when they can be helpful to the teacher.

Some parents are a part of the faculty and staff of the school as teachers or teaching assistants or administrative staff so it is in their interest to put

in their best effort when it comes to the affairs of the school. Other parents or grandparents and guardians volunteer services either on a regular basis or just every now and then. It is not unusual to find parents on the school premises involved in the school's day-to-day activities. As a substitute teacher, the author has met parents that were mistaken for classroom teachers and was very impressed to learn that they just came to help out because their children attend DES. The PTA is quite active and they have PTA days when they bring food to the school for everyone just to express their gratitude.

*After school program*s. In keeping up with ensuring the welfare of the children, there are various ways of making sure that they stay off the streets and that parents who work don't have to worry about picking up their children until in the evening or after work. This is made possible by the after school program. According to Denise (fictitious name), a parent,

> There is [*sic*] so many programs here in the building . . . each child can pick one of those and stay involved in that program. And that will keep them here if mom has to work late or whatever. And there is a daycare program, Prime Time, YMCA, which my child attends. So if you if you are running little late or whatever, you don't have to worry . . . And you don't have to worry about transportation . . . you don't have to worry about any of that stuff . . .

Also in relation to that is the full service program where various experts like counselors, dentists and optometrists are brought in to take care of the entire well being of the students. Some of the students who were legally blind had prescription glasses made for them. They also received regular special tutoring. Others had a lot of serious dental problems that had to be taken care of. Children who had lost relatives were given special attention in class and received periodic counseling.

Computer literacy and media training. In accordance with DES being a technology based magnet school, it is saturated with computers, televisions, and a fully established media production studio. There are two computer labs, the title one computer lab and the magnet computer lab. All classrooms have at least two computers and a television. The magnet classrooms may have more than the non-magnet but no classroom goes totally without computer and television.

All the students receive computer lessons and it begins as early as kindergarten and first grade. There are some technology experts who work with the students and the teachers to up-date their knowledge on various computer programs. Media experts work with students to develop newscasts produced solely by the students. Each school day began at 7.30 a.m. with the TVs turned on as the entire school was prompted to recite the Pledge of Allegiance. This is followed by the latest news at DES and announcements by one of the TV news anchor of the day. Every now and then these students go around the school taking pictures and videotapes and when there is an

important event going on, with the assistance of the adult studio workers, the student TV crew tries to capture it all on tape.

Praxis at its best: Collaboration between different experts. Another theme that emerged was the implementation of praxis "at its best"? The question mark is there for a reason. Although the author was not always seeking to find where theory was intersecting with practice, one could not avoid the nexus of that interplay. For example, some of the most difficult questions facing classrooms were those of teachers who do not seem to be able to bridge the generational gap between them and their students in terms of the magnitude of the social problems students face. The different interns and teaching assistants that worked with the different teachers and classrooms were able to coordinate efforts even when their approaches were different.

The interns are able to learn from these teachers what they need to do to become better teachers and yet maintain their unique approach or style of teaching. Teaching or serving (in the cafeteria, as janitor, as counselor, as skills personnel, administrative staff, etc.), in a school such as DES, is a very difficult challenge and a labor of love and care. Some had to quit, frustrated, a lot are still persevering so that they may be able to take care of our future leaders and responsible citizens. Some of them are so up to the task that the job seems like an effortless activity. The author believes sometimes the tasks seem effortless to the observer because the one performing them has long years of experience, love or enthusiasm for and dedication to the profession, flexibility and frequent professional development training on different ways of achieving the same goal.

As expressed by one of the participants, the collaborative aspect of the two programs (magnet and PDS) is helpful in achieving the school's goals, giving every child a fair chance of obtaining good quality education and providing teachers of the school a chance to interact with pre-service teachers and their professors in order to stay informed about the latest theories and research findings in education. Another participant, a member of staff and curriculum specialist said she was very impressed by the fact that the collaborative effort between the school and the University made it possible to get to know about events such as conferences and even made it possible to attend them. This never happened prior to the collaborative effort and she has been learning a lot not only from the conferences but also from the University students and their professors. A University administrative staff said it is a win-win situation because the school makes it possible for their students to intern in a real life situation and conduct collaborative research with teachers who are not new in the field.

Through observation and the notes that were kept on how this unique school functions, the author has come to the conclusion that it is a school that expends considerable effort to ensure that everyone's contribution and voice is heard. Many of the school's faculty and staff indicated that they know that what they are doing and have to do is not an easy task but they

are content in the fact that at least they are doing something positive about taking care of the children and community's needs jointly. The different interns worked in collaboration with their mentors in different unique ways as befits their different personalities and approach to the issues, be it lesson, content, discipline or classroom management.

The different workers had different roles and they all had to work together in a collaborative manner to get their work accomplished. As a substitute teacher of the school, the author got to understand that the most difficult tasks of the teachers was classroom management and control over the children and also realized that there are different approaches and it is easier for those who have been in the system longest and best know the class, individual students and their parents. Parents and grandparents frequent the school to check on their children's performance and welfare. The children are sometimes a source of information on how to go about managing the class and dealing with the different children especially when you are new in the school as was my case - as a researcher and a substitute teacher. The teaching assistants are especially very helpful to the children and teachers and although they perform different roles from the rest of the school, they are an essential part of the wellbeing of the entire school.

The janitors, cafeteria workers, parents and teachers are a source of learning about good manners, proper language and acquisition of the necessary skills for becoming good and responsible citizens in their community. The administrative staff, especially, the principal and assistant principal, had greater control over the children in terms of improper behavior in the classroom, hallways and cafeteria.

Also, when they first encounter someone new in the school environment (such as a substitute teacher, a researcher or community resource person) the reaction of the children was different and there was always the need for those who have been in the school longest to assist the new arrivals. Initial reaction of the children was that of excitement and questioning in order that they may get to know the person better and also find out if the person was in a good position to teach them. The author, upon reflection on her work as researcher and substitute teacher at the school, realized that there is the need for humility especially when people with different talents get together so that they can dialogue on their common concerns. Especially, as a researcher, there is the need for one not to be over-confident but humble enough to show some ignorance, admit faults and respectfully learn from one's participants. These are also essential qualities in the teachers, the administrative staff, the other workers, parents and the entire community as well as the University affiliates in the PDS collaborative effort if there is to be a successful and productive collaboration between them.

PDS: collaboration between the university and the school. Similar to what was reported by Rice (2002), the PDS program at DES is a process that

embodied several dimensions as exemplified in the next few paragraphs. The University and the school worked hand in hand to bring about improved teaching methods, by researching together and sharing knowledge. Student teachers intern and work along side experienced classroom teachers and they each get to learn what each one brings to the table: practical knowledge gained from experience and theoretical knowledge gained from reading books. So not only is teacher preparation of the University students going on, but also professional development for the teachers at DES as well. As one of the participants from the DES staff put it so well,

> So the biggest part, I think, is the fact that - the collaborativeness, the ability to receive and gain always . . . We talk about being life-long learners . . . We are able to get the research-based information from the university through the professional development school [PDS]. We can bring that back and see how it applies in our school. These are some things teachers normally wouldn't have time to go out and just for whatever reason read, just read. All teachers read, of course, but generally directed toward their classroom . . .

Noteworthy is the fact that just as was observed in the literature review, there is a dichotomy between research, which is supposed to be the role of the University, and practice that of the school. However, another participant, University personnel, describes the rationale behind the PDS differently:

> So the idea is supposed to be a special school where teacher training - teacher preparation is the key focus and that the University and the school system agree on the teacher preparation process and agree as to how interns are going to be placed in the school and what kinds of things they'll do as part of their training program . . . Secondly, was a focus on continued professional development for the teachers who are in the PDS in the school. And the idea was that everyone in the school is considered a learner, including not only the students, not only the interns, but also the teachers of the school and the University personnel who happen to work there. So that everybody is supposed to work together to improve teaching and learning in the PDS.

And yet, what another participant shared with me about this collaboration indicates that the old tradition of believing in the University as the main source of authentic and genuine research and knowledge still prevails:

> It is the University of (mention of the State in which it is located) . . . we are talking about the presence of students and professors from the University in our school - it is such a, eh - working alongside with everyone, we feel lucky to have them here.

Mentor-teachers and interns exchange of knowledge. The mentor-teachers and their interns may have different approaches to teaching and different sources and stocks of knowledge, but they respect what each one brings to the table and interact in a way as to make it possible for them to exchange knowledge and create an environment conducive to learning. Here, research and practice actually blend together to produce praxis - a blend of practical and experience-based knowledge of mentor-teachers and theory, avant-

garde based knowledge of the interns. There is a good level of collaborative effort to not just share and exchange knowledge, but also to create new approaches and theories by researching together. For example, one of the University personnel describes this goal so clearly:

> . . . [The] goal is to do some research on new practices - new teaching practices and new organizational structures or different organizational structures. And the school and the university make a commitment to essentially conduct inquiry projects into different practices.

An intern also talks about mentor-teacher relationship and the praxis aspect of the relationship:

> . . . the PDS just helps . . . it helps the things we do to be research based - an emphasis on action research and involving your mentors in your action research project and not just do it yourself.

It is also important to note, as mentioned earlier, that in most instances at DES, interns and mentors consider each other as colleagues. This is what one of the interns said:

> I think having . . . the PDS and working with your teacher and feeling like you are a colleague and them [*sic*] treating you like a colleague definitely helps. This definitely has a positive effect on the confident level of the interns by the time they graduate.

Discussion of findings from a critical multicultural point of view: the big picture

> Critical multiculturalism may be described as a perspective from which "representations of race, class, and gender are understood as the result of larger social struggles over signs and meanings and in this way emphasizes not simply the textual play or metaphorical displacement as a form of resistance . . . but stresses the central task of transforming the social, cultural, and institutional relations in which meanings are generated "(McLaren, 1995, p. 53).

DES, as a school that juxtaposes both magnet and PDS programs, faces a lot of complex issues because school reform efforts have been both informed and complicated by historical and contemporary issues related to social difference (race, gender, class, sexual preference and disability). In this particular school, the dominant contemporary issue and social difference issue was not only that of segregation or desegregation of schools, but also the intricate relationship between race, gender, class, sexual preference and disability issues in this nation and in the world for that matter. Rather, it is a much more complex and comprehensive issue of integration, inclusion, equity and excellence in education. It was not as simplistic as an issue of sexism and/or racism, cultural domination, ethnocentrism, Eurocentric imperialism, ethnocentric diversity, homophobia, etc., but a combination of all the above delicate and sensitive issues.

Everyone at DES shows an awareness of issues of race, class, gender and ethnicity as they interact with one another. When a child calls another a racial or sexist name, instead of putting up a fight, that child reports to

the teacher or the nearest adult. The author observed teachers warn children against this practice of name-calling but has not seen them try to take proactive steps to prevent it and to explain to children why such acts are improper. From a critical multiculturalists' point of view, this is an omission that could have been easily taken care of with the introduction of some multicultural activities such as having children describe other people that don't look like them both in the classroom and elsewhere. In discussing such issues, they may also be asked to reflect on why some people are called certain names and how it might feel to belong to one or the other race. Another exercise could entail having them research on the historical origins of some of these names, and how those origins impact on individuals today.

In an effort to start education on diversity early, some kindergarten teachers have dolls of different races in their class. The author observed children play with them while their teachers pay no attention to what and how the children were playing with the dolls. The author observed that the main objective of their presence might have been reduced to a mere cosmetic gesture of racial representation. In their play, some children for example, arranged the dolls according to types based on their skin color. A critical multicultural education teacher would have taken that opportunity to introduce racial integration and mention how a lot of times people of different colors have to be together at a lot of places at the same time and co-exist without the need to be kept in isolation. The school and the classroom population would make good examples in terms of their being interracial. Even at that tender age, they have been able to observe the segregation problem that is still persists in a larger part of the American society and in their immediate families, residences, and churches and in the city that DES is located for that matter.

There is a considerable amount of diversity in DES classrooms and this makes the everyday classroom interactions of students and instructors not only richer in variety, but also more complex. The increased diversity because of its magnet program, means that the histories, cultures and everyday experiences students, teachers and administrators bring to the DES classroom are quite distinct and separate, even distanced by time and space. The classroom in this case is similar to what Bacon and Kischner (2002) meant when they observed, "classrooms are greatly enriched when they are not defined by the four walls that enclose them, but as a nexus of community resources that teachers can draw on to build understanding of greater world" (p. 51). Teachers, in particular, are faced with the task of helping one another, and their students, to engage positively, negotiate fairly, and intellectually come to understand "difference" in their classrooms. The importance of this daily task cannot be over-emphasized. The manner in which the next generation learns to engage, negotiate, struggle over and understand "differences" are crucial to the future of their lives as adults and responsible citizens of their society and the nation at large.

The role of social difference in the idea of, and rationale for, and function of both magnet and PDS programs cannot be stressed enough. Issues of race, socio-economic background, issues of power and gender, the meaning of knowledge, ownership of knowledge, the relationship between knowledge, race, class, gender, power, and the ownership of knowledge have been questioned by the author. For example, one of the reasons why these magnet and PDS programs have been instituted is because of the recognition that too many of America's children are not learning and that what they are learning is not enough. The magnet schools are especially meant to provide or make room for those who are most likely not to be learning or not learning enough. A critical multiculturalist approach, with its emphasis on diversity and equity, can facilitate this ideal.

A number of multiculturalists, (Banks, 2006; Banks, 2001; Brown & Kysilka, 2009; McLaren, 1995; Nieto, 2004; Ladson-Billings, 2004) have noted that there is need for the realization of students and teachers alike that justice does not exist simply because of laws but that they have to continually struggle against injustice and persist for the implementation of the laws for the promotion of justice. How does this translate in the findings of the study of DES and its magnet and PDS programs?

In the case of the PDSs, for example, it is assumed that power is equally distributed and everyone is said to be a winner. However, there is virtually no in-depth discussion on how one acquires the title of the "best teacher", "teacher of teachers", novice, mentor, student, etc. In the course of the research, the author got to find out at lunch break in one of the faculty lounges that one of the teachers who had been there longest and had always had interns prior to the time she was there, was either never available for a chat or never fitted into my interview schedules. Judging from the way no one could control her class when she was away, she probably was given a bunch of problem children or her techniques were simply so unique that the class could not stand any other teacher. For example, the student teacher of this class quit suddenly, and all substitute teachers assigned to that class complained about the behavior of the students. The author felt this was a powerful voice of importance that was silent for some reason. It was later found out that she had a very sick child at home that is most likely not going to stay alive. The issue of voice and voiceless therefore has many dimensions and dynamics to it. How long does one remain in each position, how do they intersect, how fluid are their duties, responsibilities in relation to power and authority? Whose voices are the loudest and where is the voice of the voiceless?

The kind of hegemonic relationships between mentor teachers and pre-service teachers; between teachers and University staff and professors were very apparent in the interview responses as well as in my observation of what went on at DES. During the interviews, most of the participants indicated how they respect their colleagues' expertise and yet emphasized that they did not discount their own expertise. Interns on the other hand,

expressed the need to be diplomatic when it came to sharing what they learn at the University in their teacher-training program because they still felt more like novice and learners rather than colleagues to their mentors. Both University affiliates and practicing teachers of the school, however, still revered University based knowledge and research instead of emphasizing how to make it both school and University based all at once. A critical multiculturalist approach will mean a break down of false barriers between theory and practice making possible for the University professors and teachers to research together and allow theory to inform and feed off practice and vice versa in the production of *praxis*. This finding relates to the popular view that the University is the main authentic site for *serious research and knowledge*.

As far as critical multiculturalism is concerned, there is no room for this kind of myth to exist among educationists. The PDS program is an ideal site for the multiculturalists to reach their full potentials by constantly engaging in research, brainstorming on their strategies and challenging the meaning of knowledge in general. The PDS site ought to be a place where transformative academic knowledge as described by Banks (2006) thrives and coexists with established other types of knowledge. According to Banks (2006), this type of knowledge challenges mainstreams knowledge and leads to a revised establishment of canons, paradigms, theories, explanations and research methods. In my opinion, it is through critical multiculturalism, that the mainstream hegemonic nature of what is considered knowledge at this PDS site may be challenged. A few of the participants had mixed opinions about which party was actually in charge of research or serious knowledge. Some thought both DES and the University were commonly and equally engaged in the PDS, while others thought the research-based knowledge came solely from the University and the practical knowledge came solely from the school.

On the issue of the dynamics of having a voice and being involved, one of the participants was asked about how the information on the documents compares with the magnet program as it operates now. This is the response:

> The documents of the magnet program and the other programs that are offered by the school are—I don't think they say enough about the programs. I think that it's a little bit more in-depth. I think a lot of people have the misconception that this is for—the magnet class is for smart kids only. And the magnet program is for children, who, you know, may be in CDC [a special Education program] or have a handicap. It's not just for super-smart kids, and that bugs me. The average student can benefit just as well. The America's Promise—different things like that—that are going on in the building—That contributes so much to the school. And I think that's not said enough.

Although the response is negative there a discussion of how beneficial the program is and how its misconception does not do enough justices to it. There is a bridge of communication, but it is not a power issue, or is it? There is need for further investigation to arrive at a conclusive observation.

The institution of innovative programs of DES makes it possible for parents and guardians to have their children taken care of while they are away at work, the school has an after school service program which operates to take care of the children after school and also to provide them with other services. As one of the participants put it, "The after school or the full-service school programs have been wonderful—the kids having the opportunity to go to the dentist".

At DES, the author observed arrangements being made for children who had eyesight problems as well. Special arrangements had to be made for some of the children with special family problems. Mothers, grandmothers and aunties got involved with the classroom teacher, teaching assistants and the staff to try to remedy the problems as much as possible. As to how DES compares with other schools, one participant said:

> —Comparing this school to other schools—? Well for one thing, with the PDS team this school has access to the latest things—the latest ideas. Being involved with the University of Tennessee, I do not—I feel like that can be very beneficial and is very beneficial to this school, because they have contacts—outside contacts—that this school may not have, or they may be able to help the school in getting those contacts. So I think in that manner, you know, it helps this school.

Another expression of the school's uniqueness is as follows:

> They don't have as much as this school has. This school's very fortunate to have everything it has. I mean they really are. But you know what? They have a lot of caring teachers and they have a lot of good students. And to me—yeah, there's a lot of crime happening on the streets, but it's kind of like once you walk in those doors it's a different world. It really is. I'm not saying anything bad could never happen, but—I never had any problems, you know.

When asked about the significance of the school's juxtaposition of both magnet and PDS programs, this participant also provides valuable information on how the University is perceived and how this perception contributes to the hegemonic relationships described in earlier paragraphs. For instance, she said:

> Well, of course you know, what a magnet school is. It's a way to bring in—to diversify the population in the school by bringing people from different neighborhoods into the school. And PDS is, of course, a professional development team that works to help both mentors and U's interns who are becoming new teachers. How do I view the meaning and significance? Well—The combination of the two? Well for one thing, it gives the interns an idea of what a magnet school is all about. And—You know, it allows us to see how that type of school works and, you know, both the good and bad points of it. [PAUSE] Other than that I don't really—You know, I've thought about this question before because I kind of knew this was the one you were going to ask, and I don't see—I don't see that close of a relationship. I mean, yes you have a magnet school. Yes, you have a professional development team. [PAUSE] But—In a way they don't really rely on each other, I don't think. . . . You're talking about a PDS team run by the University of [name of state] versus a magnate school program, which is something that this school institutes. But like I said, it does give us a chance to see how that

type of school operates.

Another participant adds:

> I think it is a real advantage for this school to be, first of all, a magnet school as well as a professional development school in that both of them involve a lot of collaborative efforts. It involves with students. It involves teachers interacting with students, parents, the community, people in higher education. I think the magnate school concept came here probably before we—well before we became a PDS or a professional development school. And before the professional development school, the school was actually a site that took in student teachers from the University of Tennessee. But it was not quite as organized, of course, as a professional development school. So I think having both things—there are many advantages of being in a magnet school—Funding, additional personnel, a lot of opportunities that you wouldn't have as a regular school within the school system. And the PDS involves the ability to have an organized cohort of student interns who work collaboratively with our teachers. Our teachers become mentors to those interns. And we have people as part of regular program as well as part of the magnet portion of the program who work with the interns. So, again, the biggest part, I think, is the fact that—the collaborativeness, the ability to receive and gain always being—we talk about being life-long learners. I can think of no better way than to be part of a magnate program and a professional development school as part of becoming a life-long learner, because there's always something new—changing. We're able to get the research-based information from the university through the professional development school. We can bring that back and see how it applies in our school. These are some things teachers normally wouldn't have time to go out and—just for whatever reason, just read. All teachers read, of course, but generally directed toward their classroom. So I see the two as being much interconnected.

One or two of those interviewed said they saw a disadvantage in having both programs at the same school:

> Well—to be honest with you, I think the magnate program—I can see why they have it because it does bring people from other neighborhoods and it does diversify the population. However—and I do think it gives the kids some really good experiences. And, you know, this is a technology magnet school, something they really need for the future. However, I do see almost like class distinctions between magnet classrooms and classrooms that are not magnet, and I personally don't see that as something positive. Now, of course, whether the kids recognize this I don't—you know, it's hard to say. But I think they do because you get the idea, after being in the climate for a while, that magnate classrooms have this—they have this idea that they're almost superior to other students within the school. Do you see what I'm saying? And therefore in a way it does create a distinction there. But they do—You know, magnate classrooms do have a lot of technology, but what I've also noticed is that these other classrooms have the technology, too. So that is great, because I think every child in this school needs to have the same opportunities that are in that magnet classroom . . . And that's what we strive to go against, I feel like, in an educational setting. We don't want to create class boundaries. And I hate to say this, but if you go into a magnet classroom, a lot of times you are going to see children from other neighborhoods. So in a way it's almost like the people within this community may not—Even though the magnet brings a lot of positive things for their children, in a way their children may not get that into that

> magnet classroom. Do you see what I'm saying? So—But you have to take, you know, the good with the bad. . . . But all in all, I think the kids—that this magnate school does strive to provide these children with a lot of technology experiences that they wouldn't otherwise have in a regular—just a regular type school. So in that way it is very good for them . . . The only—which is not the case with me—but the only disadvantage I could see to students who are part of the PDS is that they do not have a technology background. They may not feel very comfortable in a magnate classroom, but it also exposes them to new things to learn. So in that way it could be a positive.

And yet, some participants expressed the gains and strides such programs helped them to make in their professional development and teacher-training program, as shown below. One intern said:

> How does it feel to be a student and also to be treated as a teacher, too? It's very hard, because you are—and you have to understand that they see you as a teacher at sometimes. You see yourself as a teacher sometimes. Then you see yourself as a student. And they also see you as a student because you're leaving the room to go to class or whatever. So it is a hard transition, I think, for both intern and teacher. And so you don't always get that respect that you should get as a teacher. But you can't expect to, I don't think. That's just the way it's going to be, because you are still a student and even the children pick up on that, you know. You're not going to get the same respect from them as—as the main teacher is going to get. So—there is a difference. There is definitely something there that makes it different.

The above quote also indicates how the roles played by interns and their mentors can be fluid and illustrates the power dynamics between them and how such a relationship could be quite delicate. A further illustration may be found in another intern's opinion on her relationship with her mentor teacher:

> Oh yes. I've been—I've been very lucky. She is very interested in what I'm doing. And I've noticed that sometimes I can say, "Oh, well I read this" or "I've thought about this idea", and the next thing I know she's using it. So—and that's what it's about, I think, anywhere you work. It's about sharing together—sharing your ideas and working together. If you don't have that you don't have anything. And I have seen her really work with me and—She shares her ideas with me and I share hers—or I share mine with hers is what I'm trying to say. And I think that although it might be hard sometimes for teachers who've been teaching a long time to sit down and say, "Oh, what good ideas do you have?" Because you know, of course, they have an attitude that—and they should—that they've been doing this a long time. They don't need some student to tell them how to run things. But they do, in certain ways, really value what you bring into the classroom, even though they won't come out and acknowledge—you know, directly acknowledge it. And if I were in their shoes I would probably be the same way. So [LAUGHS] I don't hold it against them.

Another said:

> Well the PDS—you know - we work together as a team. It is about teamwork. It's about getting input from interns, teachers, coming up with the best ideas to fix problems or change situations. The more input you have from people the better off you are. I mean, there is no doubt that two heads are better than one. And [PAUSE]—Other than that—Let's see, the PDS—

> They really—As far as their relationship with the interns—You know, they are giving their interns—They're teaching them how to go about taking care of research, because as we know as a teacher you know—You know, the more research you do, the more data you have to back you up. And they're teaching us how to interpret all that, and that's—I think that's really good that they're doing that. As far as the—We're in the urban multi-culture program, . . . This probably provides a boost for the magnet program and I can really say that they've prepared us for that because they've really given us a good sense of what it is really like to be in an urban city school. There is a difference between being in this school and being at one in west [name of city deleted]. And they've really given the opportunity for us to see that, not only in this school but also in other schools.

Thus, although there have been a lot of success stories about magnet schools and PDSs, there are cases of failure that have to do with the very innovative nature of these programs. Taking a critical look at these challenges would lead to more successful PDSs and magnet programs. The benefits far out-weigh the challenges involved in these innovative approaches to teacher education and school improvement. This is why schools like DES with its juxtaposition of both programs deserves special attention especially that it seems to have overcome most of these challenges through the positive and hard working staff and teachers and all the other parties involved.

The school system has also spent some substantial amount of resources on the school and most of the people the author spoke to felt that although it was demanding to have both programs under one roof, they feel blessed that they have been offered such an opportunity and cannot come up with any disadvantages of either of the programs or the combination of them in their school. Although there is considerable literature on each of these two programs, there is hardly any on the co-existence of both at the same site and how they impact one another. This study has illustrated that these programs, as advantageous as they are, are also truly demanding and challenging and DES is always a busy place with a lot of different aspects of learning activities going on simultaneously.

Conclusion

The focus of this paper was educational reform efforts and attempts in one urban school – Downtown Elementary School (DES). The author discussed difficulties that were encountered in the process of the school housing two innovative reform programs, namely, magnet and professional development school (PDS) programs.

The paper addressed how best difference and social justice issues may be handled in concrete instances of particular contemporary reform programs in a real life situation. In an elaborate section on methodology, the author presents and discusses the methods of the data collection and the research process. The methods of data collection discussed include participant observation, interviewing, and documentary information. The reader is also informed about how the data was analyzed and interpreted. The major themes that emerged from the data analysis are: DES as

pedagogical community; praxis at its best: collaboration between different experts. These themes were discussed in detail with highlights of what goes on at DES and what ought to go on.

Thus, the author, in this paper, showed that DES is on the right track, in spite of a few glitches and is making modest strides as a unique school that juxtaposes two different reform programs – PDS and magnet school programs. These findings on DES were further discussed from the point of view of critical multiculturalism. Numerous quotations from interviews of affiliates of DES enrich the story of one urban school and its school improvement attempts. The story of an inner-city school, in real life situation, is presented. Further research is required on schools that house similar innovative school improvement programs, the dynamics of school reform programs and their impact on the school environment and the functioning of the school in general. The story of DES is one school's experience and generalizations will only be possible when more similar research analyses are made available. Future research endeavors of the author will focus on making this possible.

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Biographic Statement

Sidonia Jessie Alenuma comes from Duori, a small town in Ghana, Africa. She has a B.A. honors degree in Sociology and Russian Language from the University of Ghana, Legon. She left Ghana in 1989 and has since pursued further studies. Sidonia Alenuma has a Masters degree in International Development Studies from St. Mary's University, Halifax, Canada. She has been living in the US since 1992. In 2005, she graduated from the University of Tennessee, Knoxville, with a Ph.D. in Education. Her academic and research interests include social foundations of education, multicultural and anti-racist education theory and pedagogy, cultural studies in education, social justice, social difference, international development studies and sociology of education. Her most recent publications include "Race, Urban Schools, and Educational Reform (co-authored with Handel K. Wright), in Joe Kincheloe and Kecia Hayes (eds.). (2007). Teaching City Kids. Understanding and Appreciating Them. (pp.212-221). New York: Peter Lang;The Relevance and Rationale of an Ethnography of a Downtown Elementary School (DES) in Paris International Conference on Education, Economy and Society Proceedings. (2008); Inter-Subjectivity in Research: The case of an Ethnographic Study of an Inner-City School (asbract) in Hawaii International Conference on Education Proceedings (2009); Downtown Elementary School (DES): The Unique School that Juxtaposes both Magnet and Professional Development School Programs (asbtract) in Hawaii International Conference on Education (2009).

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Pre-service teachers' attitudes toward use of Vee diagrams in general physics laboratory

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Abstract

The purpose of this study is to determine pre-service teachers' attitudes toward use of Vee diagrams in general physics laboratory. The sample of the study consists of 29 (16 girls and 13 boys) freshmen students enrolling to elementary school science education program at one of the universities in Turkey. To gather the data of the study "Attitude Test toward the Use of Vee Diagram" consisting of 18 Likert type questions and "Open-Ended Questionnaire about the Use of Vee Diagram" including 8 open-ended questions are administered after laboratory applications with Vee diagrams. The data from both the quantitative and qualitative part of the study revealed that pre-service teachers have positive attitudes toward the use of vee diagrams in physics laboratory.

Keywords: *Pre-service teachers, Vee Diagrams, general physics laboratory*

Introduction

The Chinese saying "*I hear and I forget, I see and I remember, I do and I understand*" (Confucius) has often been misunderstood by educators. Educators have so much faith in laboratory work that they think that because the learners have done and seen something, they have therefore gone through meaningful learning and they will understand what is required to perform a given task. However it is very often that learners done practical work and yet not understood what they were doing or why they did

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what they did. Learners often find laboratory work frustrating as there is hardly any interplay between what they are thinking and what they are doing. Most often, it would be a case of hands-on but minds off affair.

Establishing relations between theoretical information and the daily life experiences, changing abstract information to concrete, and therefore learning by doing is only possible by using laboratories effectively in science courses. In traditional laboratories, students are directed by laboratory manuals including all the stepwise description of the experiments they are going to make. In this process, students repeat the steps, remembering theoretical knowledge, which has been learned in the course. In inquiry-based science laboratories, students are able to use and improve scientific process skills. Related to the hypothesis, that they established or were already given; they provide the materials, design the experiments, make observations and measurements, record data, bring up and interpret findings, and determine whether the hypothesis is valid or not. Finally they confirm or refute the hypothesis or they change and test it again. Than they add a new factual hypothesis or generalization to the knowledge related to the subject (Aydoğdu, 1993; Çilenti, 1985; Okan, 1993). Vee diagramming is one of the ways to make the laboratories inquiry based learning environments (Tatar, Korkmaz & Ören, 2007).

Vee diagramming

The Vee heuristic was originally designed by D. Bob Gowin in 1977 (Novak, 1989). Vee diagramming as an instructional tool is underpinned by Ausubel's (1968) theory of meaningful learning. Vee map has been used to guide students in their laboratory experience, to facilitate reflective thinking and learning, as they plan and conduct their own investigations (Novak & Gowin, 1984). To learn meaningfully, individuals must choose to relate new knowledge to relevant concepts and propositions they already know. The Vee diagram aids students in this linking process by acting as a metacognitive tool that requires students to make explicit connections between previously learned and newly acquired information (Alvarez & Risko, 2007).

Vee diagrams are less structured than conventional teaching methods. A Vee diagram consists of a V-shape separating theoretical/conceptual (thinking) from the methodological (doing) elements of inquiry. Both sides actively interact with each other through the use of the focus question(s) that directly relates to events and/or objects (Alvarez & Risko, 2007). The structure of the Vee diagram with its various labels and guiding questions provide a systematic guide for students to reason from the problem context (event/object) and given information (records) in identifying relevant principles, theorems, formal definitions and major rules (principles and concepts) which can guide the development of appropriate methods and procedures (transformations) to find an answer (knowledge claim) to the focus question. The arrow indicates that there is a continuous interplay

between the two sides as students reason through the various sections of the Vee (Afamasaga-Fuata'i, 2004).

Benefits of Vee diagramming

A review of the literature (Novak & Gowin, 1984; Wandersee, 1990) reveals that Vee diagramming has been found to be beneficial to the teaching-learning process in the following ways:

- Concepts are mapped thereby organizing meaning in a more coherent and comprehensive way,
- Existing knowledge structure is tapped into, misconceptions are picked up and gaps in knowledge are identified,
- It is believed that through Vee mapping learners will be more confident of themselves as they go through the learning process and they will feel good about themselves because what they are doing is more meaningful to them, and as such these learners are able to organize their thinking in a coherent way,
- Once learners are able to draw their own Vee maps, they are in a better position to reorganize new information using what they already know. This process is creative and idiosyncratic and requires that the understanding be expressed through a variety of ways of thinking and doing,
- A study conducted by Novak & Gowin (1984) showed that Vee diagramming helped learners do better in tests requiring problem solving skills and their performance increases with time as they get more experienced in using the Vee map (Novak & Gowin, 1984; Wandersee, 1990).
- Vee diagrams increase the communication skills of the students giving them opportunity of studying together (Luft, Tollefson & Roehrig, 2001).
- Since laboratory courses require preparation, it drives the students to research and it also provides a standard as an experiment report (Nakiboğlu & Meriç, 2000).

A review of literature revealed that while learning physics subjects, in cooperative learning environments, use of Vee diagrams caused students to participate in effective group work and interrogated what are their aims and what they should learn in experiment (Roth & Roychoudhury, 1993). Also previous studies showed that students' find Vee diagrams as instructive and a way of making conceptual learning and this application changed their attitudes toward science and their point of view to electricity concepts (Ramahlape, 2004). In her study "Use of Vee Maps in a College Science Laboratory", Lebowitz (1998) explained that 75% of students told they comprehend in a better way with Vee diagramming approach, while most of them did not prefer to use this approach. They stated that they did not like

design their own experiments but they like to reveal the findings and most of them would try Vee diagrams again and this would get easier with more study.

Present study

When the previous studies are examined it is observed that Vee diagrams, removes the problems students face during laboratory work (Nakiboğlu & Meriç, 2000; Roth & Browen, 1993), makes laboratory work more productive (Gurley-Dilger 1992; Nakiboğlu & Meriç, 2000), and contributes to forming meaningful learning environments in laboratories (Nakiboğlu, Benlikaya & Karakoç, 2001; Novak, 1990; Novak, 1998; Passmore, 1998). In respect of literature reviews, it is understood that Vee diagrams as a teaching strategy is widely used in science, especially chemistry and biology courses (Atılboz & Yakışan, 2003; Lebowitz, 1998; Nakiboğlu & Arık, 2005; Nakiboğlu, Benlikaya & Karakoç, 2001; Nakleh, 1994; Sarıkaya et al., 2004), while this strategy is not used often in physics courses (Ramahlape, 2004; Roth & Roychoudhury, 1993). From this point of view we hope this research will contribute to the literature.

With this respect the purpose of this study is to determine the pre-service teachers' attitudes towards the use of Vee diagrams in general physics laboratory courses and to take their views on these applications.

Methodology

Participants

Data of the study were obtained from 29 freshmen students (16 girls and 13 boys) enrolling to the elementary school science education program of one of the universities in Turkey. The participants of the study took General Physics Laboratory-I course for non-science majors in 2008–2009 fall semester.

Instruments

Attitude test toward the use of vee diagram (ATUVD). To determine students' attitudes toward the use of Vee diagram in laboratory an 18-item questionnaire developed by Demirtaş (2006) administered to the students at the end of the semester. The reliability of the questionnaire is calculated as .73. ATUVD includes 18 Likert type questions. For statements representing positive attitudes toward the Vee diagram, 5 points were assigned to "strongly agree", 4 to "agree", 3 to "undecided", 2 to "disagree", 1 to "strongly disagree". As for the statements representing a negative attitude, the score was reversed. For the interpretation of the data "strongly agree" and "agree" responses and "strongly disagree" and "disagree" responses were combined together.

Open-ended questionnaire about the use of vee diagram (QUVD). Besides the ATUVD, an open-ended questionnaire including 8 questions related with the use of Vee diagram was developed. Open-ended questions were prepared

in advance by considering the relevant literature (Ramahlape, 2004; Demirtaş, 2006). In a 30 minute period participants were asked to answer to the following questions:

- What are the differences between the laboratory studies done with Vee diagramming and the other laboratory studies?

  In terms of planning, practice, learning, evaluating.
- What are your duties and responsibilities in the laboratory studies, which are performed using Vee diagramming?
- What are the properties that you liked at most while preparing Vee diagrams?
- What are the properties that you did not like while preparing Vee diagrams?
- What do you think about benefits of Vee diagrams?
- Would you like to use Vee diagrams in the schools, which you will be appointed? Why?
- Did you observed any skills, which you or your mates developed while preparing Vee diagrams?

  From the point of view of learning, thinking skills (critical thinking, creative thinking, problem solving…), social aspects (participation, interaction, taking over responsibility, co-operation).
- What do you think about the contribution of Vee diagrams to science education?

Procedure

This research was performed with freshman pre-service teachers enrolling to elementary school science education. The participants attended General Physics Laboratory Course, for 9 weeks, totally 18 lessons. In this course, seven experiments named as analysis of an experiment, motion, acceleration (speeding up/slowing up), circular motion, Newton's laws of motion, motion on inclined plane, law of conservation of momentum were made. Experiments were conducted by using air tables.

In the first week, participants were divided in groups including three members- one of the groups was consisted of two pre-service teachers. The pre-service teachers were informed with presentations related to Vee diagrams prepared by researcher. After the presentations, groups were provided theoretical knowledge, materials, data gathered and results of an experiment named as "Analysis of an Experiment" and asked to prepare an example Vee diagram containing information about the experiment.

In the second week, pre-service teachers presented the Vee diagrams they prepared to their mates. Groups stated the deficiencies in the studies of each other. After presentations, groups were shown ideal Vee diagramming

of the experiment, which was prepared by researcher and asked to compare it with their diagrams and get rid of the deficiencies.

Beginning from the third week of research, pre-service teachers were asked to design the experiments, which were performed by group work in physics laboratory course, by using Vee diagrams. In the study, the Vee diagram format, which was modified by Afamasaga-Fuata'i (1998), was used.

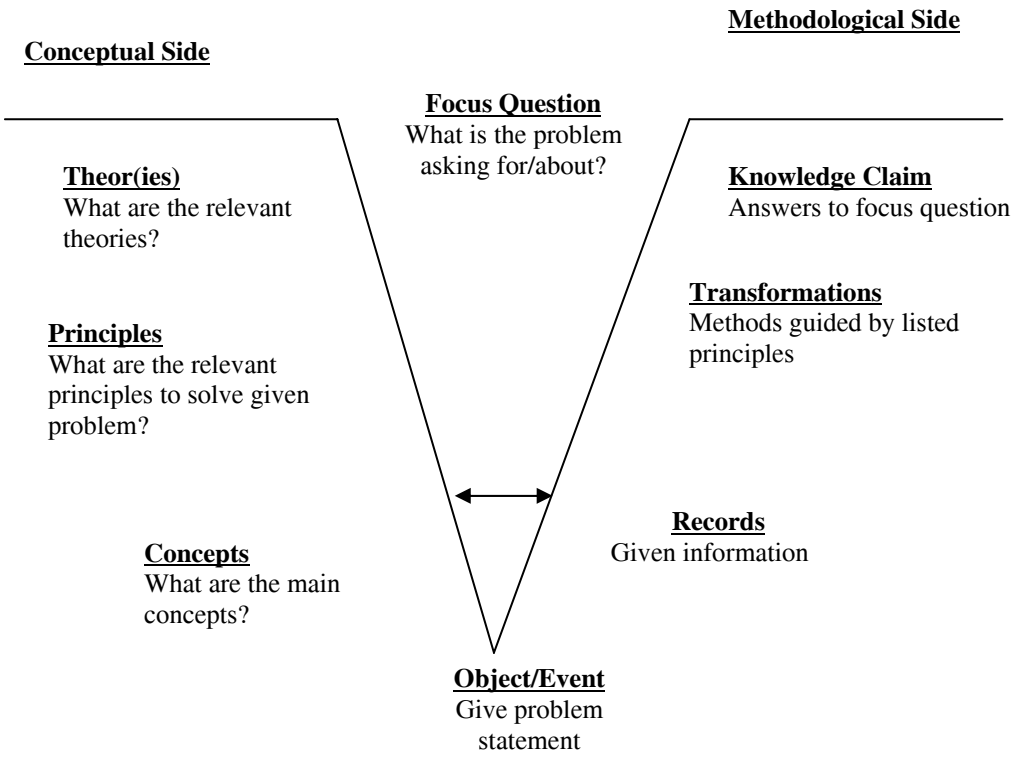


Figure 1 Afamasaga-Fuata'i (2004) modified from Novak & Gowin, 1984).

Every week pre-service teachers were informed about the subject they are going to study in the laboratory. They were asked to complete the conceptual side of Vee diagram before coming to laboratory. To complete the conceptual side they first determined a focus question. They then created a concept list that includes vocabulary relevant to the question under investigation. In the objects/events section, participants designed a procedure to examine the focus question. After determining the focus question, concepts and objects/events, pre-service teachers completed theories and principles part by conducting research. By this way, before coming to the laboratory pre-service teachers gained an extensive knowledge about the topic they are going to study. In the laboratory, participants conducted the experiments with their mates. They planned the experiments by themselves. The researchers acted as a guide throughout the course. After completing the experiment, pre-service teachers recorded

the data in the record section and included appropriate charts, graphs, and tables in the transformations section. Participants completed the Vee diagram by reporting conclusions and answering yhe focus questin in the knowledge claim section.

In the last week, ATUVD was applied in order to determine the attitudes of pre-service science teachers towards using Vee diagrams in general physics laboratory and QUVD was applied to take their views about Vee diagramming in laboratories.

Analysis

Statistical analysis included tabulation of frequency distribution of students' responses to the ATUVD. Scores were analyzed using the SPSS for Windows software. Also a simple categorization of the answers was made based on extracted key ideas from the QUVD. While analyzing qualitative data, content analysis method was used. Content analysis is defined as a systematic, iterable technique, with which the words of a text were summarized with smaller content categories (Büyüköztürk et al., 2008). Categories were determined coding raw data obtained from the replies of open-ended questions. To do this each response was read and the concepts within it were added to a summary sheet to build up a list of all concepts in all the responses. Categories for coding the concepts were then generated from this list. The analytical process then involved examining each response and using the categories to code the concepts present. Note that once a given category had made an appearance in a response, further occurrences of the same category in the response were not coded. In other words, the responses were coded for the *categories* present— each category could only occur once (even though its presence may have been supported by several elements). Since one response usually contained several categories, the number coded was far greater than the sample size.

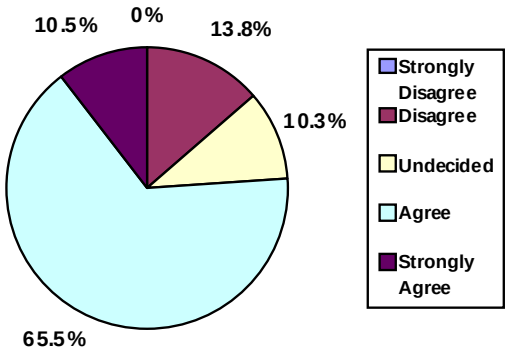
Results

Results of quantitative data

Considering the points will be obtained from ATUVD, if the highest total point is 90, this is the most positive attitudes' indicator; and if it is 18, that is the most negative attitudes' indicator. If all "undecided" replies are marked, 54 points can be obtained and this indicates neutral situation. In other word, over 54 points represents positive attitudes and the other ones represent negative attitudes. Therefore 21 pre-service teachers (72.4%), who have more than 54 points, show positive attitude, while 8 pre-service teachers (24.6%), who have less than 54 points, show negative attitude to using Vee diagrams.

Pre-service science teachers participating in the study reported the following perceptions about the use of Vee diagram in the lab:

Using Vee diagrams in the lab helps us to learn the subject meaningfully.



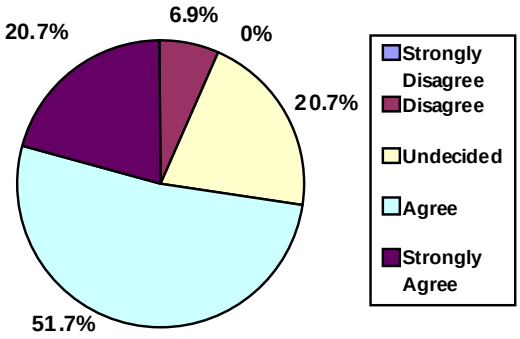
76% of the pre-service science teachers stated that Vee diagrams are helpful in learning the subject meaningfully. Besides, only 13.8% of them did not found Vee diagrams helpful in meaningful learning of the subject.

The replies of pre-service teachers, who participated in the study, to open-ended questions show similarity with the qualitative data. Some views of pre-service teachers are given below.

- "Vee diagrams help us to understand the subjects more easily."
- "Content is grouped under appropriate titles in Vee diagrams, it facilitates learning."
- "We gained skills that make able to save the knowledge in our minds in a better way, thanks to applications."
- "Vee diagrams ensured learning to be more effective and lasting. We learned concepts clearly with these diagrams."
- "Vee diagrams make the knowledge concrete and facilitate learning."
- "Thanks to Vee diagrams we can save knowledge in our minds in a systematic way."
- "Thanks to Vee diagrams we can connect the concepts to each other."

Using Vee diagrams in lab helps us to make a meaningful relationship between theoretical knowledge and experimental processes.

Although 6.9% of the sample disagree and 20.7% of them undecided, 72.4% of pre-service science teachers think that by using Vee diagram they can make a meaningful relationship between theoretical knowledge and experimental processes.



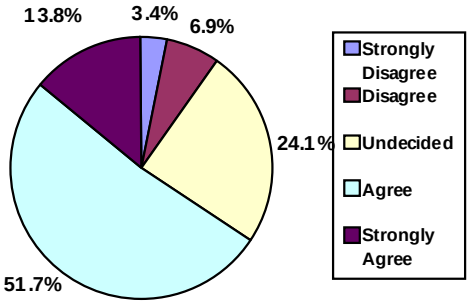
The replies of pre-service teachers to open-ended questions support the replies to the surveys. Some of them are:

- "Thanks to that theoretical knowledge and results of experiment was separated, I learned more."

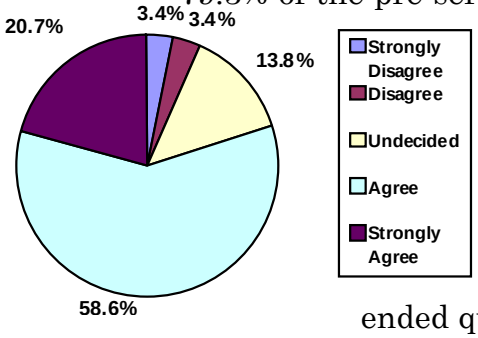
- "I could make contact between the experiment and theoretical knowledge thanks to Vee diagram."

Using Vee diagrams in lab helps us to realize our misunderstandings and to reorganize our knowledge.

75.8% of pre-service science teachers enrolling in the study stated that Vee diagrams helped them to realize their misunderstandings and reorganize their knowledge. Only, 10.3% of them disagree with this statement.



Using Vee diagrams is a way to get rid of rote learning

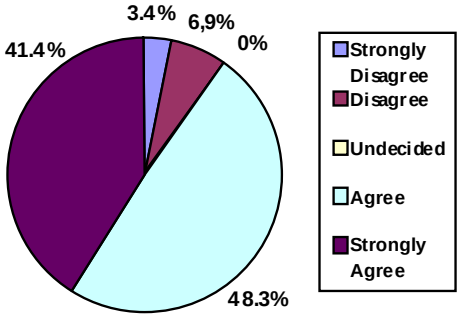


79.3% of the pre-service science teachers in the study stated that they believe that Vee diagrams is a way to get rid of rote learning. Only 6.8% of them disagreed with this statement.

In open-ended questions pre-service teachers frequently mentioned that Vee diagrams impede memorizing. Some of the replies of pre-service teachers to open-ended questions are:

- "It ensured me to inform about the subject and not to forget it with learning-based application instead of memorizing."
- "Science cannot be done with memorization. I think these diagrams can impede memorization in a certain degree."
- "Vee diagramming is a method that requires research. This property impedes memorization and ensures the things learned to be lastful."

Vee diagram lab applications enforced me to conduct a research.

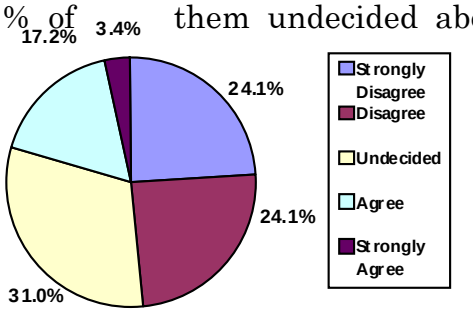


More than 80% of pre-service science teachers found Vee diagram applications enforcing to conduct a research. Only 10.3% of them did not agree with this statement.

The percent of the replies to this statement in ATUVD, which is related to that Vee diagrams directs to search, was encountered also in open-ended questions. Nearly all of the pre-service teachers stated that Vee diagrams directed them to research and they developed searching skills while preparing Vee diagrams.

Vee diagrams can be a very useful instructional strategy for physics laboratory.

48.2% of the sample disagreed and 31% of them undecided about using a Vee diagram is a useful instructional strategy for physics laboratory. 20.6% of pre-service science teachers agreed with this statement.



While replying open-ended questions, the pre-service teachers, who participated in the research, told that using, Vee diagram would not be a very good strategy considering the difficultness of preparing Vee diagrams. The pre-service teachers generally asserted that preparing Vee diagrams is difficult, requires time and labour.

Results of qualitative data

The explanations, which reveals the diversity of Vee diagram descriptions of pre-service teacher that participated in the research was turned into a table (Table 1). Table 1 includes description categories formed by researchers for each open-ended questions and sample examples of pre-service teachers descriptions. For example in the first question, the participants were asked the differencies between laboratory studies done with vee diagramming and other laboratory experiments in terms of planning. From the answers of the participants the researchers formed four categories; "organized", "planned", "in different form", "amusing". It can be concluded that pre-service teachers found vee diagrams more organized, planned, amusing than other laboratory experiments. It also can be concluded that pre-service teachers think that vee diagramming is in different form than the other laboratory experiments. For the first question sample answers from the participants are:

- "Vee diagram is an instructive study because it is organized any generally contains important parts of the subject."
- "It has a different plan and form apart from the other experiment reports."
- "We can see all stages of the experiment on a single sheet."

Table 1 Examples of pre-service teachers' answers to the questions in QUVD and categories formed (continued)

Question	Description Category	Examples of Pre- Service Teachers Descriptions
1	*In terms of planning;*	"Vee diagram is an instructive study because it is organized any generally contains important parts of the subject."
	Organized	
	Planned	"It has a different plan and form apart from the other experiment reports."
	In different form	
	Amusing	"We can see all stages of the experiment on a single sheet."
	In terms of practice;	"A little compelling method. It requires thinking and searching."
	Interesting	
	Useful	"Very difficult, boring and exhausting in practice"
	It requires labor	
	Difficult	"At first it was a little difficult but last practices was easy."
	Exhausting	"Study was difficult because it required labor."
	Ensures organized study	"It was positive because it ensures organized study."
	In terms of learning;	"I learn in a better way in comparison to other laboratory methods."
	Effective	
	Lastful	"Vee diagram ensured learning that was more lasting."
	Conveniable with visual intelligence	"We learned in a better way thanks to that we registered theoretical knowledge before the experiment and we registered the knowledge obtained after the experiment."
	Directs to searching	
		"Formally, it is a study that does not push student but attract them."
		"It requires more research."
	In terms of evaluation;	"Although our grades are low, we learned more."
	Fair	"Evaluation is fair."
	Grading was low	"Interpretation part is more complex than theoretical. Therefore our points are low if we cannot interpret our knowledge."
	Difficult	
2	To research	"....my principal duty and responsibility is searching."
	To take down data	
	To be active participant in experiment	"At first, to participate in experiment, to register data, interpret obtained data logically, to work with mates together to prepare Vee diagram."
	To complete theoretical part before experiment and to complete methodical after the	"Before the experiment completing the

	experiment To take responsibility To state our interpretations and views	theoretical part by conducting a research, then completing the methodological part after the experiment."
3	To draw V form of the diagram To present knowledge obtained in an organized form To think focus question To write our interpretations To prepare methodological part	"While preparing Vee diagrams, the stage that I liked at most is writing my interpretations. The works that I liked at most are evaluating the experiment, revealing my views." "I like V shape of the diagram" "the property that I like at most is taking down the information regularly." "…after finishing I can read it easily because it is in a certain order." "While preparing Vee diagram, my favorite property is thinking the focus question." "I like to prepare the methodological part of Vee diagrams, because in this part, I write the stage that I learned and applied in experiment. This helps me to learn more."
4	To interpret To write conceptual part It requires very much attention It takes time It is exhausting	"It takes a lot of time." "Because it is a study that requires attention, it is boring." "While preparing Vee diagram, the property that I dislike is interpretation." "It was difficult for me that titles were detailed in diagram and these were separated with slight lines." "To find focus question and knowledge assertions..."
5	To look at events with a wide perspective To be organized and planned Development of interpreting, researching, and resulting skills To strengthen communication skills	"It increased our thinking skills and directed us to search." "It taught me planned study, doing everything in time, doing research." "It taught us to present knowledge in an organized way." "It ensured to establish closer dialog with mates." "It helped me not to forget the lesson because it isnot based on memorization but based on learning." "It is very important that it presents more concrete, visual knowledge to us."

6	*Yes;* Amusing Effective It teaches thinking more. It teaches searching. It increases creativity and conceptual understanding.	*No;* Difficult Preparing students of Primary School Students to examinations is more important than this technique. Techniques that are more effective can be preferred.	"I will use. Because it is an amusing work, connects student to lesson and helps learning." "I think it is an effective learning technique." "Yes I would like to use it because it is not memorizer but directs to search. Thus it makes learning effective." "I would like to use it. Because Vee diagram increases creativeness, thinking, and design power." "Yes because I want students to develop their thinking skills."	"No, because I work as a primary school teacher, and that children cannot prepare these diagrams." "No because preparing Vee diagram is really a difficult and exhausting technique." "No because I am going to become primary school teacher. They should prepare to exams. They shouldnot occupy with this."
7	*In terms of learning;* To facilitate learning Comprehension subjects Active and lasting learning		"It increases learning." "Because it is towards to research, we were learning easily." "I learned actively and permanently."	
	In terms of thinking skills; Creative thinking Problem solving Interpretation Criticism		"With Vee diagrams, our interpretation skills developed. We found our errors and their reasons. Thus our problem solving skills developed." "It helps human to think in a better way and to look with various perspectives." "Some parts in Vee diagrams as knowledge assertions, interpretation, developed our thinking and critical thinking skills."	
	In terms of social aspects; Interaction in group Responsibility Co-operation Supporting friendship Supporting group work		"We became closer with our group mates, while nobody was talking each other at first." "We work with our group mates thanks to co-operation. We and our friends become closer."	

8	Understanding the lesson in a better way It changes rote learning to meaningful learning. Developing searching, thinking, and creative skills It facilitates learning.	"There cannot be memorization in science, and in my opinion, these diagrams can compel it." "Science education is towards to research, thinking, and creativeness. Vee diagram is towards to research. Therefore it contributes to science education's development." "In my opinion Vee diagram can be used in every sub-unit of science education. Increasing the permanency in mind, it facilitates learning. It contributes development in terms of social aspects and thinking skills." "In terms of thinking in a better way, increasing creative thinking, and establish relation-ship with classmates of thinking, it contributes."

Discussion and Conclusion

This study is conducted to determine pre-service science teachers' attitudes toward the use of Vee diagram in general physics laboratory. The study specifically contributed to the literature of the Vee diagramming as being an example of an application for the physics subjects. The findings gathered from both ATUVD and QUVD revealed that most of the pre-service teachers show positive attitudes and only few show negative attitudes toward the use of Vee diagramming. Participants showing negative attitudes found Vee diagramming as difficult to prepare, exhausting and time taking. For the pre-service science teachers enrolled in the study, this was the first time they have experienced the use of Vee diagram. The reasons for negative attitudes toward some aspects of using Vee diagram in the laboratory may be due to this situation. Pre-service teachers also stated that their Vee diagrams improved over time. It can be concluded that it took some time for pre-service teachers to get comfortable with this approach.

One of the most important finding of the study is; most of the pre-service teachers find Vee diagrams is a way for meaningful and effective learning. Pre-service teachers also found Vee diagramming more effective than traditional laboratory. This result shows consistency with the findings of the previous studies. Ramahlape (2004) stated that learners find Vee diagram informative, useful and facilitative to their conceptual understanding. Besides, Nakiboğlu & Meriç (2000) also reported that Vee diagram is helpful for conceptual understanding.

Findings of the present study also revealed that use of Vee diagrams in physics laboratory enforced pre-service teachers to conduct a research. Almost all participants, more than %80, stated that they had to conduct a detailed research to complete the Vee diagram. A wide variety of studies

reported that Vee diagrams caused students to conduct a research before the laboratory work (Atılboz & Yakışan, 2003; Nakiboğlu & Meriç, 2000; Roth & Browen, 1993).

Another result supported by both the quantitative and qualitative part of the study is; pre-service teachers found Vee diagramming useful because it helps to organize the knowledge in a structured manner because of its shape. Roth & Browen (1993) reported similar results in their study. They found that Vee diagramming helps organization of the knowledge since it draws main lines for both theoretical and practical knowledge.

The qualitative results of the present study supported that use of Vee diagramming improved pre-service teachers communication skills and social relationships with their group-mates. In the literature it is reported that in cooperative learning environments by use of Vee diagrams students participate in effective group work, by this way they found opportunity to improve their communication skills (Luft, Tollefson & Roehrig, 2001; Roth & Roychoudhury, 1993).

Based on the findings of the present study it can be stated that use of Vee diagrams in laboratories will provide several benefits to students such as, learning the content meaningfully and effectively, getting rid of rote learning, organizing their knowledge in a systematic way, developing their communication and research skills. For this reason use of Vee diagrams in science laboratories especially in physics laboratories strongly suggested to science educators in the education faculties of the universities and elementary and high school science teachers.

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Biographic Statements

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Investigation into the Perceptions of Students, Parents, and Teachers in China's Education Reform in Grades 7 and 8

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Abstract

The objective of this study was to examine how and to what extent Grades 7 and 8 teachers have implemented educational reforms in China that have had a direct impact on students, teachers, and parents. Major sources of data for this study were separate anonymous surveys for teachers, students, and parents. The study concluded that teachers and parents liked the reform initiatives. Most teachers were able to make changes that supported the reforms that include curriculum planning, teaching strategies, student evaluation, and special education. Teachers lacked in-service professional development and resources, especially in the rural areas. Teachers experienced difficulties that arose from the conflict between activity-based learning and exam-oriented systems. Parents and society need to change their mindsets of valuing exam achievements. Chinese educators are at the crossroads of whether the 'quality' movement is what the students and society need at this time or make changes in the high stakes examination. Leaders who want to implement change will have to pay attention to the voices of stakeholders.

Keywords: *Education reform, international education, middle school, activity-based learning, students, parents*

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Introduction

In the 1990s, large-scale education reform orchestrated by provincial, state, or national governments emerged around the world (Fullan, 2000). Whitty, Power, & Halpin (1998) studied reforms in Australia, England, New Zealand, Sweden, and the United States. Each country had its unique history and context, but all of the governments introduced policies that sought to reformulate the relationship among government, schools, and parents and develop closer links among objectives, programs, teaching, and student evaluation. Reform in education often demands changes in practice that challenge classroom teachers (Sowell, 2005; Fullan, 2000). Teachers initially report feeling overwhelmed and under-supported (Helsby, 1999; Lasky & Sutherland, 2000; Soucek & Pannu, 1996; Taylor, 1997; Ryan & Joong, 2005). These feelings result because changing the curriculum and resultant transitioning require teachers to alter the "specific blueprint for learning that is derived from the desired results—that is, content and performance standards" (Wiggins & McTighe, 2006, p. 6). Educational change increases tension as outcomes are measured and results are evaluated against standards. These changes can trigger resistance, debate, and passivity within teachers. Teachers do not resist change; they simply resist the transitions required to change because transitioning requires letting go of tried and true lesson plans, activities, and assessment modes in order to move into a new reality (Sowell, 2005). This is an important realization since teachers play key roles in reform as the agents of change who work directly with students (Clarke, 1997; Fullan, 2001). Fullan (1996) explains, "We need to first focus on how teachers make sense of the mandates and policies because there will be no educational reform until after teachers interpret the policies and make decisions based on their beliefs about the new demands" (p.12). We must also pay attention to the influence of reforms on students (Earl & Sutherland, 2003). Fullan & Stiegelbauer (1991) posed the question: "What would happen if we treated the student as someone whose opinion mattered in the introduction and implementation of reform in schools?" (p. 170). Levin (2000) claimed there must logically be a role for students in shaping the nature of schooling and hence of reform. What about the role of parents? Do their opinions matter? According to Ma, Lam & Wong (2006), in China, most parents have only one child in the family and "it is simply natural that they expect their only child to enjoy high quality education" (p. 210). The objective of this study, therefore, was to investigate the perceptions of teachers, students, and parents on the implementation of education reform in China. This research drew attention to reforms that had direct impact on teachers and, in turn, on students and parents. Topics studied include curriculum planning, teaching strategies, assessment and evaluation strategies, special education programs, high-stakes examination, sex and gender attitudes, and parental involvement.

China has, for a long time, adopted a centre-periphery curriculum development system. Virtually all schools follow the national curriculum (Ma et. al, 2006). For over 3000 years the curriculum demanded that students study the same material, memorizing texts and writing examinations in a manner that conformed to a prescribed style of written argumentation within the Confucian tradition (Armstrong, 2003). In 1999, the Chinese Department of Education introduced its 'quality education' reform. Similar policy and curriculum changes were made in England and Ontario, Canada. The *Outline of Reform on Curriculum in Basic Education* was published in 2001 and about half of the schools had already implemented the reform by 2003 (Liu & Qui, 2005). This reform required major changes in the schools. In curriculum content, student understanding and application of concepts were emphasized. In classrooms, special attention was aimed at each Chinese teacher's use of *varied* teaching and learning methods and to a *variety* of assessment modes (Liu & Qi, 2005). There was imminent pressure to cater to individual difference and, to promote generic skill development and high-order thinking instead of rote learning (Zhong & Cui, 2003). These changes required extensive transitioning as traditional modes of teaching, predominately lecturing, needed to be replaced by a *variety* of new modes of instruction which seemed to be the centrepiece of this educational reform effort. However, there has been little attention paid to the reform in China because of restricted access to data and language barriers.

Educational Significance

Teachers seldom implement a curriculum exactly as stated. They adopt a practical stance in deciding what to teach and how to teach it (Doyle & Ponder, 1976/77). Studying teachers' implementation can therefore help us understand the change process. Educational transitions involve human, personal, and political factors (Levin, 2000). Human factors include the attitudes and capacities of teachers, students, and parents. Personal factors include such elements as philosophy, values, and social and ethical orientations. Educational change efforts reflect political pressures such as government ethos, rationalization, flexibility, and budgetary support. Few large-scale reform studies concern China. This study sheds some light on the topic.

Leaders in China and other jurisdictions who want to implement change will have to pay attention to both human and personal factors that make a difference in successful implementation of school reforms. Findings and recommendations from this study will assist Department of Education officials, researchers, school administrators, teachers and parents in designing, adapting and implementing exemplar strategies on teaching, assessment, meeting the needs of students with special needs, and addressing issues such as gender equity, post-secondary opportunities and high-stakes examinations. This study also gives us insight into educational

reform experiences in culturally different context. Results will be useful to stakeholders and educators in China and globally.

Perspectives: China Education Reform "Quality Education"

In 1999, "quality education" reform was introduced in China. Major changes included the introduction of new curriculum, student-centred teaching and learning, and the development of special education. According to Aibe Chen from the Department of Education (as quoted in Kappa Delta Pi, 2002), Chinese classrooms are usually teacher-centred and very structured, and students are passive learners. Chinese education tends to emphasize book knowledge rather than practical ability. Because of government examinations, all teachers have the same syllabus and must follow it. China is trying to change the rigid situation through curriculum reform. Chen concluded that Chinese teachers must learn how to teach students in different ways and adapt some of the strategies used in the West, e.g., activity-based and group learning. As parts of the reform, new textbooks and syllabi have been developed, new assessment and evaluation strategies have been introduced, and more flexibility has been given to local schools. In-service workshops were offered to teachers. Chen concluded that the biggest challenge for teachers will be how to integrate new methods and yet maintain the strength of Chinese education with an emphasis on basic knowledge and skills. Chinese reform has another roadblock. Graduates at each level wishing to continue their education take an entrance examination into junior and senior secondary schools and colleges respectively. Zhang (2004) stated that the solid tradition of exam-oriented education had affected courses, teaching methods, teacher-student relationships, and the system of evaluation. Because reform conflicts with China's traditional school system of entrance examinations, it remains doubtful whether "quality education" efforts will be successful. Zhang (2004) also claimed that there was little research on "quality education" in China, and that it was very important to carry out a comprehensive research on reform efforts and the development of basic education.

Research Methods and Sources of Data

Major sources of data for this study were separate anonymous surveys for teachers, students, and parents. Surveys for the first two stakeholders were adapted and translated from surveys conducted in a study on teachers' and students' perceptions of Ontario education reform (Ryan & Joong, 2005). Sample questions in both surveys involved ranking (5-point Likert scale) of how often a teaching or evaluation strategy is used for a course. The parents' survey contained questions pertaining to the reform. All three surveys contained questions on high-stakes examinations, gender attitudes, and parental involvements. Questionnaires were field tested at a school to ensure that respondents understood and could complete all items as expected. This test-retest method meant that refinements were made to all elements within the survey, especially the questionnaire items, in order to

facilitate reading, interpretation, comprehension, and completion. The population for this study involved Grades 7 and 8 students in Guangxi Autonomous Region, a poor region in western China. Nine sample schools were selected representing large and small urban cities, remote areas, ethnicities, and varied SES (socio-economic status) backgrounds in the Region. At each sample school, 25 randomly selected teachers, 100 students, and their parents completed questionnaires. Students completed the questionnaires in class. Since the students and teachers questionnaires were used previously in studies in Canada (Ryan & Joong, 2005) and modified for this study, and all questionnaires were field tested, concerns with validity and reliability were addressed. Teachers and parents completed the questionnaires individually at their own time. Coding was performed by 24 undergraduate students working in pairs in China with periodic verifications by researchers. SPSS software was used to develop percentages for closed question responses. The open-ended items were scaled on a continuum from "strongly disagree" to "agree." These were also counted, and the frequencies of the responses were then converted to descriptive data such as percentages.

Results

Students' Voices

Of the 699 student respondents (a return rate of 78%), 56% were female and 44% were male students, and 57% were in Grade 9 and 43% in Grade 10. Ethnic groups were mostly Zhuong (66%), Han (14%), and Maonan (13%). The mean number of courses sample students took was 10 (SD=1.5). Compulsory courses include Chinese literature, English, Math, biology, history, geography, and politics. According to student respondents, in general, teacher talk was the most often used teaching method; individualized work, questioning, and discussions were sometimes used. Teachers rarely used group work, activities, and student presentations. When asked what the preferred teaching method was for each course, student respondents offered a variety of answers depending on the course. Preferred methods were teacher talk and individualized work in mathematics, experiments/demonstrations and teacher talk in science, group work and discussions in politics, teacher talk and activities in physical education, and teacher talk, listening to music, and musical activities in music. It is clear that students preferred a variety teaching strategies whereas teacher talk was the dominant strategy used by teachers. As for student evaluation, examination and tests were often used and class-work and homework were sometimes used.

Table 1 Correlation between Course Variables in Student Sample (n = 699)

	Course Interest	Course Difficulty	Course Quality	Classroom Behaviour
Course Achievement	0.548**	-0.323**	0.238**	-0.129**
Course Interest		-0.213**	0.331**	-0.094*
Course Difficulty			-0.110**	0.175**
Course Quality				-0.013

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Correlation between students' perceptions of course variables is shown in Table 1. There were significant correlations between course achievement and course interest (.548**), course difficulty (-.323**), course quality (.238**) and classroom behaviour (-.129**). This means that course performance was influenced by student behaviours, and the quality, interest, and easiness of the courses as perceived by students. There was a positive significant (.175**) correlation between course difficulty and classroom behaviour. More difficult courses meant worse behaviours because if students do not understand, they tend to act out or start chatting.

The mean numbers of hours spent on homework and studying were 1.96 hours and 1.62 respectively, giving a total of almost 3.5 hours per day. Tao (2003) had similar finding that in order to achieve good results, students were often overloaded with homework and had no time to develop their own interests.

When asked to whom they would go to discuss school marks, most would always/often go to friends/classmates or parents than teachers (see Figure 1). Similar results were obtained when asked to whom they would ask for help when having difficulties. In fact, two-thirds of the sample students would try to solve the problems themselves. On gender issues, three-quarters of the respondents claimed that there is no relationship between gender and ability and achievement. Over 85% of the student respondents claimed that their families would want them to go to university if they had the ability. However, about half of student respondents claimed that their families would have difficulties in sending them to universities for financial reasons. When asked in an open-ended question for their opinions on the examination system, about half of the respondents did not reply. Of those who responded, 41% said it's not good. On the issue of dating while in school, top responses were: to have normal friendships, focus on studies at this age, and date as long as it did not affect school work.

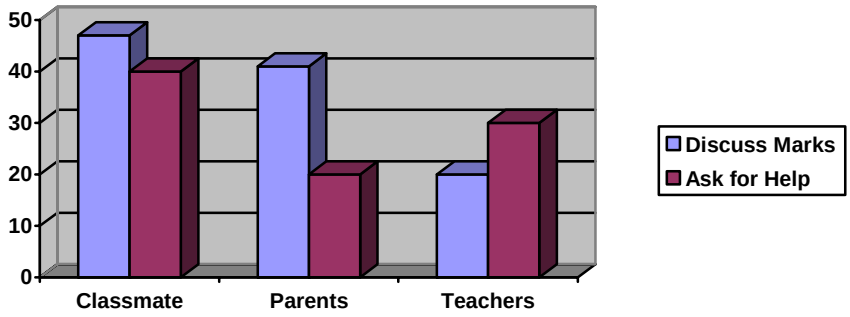

Figure 1 Whom do Students go to for Help

Parents' Voices

Of the 468 parent respondents (return rate of 52%), 70% were males and 30% were females. Their occupations were farmers (40%), small business owners (12%), professionals (11%), government employees (6%), teachers (4%), and unemployed/ retired (5%). The self-ranked SES of parents included high (2%), medium (41%), and low (57%). Educational backgrounds included primary (15%), junior secondary (40%), senior secondary (32%), technical college (7%), and university (5.6%).

Satisfaction with Curriculum and Teaching. Of the parent respondents, 49% were satisfied with the curriculum and teaching, 8% were not, and 43% had no opinion. When parents were asked in an open-ended question what areas need improvement, their top responses were: more practical and relevant courses (90 respondents); development of students' creativity, interest, and potential (43); more optional courses (40); reduction of the course load (35); improvement of teaching strategies (32); use of new resources/computer technology (21); and more disciplines (14).

Curriculum Reform. Parent respondents were given a list of reform initiatives in the schools and asked to rate their level of agreement on a 5-point Likert scale, "disagree" meant they chose 1 or 2, and "agree" meant 4 or 5. Results are in Table 2.

Table 2 Parents' Perceptions of Reform Initiatives (n = 468)

	Agree	*Disagree*
Parents and teachers support and encourage each other	69%	7%
School encourages parents to make suggestions for improvements	67%	8%
School administrators and parents support each other	65%	9%
School has enough resources to undergo new educational reforms	64%	9%
School goals are designed to improve curriculum and teaching	61%	6%
School finds the right balance between the number of changes	41%	13%

In general, about two-thirds of the parent respondents were satisfied with the reforms. It is clear that parental involvement was high in the sample schools.

Gender and Education and the Examination System. Over 62% of the parent respondents claimed that they would want girls to go to continue their studies is they have the abilities. However, almost 60% of parent respondents claimed that their families would have financial difficulties. When asked for their opinions on the examination system, 44% said exams should be kept, 34% suggested modifications, 4% suggested abandonment, and 16% had no opinion.

Teachers' Voices

The 154 teacher respondents (return rate of 68%) from nine sample schools completed the teacher questionnaires. Of these, 53% were female and 47% were male teachers, 62% teach Grade 7 and 38% teach Grade 8. The mean teaching experience was 12.5 years. Sixty-eight percent completed teachers college studies and 27% completed university studies (usually without teacher training). Teachers respondents were well distributed across subject areas with the top four being Chinese literature, Math, English, and science. Mean class size was 52, but teachers preferred smaller classes, with a mean of 44. Each teacher gave an SES spectrum estimate for his or her own school. The results were low (61%), middle (23%), and high (4.4%). These numbers are comparable to those of parents' own estimate above.

Education Reforms and Changes. The following were reform initiatives in the sample schools as perceived by the teacher respondents: school administration and management systems (65%); curriculum, teaching, and evaluation strategies (47%); and teacher professional development (37%).

Curriculum Planning, Teaching Strategies and Student Evaluation. On average, teacher respondents spent 26 hours each week preparing classes/marking. A majority (82%) used the new national curriculum materials. Most (64%) claimed that the curriculum was good while 4% claimed otherwise. Most claimed that they did not receive sufficient resources (73%) and professional development (78%). Ma, Lam, and Wong (2006) had similar findings in their study. Teacher respondents would like to receive more professional development in teaching methods (77%), classroom management (68%), curriculum development (66%), use of computers in the classroom (64%), and assessment strategies (44%). Teaching methods used most often included teacher talk (88% replied always or often), questioning (58%), discussions (48%), activities (43%), and individualized learning (41%). Teachers sometimes used group work (28%), experiment/demonstration (28%), and student presentations (17%). As for student evaluations, teachers often used traditional tests (78%) and exams (61%). They also used classwork (74%), homework (56%), and performance/essay (33%). When compared with students' responses to similar questions, it seems that teachers claimed that they used more

varieties of strategies than the students claimed. About one-third (37%) of the teacher respondents claimed there was little to no management problems and about twenty percent of the teacher respondents often experienced problems. They said that concentration time on task was between average (45%) and good (49%). Top reasons given for lost time included: lack of self-discipline by students, boredom with school, and lack of basics and/or interests. In general, 41% of teacher respondents were satisfied (versus 4% unsatisfied with 55% in-between) with their courses. Areas that needed improvement included curriculum and teaching strategies using student-centred learning, student-teacher relationships, student motivation, and use of technology.

Meeting the Needs of Students with Special Needs. Little more than one-third of the sample teachers answered this open-ended question. The percentage of "special" students in their classes was mostly under 10%. Most of the identified needs involved learning and behavioural difficulties. Provisions were made by teachers (42%), by the school (30%), and by the students/parents (28%). Teachers provided modified curriculum and extra individual help and for learners with learning difficulties, special seating arrangements for behavioural or "active" students, and enrichment for gifted students.

Teachers' Personal Opinions of Changes in Education and Students. Major changes in the reform involved changes in curriculum, textbooks, teaching strategies that included activity-based learning and group work, meeting the needs of special education students, and the use of information technology. Negative effects of the reform as perceived by sample teachers included reduction in student motivation, management issues, and deterioration of teacher-student relationships. Most teacher respondents offered positive comments about 'quality education reform' as changes reflected on societal changes. What follows are typical anecdotal comments made by sample teachers. One teacher said, "The government put more money in education, students pay less, and we have better classrooms and dormitories." Another said, "Schools have more facilities. More students have the chance to do experiments." However, a few claimed, "We don't have enough facilities, teaching reform is just all talk and no action." This is especially true in rural schools. One teacher described the change as, "in the past, students begged teachers for education, but now teachers are begging students to accept education." When compared with previous students, most teachers who responded felt that current students have weaker backgrounds, are less motivated, and have poorer attitudes. One rural teacher said, "Influenced by society, many countryside students' study attitudes are getting worse." Another said, "Most students in Grades 7 and 8 don't know how to study by themselves. Students don't have active attitudes towards studying. Their abilities are getting weaker." Yet another said, "Great change happened. Students don't have enough motivation and active attitude. Their abilities are worse. Some of them even make progress in

cheating." One teacher explained, "The Law of Compulsory Education changed students' attitudes to negative." Another major reason is the thought that, "education is useless" in our society, as job opportunities for the educated are few. This is especially true in rural areas. On the other hand, some students were more active and independent and were better at problem solving and critical thinking skills. One teacher said, "Students' study attitudes don't change. But their abilities change. They think faster and deeper." Quite a few respondents expressed the frustration mentioned by Tao (2003), that the exam-oriented teaching and learning had greatly restrained the creativity and potential of students. One teacher said, "There are few changes in education for all-round development, our teaching is still test-oriented." Another said, "Traditional test-oriented teaching is still very common. But teaching methods and teaching concepts have obviously changed." Quite a few teachers felt that the traditional exam system is in conflict with "quality education." However, as one teacher summed up, "the idea of 'Quality Education for All' has already been carried out."

Conclusions

This study drew attention to many educational reforms that have had direct impact on teachers and, in turn, on students and parents in China. The reforms include curriculum planning, teaching strategies, student evaluation, special education, and high-stakes examination. In general, about half of the teacher respondents and parents were satisfied with the reforms. Teachers indicated that there was inadequate support in terms of resources and professional development, especially in the two key areas of the current reforms: teaching methods and curriculum development. Resources in rural schools are scarce and teachers in rural schools have to go to cities for training (Ma et. al, 2006). Within teaching practices, most teachers claimed that they were using a variety of teaching methods, although teacher talk still dominated. Participant students indicated that their teachers used lecture and individualized learning methods predominantly. As for student evaluations, both sample teachers and students claimed that traditional tests and exams were used most often. Provisions were made by teacher respondents in meeting the needs of special needs students in mainstreamed classes. Teachers also pointed to the negative effects resulting from reforms or societal changes. These effects included low student motivation, management issues, and lack of respect for teachers. Results suggested that reforms had a direct impact on both students and teachers. On gender and equity issues, when asked if girls should have the ability to continue their studies, a majority of the respondents from all three groups claimed that they should. On dating, most parent and student respondents thought that it is normal for students to date as long as it does not interfere with schooling. On the issue of the examination system, only 38% of the parent and 41% of student respondents claimed that they should be modified or abandoned.

Discussion

Observations from the literature review on the initial stages of the reform and results of this study indicate that teachers in China have dedicated themselves to the education of students and have made the necessary changes in their curriculum, teaching strategies, and student evaluation methods to adopt most of the reforms. A majority of teachers in this study were satisfied with reforms yet struggled with transitioning. Teacher respondents had difficulty changing from their current teaching mode (predominantly teacher talk) and student evaluation modes (tests and examinations). Teachers' perspectives differed from students' perspectives; teachers claimed they were using more activity-based teaching and supporting a greater variety of learning modes than before yet students indicated teachers continued to employ predominately teacher talk and individualized work methods. Teachers requested more in-service training and resources. As for inclusion of students with special needs, provisions (accommodations/ modifications) were made by teacher respondents as necessary. Classroom management needs increased as new modes of teaching and transitioning created new situations for students to deviate from expected behaviours. Revisions in teacher training would have an impact on the implementation of new modes of teaching and classroom management and the absence of these is noted herein as a reform flaw. Most of the teacher respondents indicated the need for more training in teaching methods (activity-based and group learning) and curriculum development, classroom management and the use of computers in the classroom. Change in education requires stakeholder involvement, precise timing, and large amounts of support for in-service training (Ryan & Joong, 2005; Earl et. al, 2002). Without resources and in-service training, teachers have struggled to bring about a portion of the planned governmental changes in pedagogy and practices as outlined in the reforms. Some incremental change has been possible, yet teacher respondents in this study reported feeling overwhelmed and under-supported as the large-scale reforms took hold. Ryan & Joong (2005) had similar findings in their study of reforms in Ontario.

With the current examination system, teacher respondents claimed that there was little room for introducing activity-based learning and other experimentation. Huang (2004) was correct in saying examinations still guide teaching and learning in schools, and that China should reform the examination system to improve the quality of education. However, only 4% of the parent respondents suggested that the exam system should be abandoned and 34% suggested that it should be modified. Tao (2003) suggested that reforms involve not only the entire education system but also society. Parents and other citizens need to place less emphasis on examination achievements. Zhang (2004) agreed with Tao (2003) that the solid tradition of examination-oriented education has affected the curriculum, teaching methods, teacher-student relationships, and the system of evaluation and selection. Chinese teachers, educators, and educational leaders should decide whether the 'quality' movement is what students and society need at this time. Educational leaders in both China

and other jurisdictions with high-stakes examination systems who want to implement change will have to make similar decisions.

Recommendations

Aibe Chen from the Chinese Department of Education recommended that Chinese teachers integrate new methods and yet maintain an emphasis on basic knowledge and skills (Kappa Delta Pi Record, 2002). Huang (2004) recommended that teachers make favourable conditions for learning by experimentations. This includes making good use of resources and facilities, stimulating students' creative abilities, supporting cooperative learning, and using diversified evaluations. Sample teachers struggled to do this. In-service professional development and resources were lacking in rural areas and in some cases, poor performing schools. This hampered implementation. It is recommended that Department of Education officials and school leaders provide more funding for resources and in-service training, in particular, in rural schools where resources are less abundant and teachers are not as well trained as in urban areas. Ma, Lam and Wong (2006) had similar recommendations. Second, it is recommended that all teachers adopt, or continue to use, a variety of teaching methods, and reduce the amount of lecture time. Third, Department officials should "reform [the] examination system to improve the quality of education." (Huang, 2004) This recommendations was carried out since the the collection of data. For example, reform included local and provincial input of examination results as is done in some jurisdictions in the West.

Teachers play key roles in reform as the agents of change who work directly with students. Fullan (1996, p. 12) suggested that education reform depends on how teachers make sense of the mandates and policies. Reform needs widespread input, acceptance, and implementation if it is to have the desired effect. In the case of large-scale reform, the inclusion of the voices not only of teachers, but also of students and parents is crucial in the change process. Leaders who want to implement change will have to pay attention to the voices of stakeholders in deciding what to study as well as what to change. The school level factors that make a difference in the successful implementation of school reforms are the creation and attainment of a shared vision, the provision of necessary resources and professional development, and the establishment of a climate supportive of change.

Educational leaders and teachers in all jurisdictions should learn from the Chinese reform efforts. The Ministry of Education is paying attention to the stakeholders. It is also hoped that the findings and recommendations from this study will amplify the signals sent from similar studies concerning education reforms and assist stakeholders in designing curricula, in adapting exemplary teaching strategies, and in implementing quality assessment strategies.

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Biographical statements

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Attitude of teachers towards the inclusion of special needs children in general education classroom: the case of teachers in some selected schools in Nigeria

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Abstract

Attitudes about inclusion are extremely complex and vary from teacher to teacher and school to school. This article explores the attitudes of teachers about inclusion of special needs children in their secondary schools in general education. This study adopted a descriptive survey research design, with 60 teachers as participants from selected secondary schools in Oyo State, Nigeria. Four hypotheses were postulated at the significant level of .05. The instrument, a questionnaire with question items on demographic information like gender, marital status, professionalism and teaching experience has a general reliability coefficient alpha of .83. A t-test method of analysis was the main statistical method used to test the 4 generated hypotheses. The findings revealed that the attitude of male teachers is 39.4, while that of female teacher is 43.3, thus, the t-test analysis shows that the calculated t-test is 2.107, which is greater than the critical t (t=1.960). This implies that female teachers have more positive attitude towards the inclusion of special needs students than their male counterparts. Furthermore, the results reveal that significant difference exists between married and single teachers in their attitude towards special need students. And that professionally qualified teacher tends to have a more favourable attitude towards the inclusion of special need students than their non-professional qualified teachers. It was recommended that teachers should attend seminars and conferences to improve their knowledge about ways of practicing and accepting inclusion for a better tomorrow for our special needs children in Nigeria.

Keywords: *Inclusion, attitude, special needs children, general education*

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Introduction

Educational programmes for students with disabilities have traditionally been built upon the assumption that a variety of service delivery options needs to be available. Special education law, for example, stipulates that schools place students with disabilities in the Least Restrictive Environment (LRE). The notion of LRE assumes that there are alternatives along a continuum of restrictiveness, with residential institutions on one end of the continuum and regular classes on the other (Hallahan & Kauffman, 1998).

The Internal Institutive of Democracy and Electoral Assistance (IDEA) act for individuals with disabilities education requires that a continuum of placement options be available to meet the needs of students with disabilities. The law also requires that to the maximum extent appropriate, children with disabilities are educated with children who are not disabled and that special classes, separate schooling, or removal of children with disabilities from the regular environment occurs only when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be attained satisfactorily.

The past three decades have witnessed an international debate, particularly in developing countries such as Nigeria, on inclusive education. That is, the education of students with disabilities and non-disabled students in the same school and same class. The debate emanated from voices supporting and those criticizing inclusive education. The voices of those supporting inclusive education, such as Stainback and Stainback (1991), assert that inclusive education is the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving equal educational opportunities for all. Critics however have argued that inclusive schools will not adequately meet the needs of the disabled. They point out that disabled children will receive more attention and therapy in segregated schools rather than in inclusive schools. The researchers wonder if critics put into consideration the problem of stigmatization on the part of the disabled students, especially in some developing countries like Nigeria where the special needs children are yet to be accepted fully into the society. On this note, the researchers felt concerned about the attitude of teachers towards the inclusion of special needs children in general education. This motivates the conduct of this study at this particular time. It is expected that the outcome of the study will be beneficial to the stakeholders in Nigerian education to make constructive decision as regards segregated and inclusive schools in the country.

Literature review

Inclusion or inclusive education can be interpreted as the philosophy and practice for educating students with disabilities in general education settings (Bryant, Smith, & Bryant, 2008; Lipsky & Gartner, 1997; Rogers, 1993; Salend, 2001). The practice anchors on the notion that every child should be an equally valued member of the school culture. In other words, children with disabilities benefit from learning in a regular classroom, while their peers without disabilities gain from being exposed to children with diverse characteristics, talents and temperaments. According to (Ajuwon, 2008), supporters of inclusion use the term to refer to the commitment to educate each child, to the maximum extent appropriate, in the school and classroom he/she would otherwise attend. It involves bringing the ancillary services to the child, and requires only that the child will benefit from being in the class (rather than having to keep up with the other students). This is a salient aspect of inclusion, and requires a commitment to move essential resources to the child with a disability rather than placing the child in an isolated setting where services are located (Smith, 2007). For the child with a disability to benefit optimally from inclusion, it is imperative for general education teachers to be able to teach a wider array of children, including those with varying disabilities, and to collaborate and plan effectively with special educators.

Many countries (both developed and developing) have adopted and inculcated the policy of inclusion in their education policies. Nigeria for example, adopts the policy of inclusion in her National Policy on Education (1998). The policy stipulates the integration of special needs students into regular classrooms, and free education for exceptional students at all levels.

In practice however, it is only one state out of over thirty states that has actually started the implementation of the inclusive education at the primary school levels, other states of the federation in Nigeria are just starting up by creating a unit in each of the schools for their inclusive classrooms.

Studies however assert that the inclusive schools lack adequate technology equipment and incentives needed to provide special needs education in Nigeria. Studies on special education and inclusion suggest that the programs face many challenges. They demand special equipment, face inadequate specially trained teachers, lack incentives for available specially trained teachers and lack proper administration and supervision of management. These examples illustrate some of the challenges of the programme in Nigeria, thus, the researchers are interested in investigating the attitude of the teachers in the education of the special needs children in our general education.

Ajuwon (2008) also comments on the obvious benefits of the inclusive education paradigm, i.e. children are more likely to learn social skills in an environment that approximates to normal conditions of growth and

development. Children, during their formative years, develop language more effectively if they are with children who speak normally and appropriately (Mitchell & Brown, 1991). Often, it is gratifying that where school and community environments can be made physically and programmatically accessible, children and youth with physical disabilities can function more effectively than would otherwise be the case. It is also apparent that such modifications to the environment often enable others who do not have disabilities to access their environment even more readily (Ferguson, 1996). In recent years, the principle of universal design (Centre for Universal Design, 1997; Waksler, 1996) has evolved to describe physical, curricular and pedagogical changes that must be put in place to benefit people of all learning styles without adaptation or retrofitting. Failing to accommodate the environmental and accessibility needs of persons with disabilities in the society will inevitably inhibit their participation in educational, social, recreational and economic activities (Harkness & Groom, Jr., 1976; Steinfeld, Duncan, & Cardell, 1977). Therefore, architects, product designers, engineers and environmental design researchers should use their best judgment in early programming and design decisions.

However, UNESCO (1994) citing in Ajuwon (2008) emphasized that for inclusion to achieve its objectives, education practices must be child-centred. This means that teachers must find out where each of their students are academically, socially, and culturally to determine how best to facilitate learning (Gildner, 2001). A logical consequence of this realization is that these teachers will need to acquire skills in curriculum-based assessment, team teaching, mastery learning, assessing learning styles, cooperative learning strategies, facilitating peer tutoring, or social skills training. Given that children have varied learning styles or multiple intelligences (Gardner, 1991); both general and special education teachers must plan and coordinate classroom instruction to capitalize on each child's needs, interests and aptitudes.

The decade 1970–1980 could be rightly described as the golden period for the special needs children in Nigeria because, it was in the latter half of the decade that the Federal Military Government of Nigeria released the National Policy on Education in 1977. (In this document, issues relating to inclusive education and equality were elaborated, especially as it concerns the right to education of both the special needs children and the non-disabled children).

Prior to this period, the attitude of the society, government and citizens on special needs children had been highly negative and degrading, where the disabled were thought to be incapable of contributing anything meaningful to the society. One important aspect of the individual called teacher is "attitude". His attitude to himself, his work, his or her students and many other things depends on a number of variables which in turn influences his productivity.

> "These students need more assistance than I can give them. It isn't fair to take time away from the other students in my class who can really learn something".

The above judgment, stated by a teacher who may either be reacting to the new inclusion policy in his school, or dealing with students in his classroom who have identified disabilities, reflects a common stance of modern educators towards this paradigm shift in educational policy. His statement conveys a strong attitude about, first, the ability level of the students with special needs in his class, and second, an attitude about what effort he is willing to make for these students as a teacher. Both of these attitudes can have an enormous impact on teaching style and make the incorporation of traditionally segregated students into general education classroom a failed endeavour from the outset.

The essence of this teacher's views of his class is embodied in his classification of the students in the class into two groups, those who "can really learn something", and, implicitly, "those who cannot". This particular judgment is not original, but has been regularly iterated during the past and even present century by Nigerian teachers and administrators as a reason for denying education opportunities to the "in educable", due perhaps to their negative attitude towards the exceptional children.

In another similar judgment, a student was denied access to a school because he was classified as "mentally retarded" and thus unable to be taught. The Nigerian teachers of that period deemed providing schooling for this particular group of people a complete waste of time, simply because the disability made it impossible for the special needs children to fit into the standard system and learn with only the methods and supports offered to the "normal" children. Thus, many similar judgments by teachers have negatively influenced the education of the special needs students; thus creating a problem in their academics.

In a study carried out by Mba (1991) on the attitude of teachers towards the inclusion of hard-of-hearing students in general education classroom, it was revealed that the attitude of teachers indicated hesitancy of the teachers to accept the hard-of-hearing unless the communication barrier was obviated. Similarly, Ogbue, (1995) reported an interview conducted in Lagos State on the issue of inclusion of special need children in general education classroom. Her findings were that of the 200 regular primary school teachers interviewed, 60% of them rejected inclusion, while 35% of them would want inclusion provided they were adequately trained. The remaining 5% were undecided on the issue. Thus, many of all these negative attitudes will have an adverse effect on the education of the special needs children in Nigeria.

Malinen and Savolainen (2008), in a sample of 523 Chinese university students, administered a questionnaire to examine their attitudes towards the inclusion of children with disabilities into regular classrooms. Factor analysis, analysis of variance, t-test and correlations were used to assess the

respondents' general attitude towards inclusion, the factor structure of the attitudes, the relationship between demographic variables and the attitudes and the ratings of best educational environments for students with different kinds of disabilities. The analysis revealed that (a) the participants' average attitude towards inclusion was slightly negative; (b) four factors, named as social justice, meeting the special needs of the pupils with severe disabilities, quality of education and teachers' competence, were extracted (c) the most important background variable that explained the attitudes was the participants' major subject in the university; and (d) the ratings for the best educational environment for a student with a disability varied according to different types and levels of disability.

Elliot (2008) examined the relationship between teachers' attitudes toward the inclusion of children with mild to moderate mental disabilities in physical education settings and the amount of practice attempts performed and the levels of success attained by these students compared to their peers without disabilities. The findings suggested a relationship between teacher attitude toward inclusion and teacher effectiveness. Teachers with a positive attitude toward inclusion provided all of their students with significantly more practice attempts, at a higher level of success.

Researchers have attempted to discover the factors associated with the successful inclusion of students with disabilities. The role of teachers' attitudes has been studied. The majority of these studies in physical education have assumed that a positive attitude towards inclusion was necessary for the successful inclusion of children with disabilities into physical education (Rizzo & Vispoel, 1992; Tripp & Sherrill, 1991). These studies have examined the relationship between different types of attitudes and variables such as teacher age (Rizzo, 1985; Rizzo & Wright, 1988), gender (Patrick, 1987), teaching experience (Marston & Leslie, 1983), educational preparation (Rizzo & Vispoel, 1992), perceived teaching competence (Rizzo & Wright, 1988), and type and severity of student disability (Rizzo & Vispoel, 1991).

Several student and teacher related variables have been significantly and consistently linked with specific teacher attitudes toward inclusion (Rizzo & Vispoel, 1992). Student grade level and severity of disability have been found to influence teachers' attitudes toward inclusion. Specifically, students with disabilities were viewed more favourably in lower grade levels than in higher grade levels (Minner & Knutson, 1982; Rizzo, 1984), and children with less severe disabilities were viewed more favourably than those with more severe disabilities (Rizzo, 1984; Rizzo & Vispoel, 1991; Rizzo & Wright, 1987; Tripp, 1988).

A thorough review of literature revealed that limited studies have directly investigated the teachers' attitude towards inclusion of the special needs children in the general education particularly in the Nigerian context. Attitude research in education and physical education has grown

increasingly popular over the past twenty years (Folsom-Meek & Rizzo, 2002). This increase has been driven by the belief that the attitude of the teacher can have a direct influence on the successful inclusion of children with disabilities into regular classes (Rizzo & Vispoel, 1992). This investigation was a response to the need for empirical evidence regarding the teacher attitudes toward inclusion of special needs children in General education in Nigeria where there is limited or no data available on the subject matter. Basically therefore, we intend to investigate the attitude of teachers towards the inclusion of special needs students in general education classrooms, and the effects of variables such as gender, marital status, professionalism and teaching experience on their attitudes. The present study had the form of a pilot study which was the first stage of a large scale project with similar aims that addressed representative sample across Nigeria.

Method

The study adopts a pure descriptive approach. The sample was composed of 600 teachers who worked in general education school (regular schools) in Ibadan, Nigeria. Data on the demographic information of the study sample indicate that 73.8% were married, and 26.2% were single. The data further reveal that 74.8% of the participants were professional teachers, while 25.2% of them were not professionals. Considering teaching experience, participants with 1–9 years and 10 years and above were 50% respectively. The breakdown of the sample can be found in table 1 below:

Table 1 Demographic Data (N = 600)

Variable	N	%
Gender		
Male	224	37.3
Female	376	62.7
Marital Status		
Married	443	73.8
Single	157	26.2
Professionalism		
Professional Teachers	449	74.8
Non-Professional Teachers	151	25.2
Teaching Experience		
1 – 9 years	300	50
10 years and above	300	50

Hypotheses

Four hypotheses were postulated at the significant level of .05; they are:

H01: There is no significant difference between male and female teachers in their attitude towards the inclusion of special needs students in general education classrooms

H02: There is no significant difference between married and single teachers in their attitude towards the inclusion of special needs students in general education classrooms.
H03: There is no significant difference between professional qualified and non-professional qualified teachers in their attitude towards the inclusion of special needs and children in general education classrooms.
H04: There is no significant difference between teacher with less than 10 years of teaching experience and their counterparts with more than 10 years of teaching in their attitude towards the inclusion of special needs students in general education classrooms.

Instrument

Pilot interviews were carried out among a small group of Nigerian teachers, to generate items for the scale in assessing the attitudes of teachers towards the inclusion of special needs children in general education classrooms. The final scale consisted of 20 items which were accompanied by four-point Likert-type self-report rating scales ranging from "positive attitude" to "negative attitude" (1 to 4).

Predictor Variables

Personal and job demographics: Teachers were asked to fill in a detailed biographical questionnaire with information on gender, marital status, professionalism and teaching experience, all relating to their attitudes towards inclusion of the special needs children in the general education classrooms.

Procedure of Data Administration

The researcher administered the instrument in each of the selected schools after obtaining their mission to do so from the school authorities. In each of the schools, respondents were gathered in a class and were administered the questionnaire. The instructions were read to the respondents as regard the filling of the questionnaire. The items in the questionnaire were properly filled and returned after the exercise. There was no case of any loss of items as return rate was 89%.

Results

Hypothesis One

Hypothesis 1 states that, there is no significant difference between male and female teachers in their attitudes towards the inclusion of special need students in general education classrooms. The result of the hypothesis is presented on table 2 below:

Table 2 t-test Comparison of Male and Female Teachers on their Attitude towards the Inclusion of Special Need Students in General Education Classrooms

Groups	N	Mean	SD	df	Cal-t	T-value
Male	224	39.4	5.62	598	7.09	1.98*
Female	376	43.3	7.71			

* Significant at .05 level

The result on table 2 illustrates that the attitude of male teachers is 39.4, while that of female teachers is 43.3, the t-test analysis shows that the calculated t-test is 7.09, which is greater than the critical t (t=1.98) at .05 significant level.

Since the calculated t (2.107) is greater than the critical t (1.960) it means that the mean difference between male and female teachers is significant. And since the mean score of female teachers is higher than that of their male counterparts, it follows that the female teachers have more positive attitude towards the inclusion of special need students than their male counterparts.

It also follows that the difference in mean score is not by chance, but statistically significant. Hypothesis one is therefore rejected. Hence, there is a significant difference between male and female teachers in their attitude towards the inclusion of special need students in general education.

Hypothesis Two

Hypothesis 2 states that, "there is no significant difference between married and single teacher in their attitude towards the inclusion of special need students in general education classroom".

The result of hypothesis two is presented on table 3 below:

Table 3 t-test comparisons of married and single teachers in their attitude towards the inclusion of special need students in general education classrooms

Groups	N	Mean	SD	df	Cal-t	T-value
Married	443	40.30	6.52	598	2.46	1.98*
Single	157	45.11	7.58			

* Significant at .05 level

The result of table 3 shows the t-test analysis of the effect of marital status of teachers on their attitude towards the inclusion of need students in general education classrooms. The result indicates that the calculated t is 2.46; which when compared with the critical t (1.98) at .05 level; it was observed that, the calculated t is greater than the critical. This result implies that the calculated t is statistically significant at .05, thus, there is a significant difference between married and single teachers in their attitude towards special need students.

A further look at the table indicates that the mean score of the single (45.11) is higher than that of the married (40.30) suggesting that teachers

who are married have significantly more favourable attitude towards the inclusion of special need students when compared to the participants that are single. On the basis of this result, hypothesis two is rejected.

Hypothesis Three

Hypothesis three states that, "there is no significant difference between professional qualified and non-professional qualified teachers in their attitude towards the inclusion of special need students in general education classroom.

The result of hypothesis three is presented below.

Table 4 t-test comparisons of professional and non-professional teachers in their attitude towards the inclusion of special need students in general education classroom

Groups	N	Mean	SD	df	Cal-t	T-value
Professional	449	42.57	7.11	598	1.03	1.98*
Non-Professional	151	43.3	7.71			

* Not significant at .05 level

Table 4 shows that the mean attitude score of professional qualified teachers is 41.57, while that of the non-professional teachers is 42.09. This means that the professionally qualified teachers tend to have a more favourable attitude towards the inclusion of special need students than their non-professional qualified teachers.

The t-test analysis shows that the difference between them is not significant at .05 level, since the calculated t (1.03) is less than the critical t (1.98). The difference in the mean score therefore occurred by chance. Based on this, hypothesis three is accepted. Hence, there is no significant difference between professionally trained and non-professionally trained teachers on their attitude towards the inclusion of special need students in general education classrooms.

Hypothesis Four

Hypothesis four states that, "there is no significant difference between teachers with less than 10 years of teaching experience and their counterparts with more than 10 years of teaching experience in their attitudes towards the inclusion of special needs students in general education classrooms.

The result of hypothesis four is presented on table 5 below.

Table 5 t-test comparison of teacher with less than 10 years of teaching experience and their counterparts with more than 10 years of teaching experience in their attitude towards the inclusion of special need students in general education classrooms

Groups	N	Mean	SD	df	Cal-t	t-value
1 – 9 years	300	42.76	6.61	598	.92	1.98*
10 years and above	300	43.3	7.71			

* Not significant at .05 level

Table 5 shows that the attitude of teachers with less than 10 years teaching experience is 42.76 while that of their counterparts with 10 years and above is 40.56. The t-test analysis shows that the t. calculated is (.92) which is less than the critical t (1.98) at .05 significant level. Since the calculated t is less than the critical t, it means that the mean difference between the teachers in terms of teaching experience is not statistically significant. It follows that the mean difference occurred by chance. Therefore, hypothesis 4 is accepted; indicating that, there is no significant difference between teachers with less than 10 years teaching experience and their counterparts with 10 years teaching experience and above, in their attitude towards the inclusion of special need students in general education classrooms.

Discussion

This study examined the attitude of teachers towards the inclusion of children with special needs in the general education in Nigeria. The results of the various analyses on the study have revealed that female teachers have more positive attitude towards the inclusion of special needs students than their male counterparts. Furthermore, the results reveal that significant difference exists between married and single teachers in their attitude towards special need students. Professionally qualified teacher tends to have a more favourable attitude towards the inclusion of special need students than their non-professional qualified teachers. Moreover, teachers demonstrate similar attitude towards the inclusion of special needs children in general education irrespective of their years of experience.

In agreement with the findings in this study, adequate literature search has indicated negative attitude of teachers and much of this negativity results from lack of knowledge (Siegel, 1992; Houck, 1992; Philips, Allred, Brulle & Shank, 1990). There is considerable research that suggests that classroom teachers feel inadequate when children with special needs are included in a regular classroom (Monaham, Miller & Cronic, 1997). The positive attitude of female teachers towards the inclusion of special needs children demonstrated in this study may be due to the fact that females naturally have good tolerance compared to male. They are more calm and receptive than males. The reasons for the negative attitude of the male may be attributed to lack of training in special education. Generally, the findings by previous researchers that teacher' attitudes are more likely to be favourable if they have: (a) higher perceived teaching competence, (b) greater educational preparation, and (c) more experience in teaching students with disabilities (Rizzo & Vispoel, 1991; Rizzo & Wright, 1988; Rizzo, 1985; Marston & Leslie, 1983; Rizzo & Vispoel, 1991) lend credence to the findings on this study. However, the gender difference reveal in this study contradicts earlier findings by researchers such as (Patrick, 1987; Rizzo & Vispoel, 1991; Rizzo & Wright, 1988). This contradiction may be due to the timing i.e. the interval between those studies and this present one. During the time interval, lots of changes have taking place which might account for the differences. Part of these changes is the ongoing struggle to

eradicate gender in-equality which is one of the major themes of globalization that the whole world is targeting.

The significance of special education of future teachers continues to grow along with teaching requirements beyond the traditional classroom. Thus, teachers are expected to integrate many programmes into the lives of the children they teach in order to accommodate the special needs children within the general education classrooms.

In addition, in a study carried out by Ivey (2002) general education teachers showed a significant increase in their belief that there is resistance toward inclusion. This is in agreement with the finding in this study. Also, there have been some studies (e.g. Wikzenshi, 1994; Jamieson, 1984; Berryman & Berryman, 1981) which indicated the negative attitudes of general education teachers towards inclusion based on issues of experience on the job. This is also in line with the findings of this particular study.

Moreover, literature has stressed the importance of individual variables (especially as it affects teachers of the special need children). Thus, personality traits, demographic characteristics, the ability to establish and maintain supportive social networks, and the ability to cope have all been recognized as key mediators of the stressor's impact on the individual (a good example of teachers and the special needs children.

Conclusions

Inclusion agendas should be concerned with identifying all forms of exclusion and barriers to learning within national policies, cultures, educational institution and communities with a view to remove them. Also, it has implications for redirecting teachers' attitudes towards the inclusion of special needs students in regular educational programmes positively. Thus, successful inclusion for special needs children in regular classrooms entails the positive attitudes of teachers through a systematic programming within the classroom.

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Biographic statements

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Specifics for generalists: Teaching elementary physical education

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Abstract

Quality physical education offered at the elementary school level is critical for children to understand and develop healthy living. In most countries, physical education is taught by a generalist teacher (i.e., an individual who has not undertaken extensive training in physical education) particularly at the elementary school level. Inadequate and inappropriate preparation has been identified as a major barrier for an elementary generalist to develop and implement a quality physical education program. The purpose of this paper is to identify and discuss helpful strategies used to employ each fundamental component of a quality physical education program and is intended for a generalist audience. More specifically, the paper will explore (a) the (dis)advantage of teaching physical education as a generalist teacher; (b) the ability of physical education to address the whole child; (c) the confusion surrounding physical education and physical activity; and (d) the strategies of a successful physical educator.

Keywords: *elementary, physical education, generalist, teacher, physical literacy*

Introduction

Physical education is crucial to the promotion of positive development in school-aged children and is particularly important today as societies within the world are plagued by the increasing occurrence of childhood obesity and illnesses linked to physical inactivity (Mandigo, 2005; Public Health Agency of Canada, 2008a; Starky, 2005; World Health Organization, 2004). Children of today are the first in history to have a shorter life expectancy

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than the current adult populace (Grantham, 2007); yet, despite the alarming deterioration to childhood health documented by research and marketed by the media, society continues to ignore the less than favourable physical education programming offered at the elementary level, which – in most countries – is all too frequently delivered by a generalist teacher (DeCorby, Halas, Dixon, Wintrup, & Janzen, 2005; Hardman & Marshall, 2005). It is critical to offer physical education the elementary school level to ensure children develop the necessary knowledge, fundamental skill set, and attitude needed to cultivate a healthy lifestyle at an early age thereby providing them with healthy practices which can later be refined and carried through to adulthood (Kirk, 2005). However, despite the increasing demand to address health within a school setting through the medium of physical education, many generalist teachers are reluctant to teach physical education courses (Hastie & Martin, 2006). As a further challenge, inadequate and inappropriate preparation has been identified as a major barrier for an elementary generalist to produce a quality physical education program as prescribed by the curriculum (CAHPERD, 2006; Deacon, 2001; Janzen, Halas, Dixon, DeCorby, Booke, & Wintrup, 2003; Tremblay, Pella, & Taylor, 1996). This paper is intended to identify and discuss the strategies of an effective physical educator in the hope that it may guide generalist teachers on their journey towards strengthening the current physical education programs they offer.

(Dis)Advantages of Teaching Physical Education as a Generalist Teacher

The first and most obvious detriment for any generalist teacher stems from their educational background, or the lack thereof. For example, an individual would not be deemed qualified to teach music based on his or her appreciation for classical music, and the same holds true for any other specialized subject such as visual arts, drama, French – or physical education. Just because a teacher may enjoy playing golf does not deem him or her qualified to teach the subject; a deeper understanding of the subject elicits more meaningful instruction (Lu & De Lisio, *in press*). Unlike a specialist teacher, a generalist will not have undergone intensive physical education teacher education (PETE) and, as a result of their limited training and exposure to this unique learning environment, they will likely lack a certain sense of self-assurance and embodied understanding of physical education.

The realization of this shortcoming may cause some teachers to experience a sense of anxiety toward the subject which may further reflect upon their individual experiences in a physical education environment. Not everyone is proficient at being physically active and not everyone gains a sense of enjoyment from any form of physical exertion; for those who do not, the experience of teaching physical education will be less appealing. That being said, it is important that people within the field who do identify as specialists do not foster the athletic stereotype; i.e., that in order to teach physical education you must be an athlete. Such stereotypical statements

are completely invalid, as mere physical competence does not guarantee an individual will be qualified to teach a physical education curriculum. In fact, witnessing a teacher's struggle to become physically fit and/or the witnessing a level of unease displayed by a teacher in a physical setting can foster a sense of security amongst the class (Lu, 2004), as it levels the playing field somewhat between teacher and student. A student should never feel isolated by his or her ability or inability and a quality physical education program will endeavour to avoid this. A teacher capable of instilling a love for healthy active living, regardless of their own physical ability, will surely be a successful instructor.

Despite the lack of expertise displayed by generalist teachers in a physical education setting, it is likely that generalists will possess a more comprehensive understanding of grade-related subject material and student ability than their specialist counterparts. Since a generalist teacher is with their class for the duration of the school day, she/he is better able to gain a holistic understanding of every child in the group. Consequently, she/he can easily integrate another subject and create an interdisciplinary approach to classroom instruction. As a result, a generalist teacher may be in the best position to teach all subjects to the whole child – a situation which could not be paralleled by a specialist. Another benefit to teaching physical education as a generalist is the opportunity to observe each student in a different and unique setting, as children may become more inclined to display an alternative personality while at ease and engaged in physical activity. Thus, as stated above, a generalist teacher can still effectively administer a quality physical education program as long as the overall goal (i.e., to instil the necessary knowledge, fundamental skill set, and attitude to live healthfully) is maintained.

Physical Education and the Connection to the Whole Child – Developing an Appreciation for the Subject

Physical education is, quite literally, education through the physical (e.g., bodily movement). A quality physical education program will provide a variety of well-planned physical activities for all children while acknowledging the importance of developing a physically literate individual capable of sustaining an active and healthy lifestyle. There are three learning domains covered in physical education: psychomotor, cognitive, and affective. It is through a positive movement experience that a physical educator can address the development of the whole child, as proposed by Clark Hetherington nearly a century ago. The approach of educating through the physical versus education of the physical (Hetherington, 1910) did more than merely address the physical aspect of physical education: it also highlighted the need to adapt physical education and optimize the capacity of the curriculum in the development of an individual through their mind, body, and soul as one integrated whole (Lodewyk, Lu, & Kentel, in press).

Physical education is an academic subject which is formulated towards students' learning and fostering of physical literacy (Whitehead, 2007). As part of a whole child's literacy development, physical literacy entails not only learning about movement but also learning through movement (Kentel & Dobson, 2007). Physical literacy is acknowledged as a core element in achieving the overarching goal promoted by a quality physical education program and, while physical literacy is not reserved solely for physical education, it must represent the overall goal of every physical education class. It is important to note that the concept of physical literacy is sometimes referenced in relevant literature as "movement literacy" (despite the slight variance in definition, both terms suggest a similar concept) and the increasing popularity of physical literacy both in academia and curricular documentation provoked its inclusion in this paper. An additional benefit of physical education is that it can promote literacy across the curriculum and elicit an alternative approach to educating children as opposed to the traditional method of teaching each subject in isolation: by integrating instruction from another subject area, a generalist may play to their expertise while allowing the class to apply their learning to another setting. To suggest a few possibilities, a student could collaborate with a group to create a vocabulary term with their bodies, or classes could explore a cultural dance to add to a discussion involving cultural identity. With a little creativity, mathematics and science – or any other school subject – could also be incorporated into the development of a personal fitness plan.

In addition to the unique possibilities presented by the physical education curriculum, it also requires that the teacher instruct a class in a unique environment; i.e., in a large gymnasium or out of doors. The space employed will reflect the use of equipment (e.g., various balls, bean bags, racquets, mats, poles, nets, etc.) and the need to move safely. Another distinctive feature of physical education is that it demands immediate and open instruction and correction of students that is nearly impossible to conduct in a discreet manner; consequently, student success and failure is publicly displayed. A teacher must therefore be sensitive to a child's self-esteem/confidence and foster a high success rate for the entire class. In addition, general feedback should largely remain positive while constructive feedback should be offered in private. The visible aspect of gender diversity also contributes to the uniqueness of teaching physical education, and the older the student, the more likely it is that differences in performance between the sexes will be observed. In conjunction with the differences in appearance and motor control, variances in activity preference will also become more prominent as students age. It is important that a teacher be open to gender diversity and invite the input of their class (e.g., freedom to choose activity/evaluation technique, etc.) wherever appropriate.

Relationship Between Physical Education and Physical Activity

The difference between physical education and physical activity is largely unclear to specialist teachers and thus, not surprisingly, it is also misused

amongst the generalist population and general public (AAHPERD, 2008; Lu & De Lisio, in press). Many people tend to think physical education is physical activity and that to teach physical education is to present no more than a cluster of physical activities. This common misconception can give rise to the inferior status of physical education within an academic domain (Fishburne & Hickson, 2005; Lu & De Lisio, *in press*).

From a conceptual perspective, physical education is not merely any physical activity or sport. It is an academic subject that must utilize physical activity as a vehicle or medium to achieve an educational goal (Lu & De Lisio, 2008). As an integral part of education, physical education will continue to contribute to the total growth and development of all children primarily through movement (Pangrazi & Gibbons, 2008). In contrast, physical activity refers to any bodily movement produced by skeletal muscles that can result in an expenditure of energy (Pangrazi & Gibbons, 2008), while sport is a type of activity that is usually planned, structured, and governed by a set of rules or customs, and often engaged in competitively. Physical activities may also include cleaning house (e.g., mopping the floor, vacuuming), yard and garden work (e.g., raking leaves, mowing lawns, shovelling snow, cutting wood), climbing stairs, carrying groceries, walking a dog, riding a bike, playing sports (Public Health Agency of Canada, 2008b) – none of which are necessarily considered to be educational (Lu & De Lisio, 2008).

A physical educator, regardless of their generalist or specialist status, must be certified to teach children within the public school setting. On the other hand, coaches and athletes are not eligible and must not be allowed to teach physical education as they do not have the appropriate teacher certification, regardless of the amount of sport or physical activities in which they engage. They simply do not have the accreditation required of every member within the teaching profession. Another difference between these two concepts is that teaching and learning must be assessed in physical education while neither teaching nor learning is required in physical activity. To conclude, it is impossible to teach physical education without using any physical activities whereas it is possible to conduct physical activities without any education.

Confronting the confusion between each concept is extremely important. In order to maintain an active healthy lifestyle, an individual will need the necessary foundation as fostered through a quality physical education program. Although physical activities are an important component of every physical education class, an activity or game cannot be the only (or most important) part. The term "gym teacher" does not accurately depict an individual capable of successfully fostering student learning and can further lend to the confusion surrounding physical education and physical activity. This conventional term has become a misnomer for a person that teaches a random assortment of physical activities without much consideration for the overall goal of physical education.

What to Teach? Understanding the Content of Physical Education

Over its years of development, physical education has become a solidified subject based on substantial research evidence (Rink, 2006; Siedentop & Tannehill, 2000). The curricular content of physical education has been shared across the world, particularly throughout Western countries. A simplified framework for the physical education curriculum is outlined below. It will detail the following: (1) the overall goal of physical education; (2) two types of fitness; (3) three fundamental movement skills; (4) four movement concepts; and (5) five categories of physical activity.

1. The goal of physical education is to assist every child in the development of a healthy lifestyle (Pangrazi & Gibbons, 2008; Rink, 2006). More specifically, CAHPERD (2005) highlights the importance of physical education in assisting students to: (a) acquire skills that enable them to perform a variety of physical activities; (b) acquire skills that will help them become physically fit; (c) participate regularly in physical activity because they find it enjoyable and exhilarating; (d) understand and value physical activity; (e) understand that physical activity can support self-expression and provide for social interaction with others; (f) display responsible and social behaviour during physical activity; and (g) display an understanding of and a respect for all people during physical activity.

2. Fitness in physical education usually refers to physical fitness – a set of attributes that people have or achieve relating to their ability to perform daily activities and physical activities (Ratliffe & Ratliffe, 1994; Rink, 2006). In particular, two types of fitness have been identified: health-related (e.g., cardiovascular endurance, muscular strength and endurance, flexibility, body composition) and skill-related (e.g., agility, coordination, balance, speed, power). For more than a decade, health-related fitness has been the overriding focus for physical education. However, more recently, the use of fitness testing in the assessment of physical education has been critically examined (Naughton, Carlson, & Greene, 2006). The overall goal of physical education programs is not to improve fitness but rather to instil a love for fitness (and other physical activities) which should transcend throughout a lifetime; imposing fitness testing may work against this goal and could hinder a child's love for healthy active living by exposing him/her to a potentially negative experience in physical education class. Both health-related and skill-related fitness can now more frequently be taught in relation to the five categories of physical activity (see Table 1). For example, individual physical activities (e.g., jogging, cycling, martial arts, yoga, etc.) provide an alternative venue to introduce an entire range of physical activities. While introducing a particular activity, a teacher may wish to target an overriding fitness concept; that is, the FITT (frequency, intensity, time, and type) principle. Depending on the type of activity, the frequency, intensity and time will vary. This principle is one approach by which a teacher can relate or discuss any type of physical activity with any class.

3. The development of fundamental movement skills is central at an early elementary stage, and should be refined throughout childhood in order to build a strong foundation of movement capabilities which may (or may not) be transferred to a more competitive setting (Kirchner & Fishburne, 1998). The three fundamental movement categories are:

a) Locomotor/travelling skills involving moving the body in any direction from one point to another (e.g., walking, running, hopping, skipping, galloping/sliding, leaping, chasing, fleeing, dodging)

b) Manipulative skills involving handling and controlling objects with an implement or body part:

   Propulsion: throwing, batting, kicking, punting, striking, dribbling
   Receipt: catching, collecting, volleying

c) Stability skills involving the body balancing either in one place (static) or while in motion (dynamic) (e.g., bending, stretching, twisting, turning, rolling, balancing, weight transferring, curl-up, jump landing, pushing, pulling, rocking, swaying)

Table 1 Categories of physical activity

Alternative Environment	Dance	Gymnastics	Games	Individual PA
Water-oriented Aquatics • water adjustment • survival techniques • stroke development • water games Water-based • canoeing • rowing • sailing • kayaking Land-oriented • walking • cycling • hiking • horseback riding • camping • orienteering • wall climbing • snowshoeing • skiing • snowboarding • skating Creative (Playgrounds) • climbing • balancing • travelling	Rhythmic • singing and • clapping games • aerobic • with/without equipment Cultural • folk dance • square dance • Métis jigging • First Nations round dance • Métis reel Contemporary • line • jive • partner • country and • western • percussive Creative • interpretive dance • modern dance	Thematic • balance • shape • travel Rhythmic • hoop • ball • ribbon • scarf • rope • sticks • balls Acrobatic • tumbling • pyramids Competitive /artistic • floor exercise • vault box Creative • sequence • development	Simple • schoolyard • backyard • chasing • throwing • kicking Creative • novel • initiative tasks • cooperative • parachute activities Cultural • dragon boat • eagle-chicken Combative • wrestling • fencing Fielding/batting • baseball • softball • cricket Invasion/territory • soccer • basketball • hockey Net and Wall • volleyball • badminton • table tennis Target • bocce • bowling • curling • golf	Individual Manipulative • juggling • skipping Fitness • jogging • running • cycling • circuits Mindfulness • martial arts • meditative (e.g., yoga, qi gong) Track and Field • running events • jumping events • throwing events

4. The four movement concepts are a system and language for analyzing, understanding, interpreting, and notating all forms of human movement. This framework was developed from Laban Movement Analysis (LMA). LMA has been widely used in the areas of dance, athletics, therapy, and physical education. A movement concept should be taught with a developmentally appropriate activity and progression in mind. Forming the

core of a quality physical education program for an elementary audience, each movement concept will involve the following (Buschner, 1994; Langton, 2007):

a) Body awareness (WHAT):
   - Shapes (e.g., long/short, wide/narrow, straight/twisted, stretched/curled, symmetrical/asymmetrical)
   - Balance (e.g., weight bearing): different parts of body
   - Transfer of body weight: between two body parts
   - Flight (e.g., running, jumping up or down, hanging)

b) Space awareness (WHERE):
   - General/personal
   - Direction (e.g., straight, zigzag, circular, curved, forward, backward, sideward, upward, downward)
   - Level (e.g., low, high, in between)
   - Pathway (e.g., square, diamond, triangle, circle, figure eight)
   - Plane (e.g., longitudinal, horizontal, anterior-posterior)

c) Effort (HOW):
   - Time/speed (e.g., accelerating, decelerating, constant rhythm)
   - Force (e.g., light heavy, strong, weak, rough, gentle)
   - Flow (e.g., interrupted/bound, sustained/free)

d) Relationship (WITH WHO/WHAT):
   - far-near
   - above-below
   - over-under
   - front-behind
   - on-off
   - together-apart

In teaching a movement concept, an educator should acknowledge the important role they themselves play in the process: a concept will not simply be acquired through the performance of an activity alone; rather, a movement concept will emerge from an activity only with the careful guidance and surveillance of a physical educator.

5). When selecting physical activities for teaching, there are five major categories (see Table 1) for consideration (Alberta Education, 2000; CAHPERD, n.d.). A quality physical education program should address all five categories of physical activity. By introducing a variety of physical activities in each category, a teacher will be more capable of developing an extensive activity repertoire for her/his class and fostering lifelong participation.

The current trend in physical education does not push for or support a system which will cater to a single physical activity (i.e., a tennis or volleyball); rather, every category is addressed with a varied weight distribution of each category depending upon the intended learning outcome

(expectation or objective). The expertise of the teacher; the class dynamic; individual school traditions; season; time; facility and equipment availability; and accessibility to resources within the community all need to be considered in the development of a long-term (e.g., yearly, semester) plan. Another practice currently favoured within the physical education realm is the introduction of a non-traditional and non-competitive physical activity (e.g., taijiquan, yoga, etc.).

As indicated previously, all physical activities must be taught for specific learning purposes, and not just for fun. A detailed explanation of each category is provided in Table 1.

Alternative environment physical activities can be performed in water (e.g., swimming, canoeing) or on land (e.g., orienteering, hiking, skiing, wall climbing) and are primarily meant to expose a class to a physical activity in a new setting. These physical activities are usually recreational in nature and can be taught in association with another academic subject, such as biology or geography, for example.

Dance refers to a series of rhythmical, sequential, and expressive movement, usually with music or a beat. Unlike artistic dance, educational dance in physical education is a great way to teach each of the four movement concepts as detailed above. It may be taught in collaboration with another subject or used as a transition between classes. In fact, anyone can follow or create a series of rhythmical, sequential, and expressive movement with music, if taught using a developmentally appropriate approach (Purcell, 1994). Dance can also be taught with educational gymnastics (e.g., creative dance), and with equipment used in games (e.g., basketball stump). Generally speaking, rhythmic, folk/square, and creative dance are appropriate for elementary children but a teacher may wish to also seek the interest of her/his class when planning a dance unit, as there are likely to be people in the class with a dance background who could use the unit/lesson to develop leadership qualities.

Gymnastics is a type of physical activity which can develop strength, balance, agility, and coordination. Gymnastics has been traditionally conceptualized as an Olympic (or competitive and artistic) event. There are significant differences between competitive (e.g., Olympic) and educational gymnastics (See Table 2). As addressed earlier, physical activities must be taught for intended learning outcomes, and educational gymnastics contains more components than competitive gymnastics (e.g., floor, bar, beam, pommel horse, ring, and vaulting exercises) (Werner, 1994). Nonetheless, competitive or Olympic gymnastics can be modified for educational purposes, although competitiveness and risk-taking must be de-emphasized.

Table 2 Differences between educational and competitive gymnastics

	Educational	Competitive
Goal	education	winning
Learning drive	for self	for referee and audience
Nature	non-competitive	competitive
Form	unlimited	limited
Prerequisite	none	Long-time training
Intensity	mild or moderate	strenuous
Safety Assessment	extremely important flexible	encouraging risk-taking strict

Games (including sports) are a form of structured activities played according to a specific rule set. There are five categories of games played at the elementary level (see Table 3) (Belka, 1994). There has been a movement towards using the TGfU (Teaching Games for Understanding) approach in teaching games. In contrast to the traditional approach, the TGfU model stresses the use of tactics (instead of skills) and provides a context for learning skills and strategies in a meaningful way (see Table 4 for comparison). As a result, the TGfU model has been shown to motivate learners from the outset.

Table 3 Five categories of games

Simple games	Target	Net/wall	Fielding/batting	Invasion/territory
Partner tag, merry-go-round	Golf, curling, bocce, archery, horseshoes	Badminton, squash, tennis, pickleball, volleyball	Baseball, cricket, softball	Hockey, football, soccer, basketball, ultimate frisbee

Table 4 TGFU model vs. traditional technique-based models

TGFU model	Traditional models
1) game form	1) skill execution
2) game appreciation	2) game form
3) tactical awareness	3) performance
4) making decisions (what and how to do)	4) making decision: what and how to do)
5) skill execution	5) tactical awareness
6) performance	

Individual activities are most likely to be practiced throughout a person's lifetime because they do not depend on the participation of a team or partner and often do not require the use of expensive equipment, and are not restricted by a specific schedule. These activities are incorporated into the schedule of the individual wherever a fit can be found. Due to these attractive qualities and the potential for these activities to be continued throughout a lifetime, every physical educator should be encouraged to incorporate individual activities into their program design.

How to Teach? The Pedagogy of Physical Education

Planning. When planning a lesson, unit, or year for any physical education program, a teacher should remain committed to the overall goal of physical education and the activities which help to achieve this goal. Graham (2001) also recognizes the importance of teacher expertise, class interest and size, school tradition, resource availability, allocated time, climate/season, and school policies. In physical education, a teacher should not simply select the physical activities that she/he is competent in or that will strengthen the school "athletic" program. For example, in many schools, teachers are coaches and they tend to select skilled students (e.g., the class 'jock') to make sports teams, and they allow these students to dominate physical education classes in planning (e.g., selecting competitive team sports), implementation (e.g., frequently inviting skilled students to demonstrate in teaching), and assessment (e.g., focusing on skills). This is precisely why the traditional approach of physical education can cause many children to feel disinterested and to withdraw from the subject. The desire to reinforce the competitive mentality seen in sport will detract from the development of physically skilled/competent people, and ultimately diminish the knowledge, skill set, and attitude needed to lead an active healthy lifestyle. Indeed, this is a vital point to note in discussing the importance of planning any physical education program.

As with every academic subject, the instructional plan ought to begin with an outline for the year (however elusive that may be). From there, a unit and/or lesson sequence can be orchestrated. In drawing attention to this process, it is important to appreciate the fluidity of the process itself: the teacher should expect her/his plan to change throughout the process, and be aware that even in the middle of a lesson a plan is likely to change. However, some commitment to the process will need to be maintained, and each lesson should support the larger aim of the unit, yearly plan, and program. A general lesson in physical education can be deconstructed into each of the following: 1) a warm-up activity intended to elevate the heart rate of the class while illustrating a theme from the lesson; 2) an instructional period in which the teacher will explain and demonstrate a skill or movement concept; 3) progressive practice which will often progress from activities of least to greatest difficulty; and 4) a cool down and/or reflection period. Incorporating each of the above with a curriculum objective (or expectation, outcome) and attending to timing, differentiated instruction, group formation, equipment utilization, and assessment prior to the lesson will help a physical educator align each element with the entire unit. Lastly, and of paramount importance, is the need to consider safety both in the design and execution of every lesson.

Instruction. Explanation and demonstration will constitute a large portion of a teacher's instruction in physical education. Every explanation should be accurate, concise, and delivered with a clear voice. A demonstration should correspond to the appropriate explanation, and should provide an

alternative viewpoint and involve students whenever possible. A learning cue should be brief and appropriate, whereas feedback should be immediate, specific, corrective, and positive. In addition, instruction should be progressive – as in, not teaching every detail at once – and teachers should offer advice that will reflect the current skill level of the students without overwhelming them.

In physical education, motor skill learning is especially important. Stanley (1977) proposed one model of motor skill acquisition in which the acquisition of a particular skill will progress from pre-control, control, utilization, and eventually, proficiency (see Box 7-1 on Page 101 in Graham, Holt/Hale, & Parker, 2004). Similarly, Fitts and Posner (1967) believe motor learning progresses from an initial (or cognitive) stage, to an intermediate (or associate) stage and ultimately, the automatic stage (see more details in Kirchner & Fishburne, 1998; Pangrazi & Gibbons, 2008). Regardless of the model chosen, instruction should evolve to inform, extend, refine, and apply (Rink, 2006) the skill targeted in the lesson.

Students' practice. Activities intended for students' practice should be meaningful, enjoyable, and developmentally appropriate (e.g., progressively as well as age and individually appropriate). In order to create an inclusive environment, every activity must be designed or modified to accommodate the individual need of the student and her/his level of development. For example, for children in elementary school, the "regular" basketball rim and volleyball net are too high, the soccer ball may be too hard to manage, or a dance may be too fast. A modification or adjustment can be made to any traditional game by altering the rules, equipment, space, or number of players. (Siedentop & Tannehill, 2000). In so doing, any kind of physical activity or sport can become more developmentally appropriate while fostering a sense of ownership. A class can take pride in a game that is created by them and is reflective of their abilities. Furthermore, these developmentally appropriate activities will usually yield a higher success rate and ultimately, cultivate intrinsic motivation and enjoyment – both of which are instrumental to the adherence of physical activities. During the practice of a particular skill or game, a learning cue (critical and brief words or phrases) can be used to highlight the key elements of the task in the lesson while feedback (the judgemental information) in line with the learning cues can help correct, motivate, reinforce, and maintain learning. If required, an additional explanation and/or demonstration may also be offered. It is the preferred practice of a teacher to express positive and specific feedback in front of an audience while delivering constructive feedback in private. Finally, the appropriateness of any game must be carefully considered by a physical educator, regardless of her/his generalist or specialist status.

Management. As with any other subject, classroom management in a physical education setting will directly relate to the organizational and behavioural structure of the class and student body. The following will

highlight some of the significant managerial issues faced by a physical educator.

1. *Discipline*. Although developmentally appropriate content and instruction will provide the best strategy to deal with discipline, co-developing (teacher and student) rules and routines can also minimize time spent on classroom management. For more than a decade, the Teaching Personal and Social Responsibility (TPSR) model, initiated by Don Hellison (2003), has proved to be most successfully when employed on students experiencing a behavioural issue in physical education (Siedentop & Tannehill, 2000).
2. *Equipment*. Distributing, collecting, and returning equipment can occupy valuable teaching time and lead to chaos during class. The following strategies will likely ease the handling of equipment: assign specific students to equipment duty; incorporate the distribution of equipment into the activity (e.g., silently roll the hula-hoop to the corner and then crab-walk back to the circle); and/or bring a collection container (e.g., large bag, rolling boxes) to the activity area. The teacher must determine the strategy for handling equipment prior to instruction (e.g., in lesson planning) to maximize student activity time and minimize managerial time.
3. *Time*. In a regular physical education class, time is divided amongst the following: instructional time (e.g., explaining/demonstrating a task, giving direction/organizational information, outlining any safety precaution); managerial time (e.g., organizing the group, handling equipment, transitioning between each activity); physical activity time (e.g., time spent physically engaged in activities); and wait time (e.g., time prior to, between, and after instructional, managerial, and any physical action). As documented by research, wait time was proven to occupy as much as 25% of the given physical education class, instructional time was between 15-30%, managerial time 20-25%, and physical activity 20-40% (Siedentop & Tannehill, 2000). In an ideal lesson, time spent engaged in physical activity should be maximized, instructional and managerial time should be optimized, and wait time should be minimized.

Assessment and Evaluation in Physical Education

Assessment in physical education should address the whole child in all three learning domains: psychomotor (e.g., skill performance); cognitive (e.g., knowledge of movement concepts, game strategies); and affective (e.g., attitude, social behaviour, effort). The weight distribution of each can be varied depending on the overall program goal, teaching philosophies, and/or classroom dynamic. As established earlier, there is a growing tendency to emphasize the importance of lifelong participation and a commitment to healthy active living as opposed to high performance competition. This is more likely to provide an opportunity for everyone, including those people

that do not enjoy activities such as conventional team sports, to get involved.

For further consideration, there is also an emphasis on authentic or real-world assessment as opposed to isolated skill testing/assessment. The former is more meaningful, contextualized, and situational. One way a teacher may employ a more authentic approach to their classroom assessment is through the use of teacher-student developed assessment tools. This will allow for a more diverse feedback repertoire which the student and teacher can later reflect upon. By providing greater variety in their approaches to assessment, a teacher can paint a more holistic picture of a student's achievement. For example, a teacher can choose from a checklist, rating scale, rubric, portfolio, journal, event task, homework assignment, parent report, personalized fitness plan, presentation, research report, essay, story, poem, written test, and/or skill test throughout the school year. Furthermore, each assessment piece can be manipulated by differing the assessor (i.e., self, peer, teacher) in an attempt to document alternative perspectives – namely, authentic assessment and subjective experiences (Lu, Tito, & Kentel, in press). Last but not least, the teacher must align instruction and assessment with the overall goal of the program to ensure the intended objective is met.

Conclusion

The current trend in physical education is not to foster a skill or game oriented mentality, but rather to provide an environment that will prove to be more engaging for all children. By developing activities that are meaningful, inclusive, and enjoyable for all children, every educator regardless of status (i.e., generalist or specialist) or area of expertise will be better equipped to promote lifelong healthy active living. This new approach to physical education has more recently been referred to as the "new physical education" (Hastie & Martin, 2006, p. 18). The present paper discussed qualities which should be embodied by every generalist (and modelled by every specialist) in order to teach physical education from this "new" approach. As established throughout the paper, it is vital for a generalist to think critically as well as to question the content and manner in which it is presented in an attempt to fulfil the greater goal of physical education. It is also essential to implement a developmentally appropriate teaching practice that will intrinsically motivate children by increasing their level of success in physical education, and consequently enhance their enjoyment of physical activities. As generalists are in a unique and privileged position to teach the "whole" child using an interdisciplinary approach to the curriculum (e.g., bridging the gap between math, science, language, social studies), each one of them should aim to assist every child in his/her development of the knowledge, skills, and attitude necessary to lead an active healthy lifestyle because they are simply in the best position to do so.

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Biographic Statements

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Teaching English in Turkey: Dialogues with teachers about the challenges in public primary schools

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Abstract
Teaching English in Turkey has its own potential problems due to the lack of authentic language input. Turkey is a foreign language context. This hinders learners in their mastering English in a short time. Moreover, other problems caused by poor instructional planning contribute to this process negatively. With these potential hindrances, the present study aims to seek what other challenges incapacitate primary schools for teaching/learning of English. Conducted with 20 primary school teachers working at public schools in Turkey, data were collected using a semi-structured interview. Results show that poor institutional planning is the main cause of challenges experienced by English language teachers. Besides this, instructional and socio-cultural/economic problems are the other challenges for teaching English.
Keywords: *Teaching English, Turkey, public primary schools, challenges*

Introduction

English is the world language and serves as the lingua franca for business, education, political and technology contexts. English, as a foreign language in Turkey and regarded as one of the most important skills to gain, has been taught at earlier stages in primary schools since 1997. Serving for this purpose, English language teaching departments at universities are popular and enlarging their capacities to train more language teachers nowadays.

However, teaching a language in a foreign context such as Turkey has some potential difficulties. Inevitably, such challenges should be uncovered to find solutions for the improvement of the situation. Thus, the constant communication with the learners and teachers as being the immediate agents of problems is one of the main duties of the Ministry of National Education. For researchers in the field of English language teaching and training the basic duty is to observe, find, identify and determine these

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problems through dialogues with English language teachers regarding the classroom situations. Hence, they are the ones who are able to generate some suggestions and solutions to the difficulties experienced by English language teachers and students contributing to the ease of connection of the Ministry to the schools.

With the purpose on this duty in mind, the present paper tries to report some of the major current challenges in teaching English in Turkish public primary schools.

The authentic voices of English language teachers from a variety of experience and socio-economic school background they work for will be displayed in this paper.

Literature Review

It is a well-known fact that English language teaching/learning is problematic in Turkey (Aktas, 2005; Isik, 2008; Oguz, 1999; Paker, 2007; Tilfarlioglu & Ozturk, 2007). We have been hearing those who have been learning English at schools for years; yet, many couldn't reach the desired communicative level to follow even basic level of conversations unless they enroll at private language schools or visit an English speaking country exclusively. Being Turkey is a foreign language context for English language learning is one of the main reasons for such unsuccessful results. There are some other reasons which are outlined by Aktas (2005) such as the efficacy of language teachers, student interest and motivation, instructional methods, learning environment and learning materials.

To start with the efficacy of language teachers, they must be skillful enough to monitor student performance and expert in instructional designs (Met, 1999). Moreover, they must be a model for the use of the target language and teach language learning strategies explicitly. All in all, they must form the most appropriate atmosphere to make the learning at its best. How well-educated and how much experienced the teachers are are often regarded that they would provide the most effective language instruction. Recently, it is found that teacher success is rooted in their being reflective rather than having worked for long (Richardson, 2005).

As for the motivation and interest of the students, we know that motivation is one of the key components to success for language teachers (Dörnyei, 2001; Ellis, 1994). Teachers often believe that their job is to motivate students by creating classroom tasks that are interesting and engaging and by using authentic materials to stimulate further interest in the target language, as Winke (2005) states. The trend in motivation research has been replaced with detailed lists of teachers' practices rather than what motivates learners.

The third reason stated by Aktas (2005) is the instructional method. It is relevant to the educational background and experience of the teacher. A balanced instructional approach is vital since too much focus on meaning

fails to create the knowledge of structure necessary for anything beyond the most basic conversational skills. As Norris and Ortega (2000) believe that teaching structures implicitly are effective but not the over reliance on structure, which will cause boredom among the students. It should be kept in mind that students would like to communicate in target language instead of learning about it all the time. "There are many ways to draw attention to the form of a language (whole words, sentence structures, stress, and intonation patterns), depending on the student's aptitude, motivation, and previous experience and on the educational and learning goals of the student and the teaching program" (Zurawksy, 2006, p. 2).

The learning environment and learning materials are also a reason for an indispensible part of instructional methods of a teacher. If a learner cannot put the learned component in the target language, it affects the motivation and thus success of the learner. VanPatten, Dvorak and Lee (1987, p.2) clearly put the difference between a first language (L1) and foreign language (FL) context as "... FL learning is essentially limited to a classroom within L1 environment." This is why; a foreign language teacher should use the appropriate teaching materials which addresses the communicative competence of learners to create an atmosphere where they would feel close to a target language. Hutchinson (1987) defines the qualities of a good material as having an interesting text, an enjoyable activity and opportunities for learners by providing their potential knowledge and skills. Good materials also help the teacher and the learner in organizing the teaching/learning process providing various activities to maximise the chances of learning. They embody a view of the nature of language and learning.

Aim and the Research Question

This study aims to identify the problems encountered by English language teachers teaching at public primary schools in Turkey. Thus we aim to answer the question; *what are the problems associated with teaching English in Turkish public primary schools that are experienced by English language teachers at these schools?*

The present study has the purpose of forming a preliminary investigation for the further large scale analysis. Furthermore, it is strongly believed that this study contributes to the recent knowledge about the general trends in policy and decision-making in English language teaching in the Ministry of National Education, Turkey.

Method

Participants

The participants in this study are 20 English language teachers, including fourteen females and six males working at public primary schools in Turkey. The study excluded the teachers working at private primary schools as usually the conditions of those schools for English language teaching are

different from those in the public schools as the private schools keep their student numbers low and provide more opportunities for language learning. It is also believed that the higher socio-economic status of students in those schools would counter many of the problems encountered by public school students and thus teachers.

Data collection

Data were collected through a semi-structured interview protocol. Participants were asked to answer the following research questions (RQ):

> RQ 1. How many years have you been working at public primary school?
> RQ 2. What is the socio-economic status of your school?
> RQ 3. What are the challenges in teaching English at your school?

Interviews were collected either with face-to-face procedures or through e-mailing the questions directly to the participants between January-March 2009. Six participants were interviewed face-to-face and 16 participants were emailed. Face-to-face interviews lasted for about twenty minutes.

Analysis

In the data analysis procedure, descriptive and content analysis techniques were applied. Data were examined by the researcher and an expert from the field to validate and confirm the reliability of the study. For reliability purposes, the items were grouped as "Agree" and "Disagree" and a consensus for all items was determined. Consequently, inter-rater reliability was calculated through utilizing Miles & Huberman's (1994) formula (Reliability = Number of Agreement / Total Number of Agreement + Disagreement x 100). As a result, p level was found 88, which was accepted as reliable.

Results

Demographic Analysis (RQ1 and RQ2)

As an answer for RQ1, it was found that participant teachers had a variety of years of experience at public schools with an average of three years. Yet, for a more detailed analysis, they are categorized as novice teachers (1-3 years of experience), socialising teachers (4-6 years), and experienced teachers (more than 6 years). According to this framework, 30% of the participants were novice, 40 % were socializing and 30% were recorded as experienced. The distribution of the participants seems quite balanced in terms of experience.

Table 1 displays the distribution of participant teachers in accordance with their schools and students' socio-economic background. The answers to RQ2 revealed that most of the participants (60%) work at low socio-economic schools. A few teachers (10%) stated that they work in the city centres with the high socio-economic background students.

Table 1 Socio-Economic Status of the Schools that Participants Work

Teacher Types	Socio-Economic Level of the Schools							
	Low		Middle		High		**Total**	
	f	%	*f*	%	*f*	%	*f*	%
Novice	6	30	--	--	--	--	**6**	**30**
Socialising	5	25	3	15	--	--	**8**	**40**
Experienced	1	5	3	15	2	10	**6**	**30**
Total	**12**	**60**	**6**	**30**	**2**	**10**	**20**	**100**

As can be seen from the Table 1 above, in practice, more experienced teachers (25%) work at middle and high socio-economic schools, whereas socialising and/or novice teachers work mostly for low-income schools. In theory, it is well-argued that low-income schools demand more experienced teachers to find practical solutions for the challenges (Bennett, 2008; Choy, 2009). However, in Turkey the situation is the opposite.

Challenges and Problems (RQ 3)

As an answer to RQ 3, participants' statements revealed that they experience challenges at public schools in three categories, (a) institutional, (b) instructional, and (c) socio-economic. *Institutional challenges* constitute problems caused by lack of prior organization and lack of support by either the school management or the Ministry of National Education. *Instructional challenges* are the problems that hinder teachers in providing effective learning environments. *Socio-economic challenges* come from the lack of parental understanding about the importance of learning a foreign language.

Institutional Challenges. The participants defined two main categories of problems that are caused by their institutions: *Lack of support* and *lack of understanding the nature of language teaching*. They found their institutions were unsuccessful in *providing the basic infrastructure* for teaching communicative English and unwilling to solve the problems brought by teachers. They also put the heavy burden on teachers through *heavy workloads* with *crowded classrooms*. Not recruiting enough number of English language teachers and building more schools complicated the matters, which in turn affected classroom instruction negatively. The subcategories of these main problems are listed in the Table 2.

Table 2 Institutional Challenges

Theme	Category	Descriptive Data	
		f	%
Lack of Support	*1.Providing the basic infrastructure*	20	100
	2.Unwilling to solve problems	16	80
Lack of Understanding the Nature of Language Teaching	*1.Heavy Workload*	20	100
	2.Crowded Classrooms	12	60
	3.Extracurricular Activities	15	75

Lack of Support. Ministry of National Education and schools have failed to support the English language teachers in *providing the basic infrastructure* and being *willing to solve problems*.

Providing the basic infrastructure: Recently, the Ministry of National Education has adopted a student centred communicative computer module, called DynEd © (2006). It supports the classroom learning with a self-study time through internet-based computer software (Ministry of National Education, n.d. 2). It was prepared with a group of 50 scientists consisting of language educators, ICT technologists, neurologists and artists supported by companies such as DynED International Inc., Oxford University Press, Longman, Prentice Hall, BBC , Stanford University, Apple, IBM, SONY, and NEC. It provides both visual and audio English language input. The infrastructure of the software provides a monitoring opportunity to the teachers and parents for the learner development. It interactively includes problem-solving, analysing, synthesizing skills with a great emphasis on listening and pronunciation skills, which are some of the strong points of the program.

With this act, the Ministry of National Education adopted a communicative and authentic language teaching philosophy. However, the problem starts with the lack of infrastructural support. Since DynED is internet-based software, the schools need a strong infrastructure for internet access. At this point, three major problems emerge in line with participant answers:

- schools do not have a computer laboratory
- schools do not have internet access
- schools have computer laboratory; yet, not used for language classes but only for computer classes.

To quote from Participant 1 and 2 may present the situation clearly. Participant 1 exemplified the lack of internet connection at the school and how school management was uninterested in quote A.

> *"I kept my students at school after classes for 3 days. I was motivating them for using DynEd. I know that they don't have computers at home, swanted them to use the school computers. The first day, we waited, waited, and waited for the internet connection. I sent them home saying 'no way today! But tomorrow is gonna be OK!' Neither the next day nor the day after next one could we manage to connect to the internet and use DynEd. The school management didn't solve the problem either. I was embarrassed and unhappy for my students. I question then how these students are gonna learn <u>the real</u> English*." Quote A, Interview on January 27, 2009.

Participant 2 on the other hand explained how a school management had advocated the use of computer laboratory only by the computer instructor in quote B.

> *"My school, unlike the rest of the country, had a well-developed language laboratory. Yet, until we managed to set up DynED system, the*

> *school management catered the room for computer instructors. I tried to talk with my manager. No, it didn't work. I think the school management doesn't believe that English is an important school subject compared to computer classes."* Quote B, Interview on January 29, 2009

Unwilling to solve the problems: Regarding the lack of institutional support, participants all agree that school managements are not willing to solve their problems in instructional matters. Only three (15%) out of 20 participants stated that they have the strong support from their head teachers in the issues regarding learning and teaching. The rest of the participants verbalized that the managers do not forward their complaints to the upper official managerial levels in Ministry of National Education. The school managers are eager to be one of the nominated one in the area as "unproblematic, running perfectly" school. Participant 3 thought that this was due to the apprehension of the manager to be declined in duty and/or degraded by the Ministry in his position.

> *"Of course they never forward our complaints. They want to be the best school in the area. Everyone knows the problems, but they never react or act on it. Their upper level managers do not want to hear the problems, either. I don't feel like talking about problems any more. I started to play three monkeys: dumb deaf and mute because I know that I will be labelled as the problem person but not the managers."* Quote C, Interview on January 28, 2009

Lack of Understanding the Nature of Language Teaching. In addition to lack of institutional support, teachers do not receive professional development from their schools on how a foreign language should be taught. A lecture-type class is implicitly imposed on English language teachers by limiting their use of technology as described in Quote B, above. It is well-known that foreign language is not only a class hour that will be spent on some activities from the textbooks or teacher provided activities. As Participant 4 elaborates on this issue in quote D, school management do not believe that it is necessary to master English in schools.

> *"I believe that school managers should be taught how important English learning across a global world. They still think that English is a foreign language which is too foreign for Turkey."* Quote D, Interview on February 27, 2009

Heavy Workload: Most of the English language teachers teach 20 or more class hours at schools. Some of them are the only English language teacher in their school. Therefore, they feel burnt-out and ineffective to put their energy into their classes. Furthermore, they have extracurricular duties such as dealing with disabled students, counselling learners and managing their social problems. Participant 5 exemplifies the issue with her incapability of controlling some disabled students in classroom in quote E.

> *"Ministry decided to integrate disabled students into our classrooms. This might be a good idea giving the message to them and their families that disability is not to be humiliated by our society. Nevertheless, I don't know how to handle them. Each has different level of disability. I have never educated or given a thought about them before. They are highly disruptive and I don't know what to do with them. They actually don't learn. I usually*

> *isolate them, which gives me a sick idea about my professional capability*." Quote E, Interview on January 26, 2009.

Participant 6 refers to extracurricular activities he had been given. He was not willing to do these but he was not given an alternative. This is the usual case in public schools, Ministry orders and so the school managements execute.

> *"...as if it is not enough delivering 35 hours a week. I have to deal with my students' personal problems. I have to spend another class hour with them asking about their difficulties in life. I cannot solve them. Just listen and listen. I myself am incapable of organizing my life with this little time and the money I earn, how could they think I can solve others'? Ministry of Education orders and schools don't have a saying about it. Managers only say you have to do it, so do it! So be it, I say*." Quote F, Interview on January 29, 2009.

Crowded Classrooms: In Turkey, most of the primary schools are overpopulated. Especially, after the law of 8-year-compulsory primary education in 1997, schools received more and more students. Currently, classes usually have 40 students; nonetheless it is also well-known that this number may go up till 60.

Participant 7 pinpoints how crowded classrooms obstruct the communications among students. She also puts her dilemma forward by implying that her language teaching philosophy and the practice do not match.

> "*This is a language class. They have to be able to communicate. I cannot control the class, nor can I provide a serene atmosphere for a real conversation. I only lecture and I hate this. I do something that I don't believe but I have no other solution*." Quote G, Interview on February 25, 2009

Instructional Challenges

The participants described the instructional challenges in three main categories: *A busy curriculum*, *inappropriate textbooks*, and an *unsatisfactory placement test*. As for the curriculum, the participants stated that it was full of unrealistic learning goals for the readiness of learners and lack of flexibility in application. Inappropriate textbooks were another dimension of instructional challenges, which encompass the lack of supplementary materials and incompatibility with the realities of the English learning and teaching context of Turkey. Unsatisfactory placement test was described as grammar-oriented and mechanical. Instructional challenges identified by participant teachers are displayed in Table 3 below.

Table 3 Instructional Challenges

Theme	Category	Descriptive Data	
		f	%
Busy Curriculum	*1.Unrealistic Learning Goals*	20	100
	2.Lack of Flexibility	7	35
Inappropriate Textbooks	*1.Lack of Supplementary Materials*	20	100
	2.Incompatibility with the Realities of English Learning and Teaching in Turkey	13	65
Unsatisfactory Placement Test	*1.Grammatically-oriented*	20	100
	2.Mechanical	20	100

Busy Curriculum. The new curriculum is based on communicative language learning method in the framework of integration of structural, situational, topic-based, conceptual/functional, process-/task-based and skill-based approaches (Ministry of National Education, 2006, p.2). The curriculum prepared by a team of leading academics in the field of English Language teaching also adopts the Common European Framework of Reference for Languages (CEFR) system (levels from A1 to C2). It advises applying cooperative and supportive group-work techniques in classrooms through the new curriculum. The textbooks used in public schools were also re-written with the adoption of new curriculum.

Unrealistic Learning Goals and Lack of Flexibility: Despite being theoretically and philosophically ideal, all participants (see Table 3 above) complained about the new English language curriculum, which was employed in 2006 after a one-year pilot. The reasons were the new curriculum being busy and inflexible. Participant 8 clearly describes them in the following Quote H.

> *"The new curriculum... Awful. The idea behind might be good but not applicable. First of all, the learning goals are so many. They are not realistic. They have to ask for our opinions while developing the curriculum. You cannot teach them all in 4 hours a week. It is so stressful.... I cannot teach one component in a week, but according to the syllabus I have to deal with the new topic in the coming week. My students cannot cope up with the pace. Me, neither. Most of the time, I tell the management, I do in line with the syllabus but actually I don't because I know that when the ministry inspector visits the school (who doesn't speak a word of English), he checks what I write into the notebook of daily lesson plan... doesn't even care about what I do in classes. I act as if I do but, this is inevitable with this new busy curriculum."* Quote H, Interview on 18 February, 2009

Inappropriate textbooks. Participants also mentioned the textbooks being poorly developed in terms of the material supplements. They also added the difficulty of EFL context in reinforcing the learning goals due to the lack of real need for communication in Turkey.

Lack of Supplementary Materials and Incompatibility with the realities of the English learning and teaching context of Turkey: Participant 9 mentions in Quote I below the unrealistic learning goals by elaborating on the

incompatibility with the learning goals and the lack of supplementary materials with the compulsory textbook provided by the Ministry to be used in classes.

> "*The textbook is a must to use but there are not any supplementary materials except from the listening CDs. You have to use listening CDs provided by the book... they arrived so late to school. I don't have the necessary electronic equipment to use the CDs in the classroom or at school. Thus, I cannot accomplish learning goals in listening comprehension. These students have basic level of English but they cannot use it because it is an EFL context. There is no reinforcement outside the classroom... with the 4 hours a week impossible to achieve them all. Language is for communication but I cannot do it due to the poor support.*" Quote I, Interview on 20 February, 2009

Unsatisfactory Placement Test. With the adoption of the new curriculum and textbooks, a new placement test (named as *SBS* in Turkish language) was put into action in Turkey. The selection procedure of primary school students for high school education was being done through an exam at the end of 8th grade until 2008. However, in 2007 Ministry of National Education settled a new program for selection. They developed triangular selection criteria including school subject grades, behaviours score and the placement test score (Ministry of National Education, 2008, p.4). Moreover, the selection is based on the average of these three criteria for 3 years (6th, 7th and 8th grades). The placement test evaluates the foreign language skills of learners in three languages (English, German and French) with 13 questions for the 6th graders, 15 questions for the 7th graders and 17 questions for the 8th graders.

Grammatically-Oriented and Mechanical: The participant teachers were unhappy about the content of the new placement exam. They described it as grammatically-oriented and mechanical. A backwash effect of the test was that it negatively contributed to their choices of the methods employed in classes. They were in a dilemma between being a communicative teacher and satisfying the parents and the school management with the success rate of their students. Participant 10 criticizes the exam in many ways in the following quote J.

> *"This placement test kills my motivation. The new curriculum says I should be using communicative teaching methods but they test my students with a grammatical-oriented mechanical test. I have to teach them to be successful in the test because of the parents. There are some pictures in the questions. They don't print them in colour so my students cannot read the pictures. Sometimes, pictures are misleading. It is clear that the exam is still under evaluation. However, these students are judged by these undeveloped non-finalized versions of the SBS. I feel guilty when I spend a bit more time on speaking or listening because these are not tested in SBS. Doing something but knowing that you should be doing the opposite is worse."* Quote J, Interview on 28 February, 2009

Socio-Economic Challenges

All the participants described the socio-economic challenges as the lack of support from the families. Working with low socio-economic level students, teachers were challenged by the parental understanding of the importance of English classes. Lack of such support is also reflected in unreturned homework assignments, which, in turn, slows the pace of student learning. Participant 11 illustrates the lack of parental support in quote K.

> *"Teaching English to low socio-economic level students are also difficult for the lack of their parent's understanding why English is important. I somehow manage my student s to acquire the importance and the beauty of language learning but the parents (...) They don't support their kids in homework. It is not only because they cannot speak the language but because they don't believe it is necessary. They don't see anyone speaking English in their immediate environment. I don't think they have ever heard someone speaking English, either. Then, the school, teacher and student triangle is never complete. I am trying my students have fun at school. This is not enough when it comes to assignments. When they don't do their homework, I have to spend extra unplanned time in class to reinforce their learning, which puts my class back according to syllabus timeline."* Quote K, Interview on 25 February 2009

Discussion

The findings show that English language teachers experience three main challenges while working in Turkey: (a) Institutional, (b) Instructional) and (c) Socio-economic. Although it seems that these categories are distinct and displayed accordingly, a close examination reveals that they are interconnected, indeed, and affect one another inevitably. Below is the Figure displaying the circular interrelations between each category.

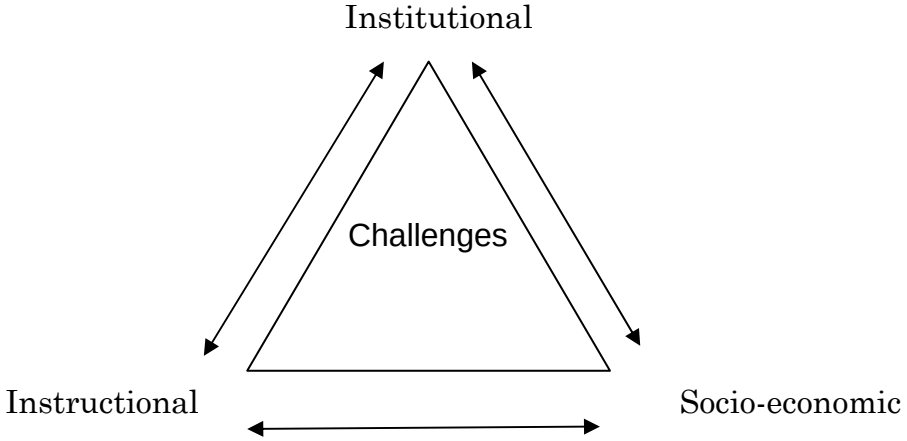

Figure Challenges of Teaching English in Turkey

In the relevant literature, Isik (2008) labels the problems similarly under two categories as institutional and instructional. He discusses institutional problems are due to the poor planning resulting in malfunctioning curriculum and thus methodology. In addition to this, instructionally flawed approaches have doubled the negative effect with the lack of appropriate materials and infrastructure. These findings strongly support the findings

of the present study. Lack of institutional support generated the instructional problems, which, in turn, minimized the effective use of the newly developed curriculum (Paker, 2007). Similarly, instructional problems such as the incompatibility between the teaching and testing approach reduced the effective application of curriculum. Lack of parental support also resulted in ineffectual instructional outcomes. Therefore, these challenges cannot be evaluated separately.

This study has revealed that the higher the socio-economic levels of the parents are, the higher the awareness of the importance of learning a foreign language is. (Akalin & Zengin, 2007). As it has been found in our study, Tilfarlioglu and Ozturk also (2008) discovered that ELT teachers were negatively affected by very crowded classrooms and the heavy workload. They also uncovered that most of the English language teachers in Turkey found the textbooks were designed ineffectively and the schools lacked ICT supporting materials such as videos/CDs, projectors and computers (Paker, 2007). Therefore, ELT teachers were more inefficient in teaching listening and speaking skills in classes than grammar and reading.

It is clear from the findings that challenges derive mostly from the new policies in foreign language teaching and testing. Recent adoptions and establishments in foreign language teaching policies affect classrooms and thus cause new challenges. As also suggested by Isik (2008), lack of infrastructural planning seems to be the main cause.

Compared to the previous studies conducted in Turkey in identifying problems and challenges of English language and/or foreign language teaching, this study is highly consistent with the relevant literature. However, it also reveals some newly emerging problems due to the new policies put into practice after 2006: the placement test (SBS) and DynEd, self-study internet-based learning material. The incompatibility between the test content and curriculum affects teaching negatively. Similarly, having spent a huge budget, time and energy, the poor accessibility of DynEd seems not fully benefited by the users due to the lack of infrastructure. As a result, it seems that the good will turns into a bad result due to the poor planning in Turkey.

Conclusion

The present study displayed the most recent evaluation of the state of English Language teaching in public primary schools in Turkey. The problems and challenges identified by the school teachers in three dimensions are highly interrelated. It seems that one problem results in another through a chain reaction, which causes ineffective teaching and learning activities with the waste of time. It is well documented that foreign language teachers start over from the beginning during each academic year (Oguz, 1999). They re-teach what they had taught the previous year due to the limited use of English language in context and learners *do* forget what they learn.

In this study, new problems have been identified as emerging due to the new policies since 2006 for foreign language teaching. Besides others previously identified and affirmed by this study, these emerging difficulties faced by learners and teachers are important because they should now inform changes in the policy and decision-makers in the field of education at a national-scale to improve the conditions.

• • •

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I would like to thank to the participant teachers who contributed to the compilation of the challenges they experience at public school openly and frankly. Moreover, I would like to give my special thanks to the authorities of Aksaray In-Service Education Centre for making it possible to reach the potential participants. I also extend my gratitude to my colleagues Dr Banu Yaman and Hulya Tuncer, MA for their invaluable feedback for the content and editing of this paper. Last but not least, I am deeply indebted to my post-doctoral supervisor Prof. Brenda Cherednichenko whose help, stimulating suggestions and encouragement helped me in all the time of research for and writing of this article.

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The emerging educator as leader and action researcher

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Abstract

The 320 pre-service educators in this inquiry were viewed as emerging classroom teachers who were leading while grappling with new personal experiences which informed and guided each during the pre-service year. The written account evidence supported our resulting inferences, discussion and conclusions and demonstrated the leadership required within pre-service. It was the analysis and synthesis of practicum reflections that illuminated core beliefs, attitudes and needs of emerging action researchers as they developed a professional and personal understanding of leadership, teaching and self.

Keywords: *Action research, leadership, professional development*

Introduction

Our world is changing and there is a need to move with this change and adapt as a society. This is not something educators need to oppose, it is something to embrace, reflect upon and plan for. We need to be progressive and adopt a view of nature as being in flux, as ever changing to enhance our knowledge, to redefine ourselves and rediscover, to keep pace with change (Ryan & Cooper, 2004). The implication for our schools and our pre-service teacher education programs is to confront change and respond accordingly. However, to do this "a new paradigm of the teaching profession is needed -- one that recognizes both the capacity of the profession to provide desperately needed school revitalization and the striking potential of teachers to provide new forms of leadership in schools and communities" (Crowther, Kaagan, Ferguson, & Hann, 2002, p. 3). New teachers, leading

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the charge to confront change must possess knowledge, skills, and dispositions (beliefs) required to assume these fresh forms of leadership and a "pre-service program can either set this process in motion with the appropriate tools, attitudes, and expectations, or it can set the novice up for a dizzying fall from the heights of unchallenged naive idealism" (Russell & McPherson, 2001, p. 8). Therefore, teacher preparation programs must make deliberate attempts to require the analysis of knowledge, skills, and dispositions of teacher leaders, and nurture these traits to ensure that change is embraced by new educators, leaders and our profession.

Admittedly, the growth and analysis of teacher knowledge "begins with what teachers already know and enact in their practices rather than beginning with knowledge that needs to be given to teachers" (Clandinin, 2007, p. 15). To incorporate beginning teachers knowledge requires professors to look into and at the elements of knowledge that student-teachers bring into a program, after all, "teacher knowledge refers to teacher' narrative knowledge, their personal practical knowledge, composed and recomposed over time and in the contexts of personal and professional knowledge landscapes " (Clandinin, 2007, p. 15). This pre-existing knowledge is deeply embedded and often tacit. Frequently this core knowledge surfaces during the intense and unpredictable practice teaching sessions via self-discovery and reflective revelation. These practicum experiences can direct and inform future actions, reflections and revisions hence varied outcomes emerge and need to be discussed.

The practicum is a time of sudden student teacher growth that requires student teachers to effectively face problems and deal with dilemmas in an authoritative manner since a teacher is an authority by virtue of their position and expertise (Peters, 1959). This situation can create tension given that "student teachers are uncomfortable during these early stages because they dislike seeing themselves as authoritative figures" (Boudreau, 1999, p. 458). However, it is not entirely the challenge of being in authority that is unsettling; it is the requirement to do this in another teacher's classroom, over a short period of time (practicum), while being evaluated by mentors that heightens discomfort for these emerging teachers, leaders and role models.

The practicum is a test of physical and mental capacities. It is an immersion in a culture that often puzzles and requires multiple leadership skills. "Teachers hold a central position in the ways that schools operate and in the core functions of teaching and learning, what is new are increased recognition of teacher leadership, visions of expanded teacher leadership roles, and new hope for the contributions these expanded roles might make in improving schools" (York-Barr & Duke, 2004, p.255). This reality has produced a need to study, sort, cultivate and scrutinize the concept of emerging teacher leadership. A natural place to begin is within the training of teachers as they become known as teachers, leaders and action researchers (reflective practitioners)

Mode

Action Research. As a pre-service teacher, if actions do not unfold the way they were imagined and planned or an unexpected behaviour or event transpires you make changes until you are satisfied with the planned outcomes. The pre-service teacher acting as "the action researcher is interested in the improvement of the educational practices in which he/[she] is engaging. He [she] undertakes research in order to find out how to do his job better-action research means research that affects actions "(Corey 1949, p. 509). "Action research combines a substantive act with a research procedure; it is action disciplined by inquiry, a personal attempt at understanding while engaged in a process of improvement and reform" (Hopkins, 1993, p. 44).

> Action research is, therefore, a deliberate way of creating new situations and of telling the story of who we are. Action research consists of deliberate experimental moves into the future, which change us because of what we learn in the process. (Connelly & Clandinin 1988, p. 153)

These definitions and the recursive nature of the teaching practicum are commonplace in most Faculty of Education programs. Each round of practice teaching offers the student teacher a new opportunity to refine outcomes. This recurring teaching practicum within the teacher training program complements action research as student teachers act, reflect and revise recursively. Parsons and Brown (2002) concluded:

> Action research has been found to serve not only as a means of improving teaching . . but also in developing practitioners' flexibility and problem-solving skills . . . and their attitudes to professional development and the process of change . . . . Participation in action research resulted in increased confidence, self, esteem, willingness to embrace research, and liberated creative potential for the educator-turned-action researcher . . . . Action research has been described as a vehicle for improving pre-service . . . [and] has been found to promote a climate of professionalism and scholarship. (p. 6)

Reflection. Making sense of an action in practicum, the perspective taken on the interpretation of events following the action (stance) and related revised teaching decisions in a pre-service program requires deep reflection upon self in relation to others as a means to self-monitor (Schoonmaker, 1998), develop and improve. Students completing a pre-service program complete both *practicum* (student teaching) and *theory classes* that delve into teacher training requisites. Some course activities are particularly well regarded by students that link pre-service teacher's reflections on the role of the teacher, course readings, and observations during students' field experiences (Pryor, Sloan & Amobi, 2007). Links are developed often by the construction of a reflection on paper and the sharing of this written effort in class discussions. It is an essential task that can guide and affect the teaching-learning process as it contextualizes and connects educational theory to praxis (Onwuegbuzie, Witcher, James, & Minor, 2002).

Leadership. At present we see a convergence of old models and new models of leadership (professional learning community) that give way to contemporary images such as the one offered by Fullan (2001) who explains, "there are strong reasons to believe that five components of leadership represent independent but mutual reinforcing forces for positive change" (p. 3). Fullan (2001) suggests an image of a circle with five elements which include: Moral purpose, understanding change, relationship building, knowledge creation and sharing, and coherence making. These five elements guided and informed this study as we read written accounts and looked for evidence of these leadership qualities within the lines of reflective text. We did this because we believed, as do Kouzes and Posner (1995) that,

> leadership is an observable, learnable set of practices. Leadership is not something mystical and ethereal that cannot be understood by ordinary people. Given the opportunity for feedback and practice, those with the desire and persistence to lead—to make a difference—can substantially improve their abilities to do so. (p. 4)

Therefore we believed that the five traits of leadership could be detected in the reflective accounts of evolving teachers. However, it was necessary to further define these terms.

Moral purpose. Moral purpose is about making a "difference in the lives of students . . . . If you don't treat others . . . well and fairly, you will be a leader without followers" (Fullan, 2001, p.13). Hence we looked for evidence of concern for the lives of students and fair treatment.

Understanding change. Knowing that teaching requires strategizing and innovativeness (Fullan, 2001, p. 31) at a pace that is enabling rather than disabling for students.

Relationship building.

Being interested in others and constructing a focused collaborative community of learners is key. "Increasingly, leadership in schools is becoming a shared responsibility . . . . Leaders are considerably more effective if they work with and through people in their enterprise . . . . We have to talk about feelings in public" (Naested, Potvin, & Waldron, 2004, p. 30).

Knowledge creation and sharing

Fullan (2001) explains,

> the process of knowledge creation is no easy task. First tacit knowledge is by definition hard to get at. Second, the process must sort out and yield quality ideas; not all tacit knowledge is useful. Third quality ideas must be retrained, shared, and used throughout the [classroom]. (p.80)

We are looking for evidence of the above as teachers attempted to make their knowledge accessible and shared within their practices.

Coherence making

Refers to the ability to work, sort and contribute to problem-solving and "the most powerful coherence is a function of having worked through the ambiguities and complexities of hard-to-solve problems" (Fullan, 2001, p.116). Therefore we are looking for proof of this in the reflective accounts of pre-service teachers.

Purpose

The purpose of this action research effort was to train pre-service teachers to create written accounts of their leadership actions. Secondly, this act, reflect, and revise mode (action research) enabled and enhanced pre-service teacher's capacity to articulate their practice and improve teaching and leadership. In doing so, identity formation, growth and the expansion of self-understanding was nurtured.

Research Questions

The following questions served as a guide.

1. Using an act, reflect, revise mode (action research) what evidence of leadership can be realized?
2. What leadership/teaching actions and reflections will cause revisions and guide growth?

Sample

A purposeful cross-sectional sample (N=320) was selected due to accessibility and convenience. All participants were pre-service teachers (students) who attended Faculty of Education classes. All were enrolled in the Bachelor of Education (BEd) program, a one-year full-time professional program that meets the requirements of the Ontario College of Teachers for teacher certification. All participants had an approved undergraduate degree from an accredited university before enrolment. Participants were enrolled in one of two divisions in the Bachelor of Education program. Participants Included 120 students who were training to become J/I (Junior/Intermediate - Grades 4 to 10) teachers and 200 pre-service students in the I/S (Intermediate/Senior - Grades 7 to 12) levels.

Pre-service students completed recursive rounds of action research during practicum while completing courses in curriculum studies, curriculum methods, and foundations in education. Each year there were three practice teaching sessions for a total of 13 weeks of placement in elementary and secondary schools throughout the province of Ontario, Canada. Throughout the year age ranged from 22 to 57 and there were 217 females and 103 males respectively.

Research Design

This qualitative endeavour required us to supply images of action research that were studied in class and exemplars of written action research accounts from previous year students were used to layout a framework. Our intent was to facilitate the development of leadership skills through reflective

practicum tasks on three separate occasions. We collected over 1000 reflective accounts which were read, sorted into themes, and checked for the act, reflect, and revise elements. The themes, as noted earlier, involved five elements which included: Moral purpose, understanding change, relationship building, knowledge creation/sharing, and coherence making. These beacons of leadership guided and informed this study as we read accounts and looked for evidence line by line.

Each participant enacted an action research effort by noting their actions (ACT), documenting their thoughts and feelings concerning their leadership actions (REFECT) and detailing what they planned to do to next (REVISE). This task (ACT-REFLECT-REVISE) was but one means of collecting evidence and documenting the beginning of a long journey in education.

Results

Of the many (over 1000) reflective written accounts scrutinized 158 (16%) provided evidence of moral purpose (MP), 228 (29%) demonstrated an understanding of change (UC), 542 (54%) mentioned relationship building (RB), 482 (48%) noted knowledge creation and sharing (KCS), and 127 (13%) enacted coherence making (CM). A number of traits were intertwined and common to many reflective accounts; however, we determined the predominant trait via discussion of reflective accounts in class and through rereading.

Moral purpose

Of the 158 (16%) accounts denoting moral purpose we have included one that demonstrates how a pre-service educator has tried to make a difference in the life of a student via fair treatment within an educational milieu.

> My practicum was full of learning experiences – some more pronounced than others. The revisions that I made since October to my management strategies worked out fantastically; especially with my one behavioural student who was having some difficulties in the classroom, but was even more unmanageable in the gymnasium. After careful, personal consideration and discussion with my associate teacher, I decided to approach this situation from a different angle. I began each day by preparing this student for the gym class. I told him exactly what we were going to be doing. I explained what equipment we needed, the warm-up, the drill and the activity I had planned for the gym class that day. After telling him step by step how the class was going to unfold, I told him because it was going to be so busy, I needed help setting up the equipment and making sure the class ran as smoothly as possible. He jumped at the chance and volunteered to help me immediately. (Student,121)

The pre-service teacher's individual and personal consideration motivated the student and the pre-service teacher discovered just how moral purpose and fair treatment can establish pathways and bonds that diminish acting out in this context. Leading by engaging others is not straightforward and

there are a number of possible reactions to the disruptive student, yet using the right approach, a fair one, in this case pays dividends.

Understanding change

Teacher leaders know innately, that teaching and leading requires strategizing and innovativeness (Fullan, 2001, p. 31), at a pace that is enabling rather than disabling for students. The following excerpt, one of 228 (29%) indentified, is the latter portion of a four page reflection upon a teaching practicum. One student-teacher wrote:

> During the debates I had students calm themselves and take a deep breath between each new set of debaters. There were six teams in all for a total of three debates. Those who were not immediately involved sat at the back of the class like an audience. Once the debates were over students did not want to stop discussing and suggesting their ideas and arguments. I asked students to return to their rows and that we would only continue the debate as a class if they could listen, respect each other, and speak one at a time when called on. When they began to get loud and talk over each other I had to raise my voice and say "Quiet" because I wanted to stop them before it got out of control. They were quiet right away. I felt a little embarrassed having to get stern, but I think with such a large group it was necessary to remind them of the behaviour I asked for during the agreement.
>
> I will continue to experiment with group work activities and with motivating students to engage in classroom discussions, especially at the Grade 12 level because the vocalization of ideas and arguments will be expected of them in most Universities. I will try a new debate format and preparation process with the grade 10's when I return in November. This time we will look at two sides of a topic related to WWII. I look forward to challenging them and having them try out new roles and ways of working together and presenting information. (Student, 27)

I believe the key to innovativeness is the intention to experiment, to risk and hope for rewarding teaching and leading within the teaching practicum.

Relationship building

Being interested in others and constructing a focused collaborative community of learners is important. One, of 548 (54%) identified reflected:

> During my first practicum, I spent a lot of time with the students with learning disabilities and behavioural issues. I watched their individual learning styles, recorded problem areas, observed their manners and took note of times when their behaviour was appropriate and times when it was out of control. I worked to establish a rapport with these students and helped integrate them into their new classroom with as much ease as possible. I anticipated these were the students that would challenge me the most when I was in front of the class teaching. I want to be able to diffuse and manage potential disturbances or out- of- control situations as efficiently as I can in order to maximize the effectiveness of my lesson for all the students in the class. I believe each student is an individual and has individual actions, reactions and needs. It is essential for classroom management to have an extensive awareness and knowledge of these aspects with all students, but especially with students who have special needs. (Student 302)

Establishing a rapport is a fundamental element in classroom leadership and we see an instance of that here as the student teacher observed, plotted and worked to establish connectedness in an effort to build a relationship.

Knowledge creation and sharing

Fullan (2001) explains:

> The process of knowledge creation is no easy task. First tacit knowledge is by definition hard to get at. Second, the process must sort out and yield quality ideas; not all tacit knowledge is useful. Third quality ideas must be retrained, shared, and used throughout the [classroom]. (p. 80)

We looked for evidence of the above as teachers attempted to make their knowledge accessible and shared within their practice-teaching. One student explained how the learning is mutual, sudden, and rewarding.

> During my week of actual teaching, I was responsible for the math portion of the afternoons. Prior to my first lesson my AT asked me to work with the group of students that were not present for the first probability lesson and review with them what they had missed. This was definitely the eye opener for me and all the challenges surrounding this individual with Asperger's. As I was working with the students; all of whom were identified, this boy could not maintain his focus. He was scribbling on his page, he was talking aloud commenting on unrelated issues that did not quite make any sense, and he was disrupting the other students and all of this was leading to him not learning my lesson. It was interesting since I have never worked with challenged individuals or children with disabilities; I was not sure how I should respond. At first I politely asked him to refocus and pay attention to the task at hand. I would ask him direct questions to make sure he was not drifting away. At one point, I picked up one of his pens to show him something on his paper and he started panicking because I was using the black pen and it was apparently poisoned. He had another pen in his hand that you could choose which colour to use and he begged me to use that pen instead. To be honest, the whole experience was frustrating. I didn't know how to respond to his odd fits and his disruptive behaviour. That first day I definitely showed signs of impatience and I admit I was not quite prepared to handle this kind of student.
>
> The next week once my actual teaching began I kept pondering about how I would handle this boy and what tactics I would use to help him learn. My AT informed me that this boy is not stupid; he is in fact quite smart. He is manipulative in the sense that he fully knows what he is doing and has preconceived notions regarding his actions. On that note I was told to be firm with him and not tolerate his episodes. The next week I started teaching probability and it actually went a lot better than I thought. I learned a lot about this boy and how he worked.
>
> During independent work I found that he demanded a lot of my attention. He would complain that he didn't understand the work and that he was behind. At the beginning I definitely fell for it. I would sit beside him and work through the problems with him. I learned after a few classes that he actually understood the material quite well; he just believed he didn't understand or he just wanted someone to be there with him to assist with the questions so that he didn't have to do the work alone. I needed to stay on task since other students had questions and they couldn't be neglected either. It was difficult trying to adhere to the needs of my students as well

> as keep an eye on what his boy was doing. If I didn't come see him for a while he would completely stop doing the work. If I asked him why he stopped he would say he didn't understand. I would claim that he did all the previous questions with no problem and then he would state that it was because I helped him. I eventually told him that yes I was present while he did the question; however I assisted him in no way at all besides reading that question to him. I made sure I was encouraging in telling him that he was doing a great job and was working well and to keep it up. In a supportive tone I told him that he knew what he was doing and I would come and check to see his next question in a few minutes. I would check on him periodically to help him stay on task.
>
> One night I assigned homework and he told me that he would not complete it since he didn't understand. During language period that day I had a talk with him about math and his understanding. I was encouraging and explained to him that he knew what he was doing and to try. I was looking for effort and attempt. The next day he had completed the homework and it felt very rewarding. I also had a quiz that week and he actually did quite well. It felt good to see that he was understanding [sic] the content and actually completing his work. For me this was an example where I felt like I handled the situation well. I do realize that in a real classroom setting when I am my own teacher, I will not have that same amount of time to spend with him one on one. (Student 289)

Coherence making

Coherence making refers to ones ability to facilitate, sort and contribute to problem-solving and "the most powerful coherence is a function of having worked through the ambiguities and complexities of hard-to-solve problems" (Fullan, 2001, p. 116). Therefore we were looking for proof of this in the reflective accounts of pre-service teachers. A non-typical reflective account suggested and noted the steps undertaken to achieve such outcomes. This grade four student teacher/leader supplied this chart.

Act	Reflect	Revise
Remaining silent until the Students are quiet	I felt that this worked sometimes, depending on the day. If they students were in more of an observant mood, then it worked. Otherwise, they didn't care as much, and I had to resort to other management methods.	I would perhaps wait longer next time before giving in when I do this, if they don't catch on right away.
Using a timer to motivate efficiency	This worked as a motivator for the students. Anything that is turned into a competition for them is great, since it gives them something fun to work towards. I.e., beating their time from last time, etc.	This usually worked well, and there isn't much I'd change about this management strategy. Perhaps to incorporate maybe a tangible rewards system after so many successful attempts.
Using peer pressure to gain quietness	This does not always work in this classroom. That is because there are many students with behavioural problems, and	This is not much to change about this, except to not do it. It would work in some classrooms; however, with

	learning disabilities, who see misbehaving almost as a challenge, and entertaining. Therefore, on certain days, they don't care whether they get in trouble or not (even to the extreme of being sent to the principals office).	the dynamics of this class, it is not an effective strategy to use.
Getting students to line up quietly to walk down the hallway	This was a good strategy, in order to get them focused, since otherwise they would not be in the 'zone' to be quiet.	This usually worked fine. However, sometimes they don't really understand its value, so perhaps talk about it in class together, and get them to state why being quiet in the hallways is important.
Ensuring students put up their hand to speak in class	This creates great structure in the classroom. It also creates respect among the peers and the peers to teacher(s).	There is not much to change about this. However, we need to continue focusing on sticking by this rule, since it is not always strictly regarded as important.
Taking my time when speaking, and asking questions, ensuring students are following me	This is important, since the students need time to process information, and construct thoughts. This time allows them the chance to do this. It also allows them to think critically for themselves.	There isn't anything I would change about this strategy. The only thing I would perhaps add is to ask more probing questions to help their thought process.
Flexibility depending on how the day is going (every day is different)	This is critical, since things are changing so much, things are coming up, and students attitudes vary day to day, therefore, being well prepared, and therefore flexible to make changes as the day goes on, is important to help the day go smoothly.	The only thing to keep in mind is to be overly prepared, to be able to make quick changes to the day.
Enforcing the rule that when someone else is speaking, no one else is (whether it is the teacher or another student)	This is very important again, to demonstrate the importance of respect for one another. Half the students got frustrated when it was not silent for them to speak, and the other half didn't care. So a real emphasis on this needs to be continuously focused on.	What I need to change for this strategy is to enforce it stronger. It isn't consistent enough with them, since they take advantage of it sometimes.
Having instructions on the board for when the students come in the classroom in the morning, or following any recess.	This helped students get settled, since it gave them a task to do when they came in, as they were waiting for all their peers to get changed and get seated as well. This way they all had something to do, and no one was sitting around	This seemed to work great, since the students in this class were for the most part fairly needy, and had to have something to keep them on task at all times.

	with nothing to do.	
Getting the students to pick up their own coats, scarves, mittens and hats in the hallway and make sure they are hung up.	This helped them realize that no one was there to pick up after them.	This seemed to work since the students went from having their stuff all over the floors in the hallway, to having 'most' of their stuff hung up.
"Brooksy Bucks", (my associates last name is Brooks) pretend money they can collect when being good. At the end of each week, they were allowed to cash it in for real prizes.	This really helped encourage them since it was to buy prizes they all wanted (i.e., pokemon cards).	I don't think there is anything I'd want to change with this. It was very helpful since they all seemed to really enjoy it.
If they are misbehaving, tell them they will owe me time from their recess. Each check they get beside their name, they get one minute removed from their recess which they own me.	This worked in most cases. However, there are those exceptions of students who enjoy staying in at recess, therefore I am selective who I will use this on.	I am not sure what I can change about this. It seems to work for some of them, since some of the students are off task easily, and it helps put them back on the right path for the time being. I find it to have a temporary effect (in the sense it works differently day to day with different students).

(Student 186)

The student in this case elected to display the task within a chart in order to sort, organize and layout the next steps in problem solving which indicates another element of leadership.

Initially, our purpose was to discover if using an act, reflect, revise mode of action research would produce leadership evidence. Given the above excerpts, we answered this question positively and realized that the reflective process does indeed cause revisions and guide growth within teaching. It is about evolving while enacting praxis (practice) and to do this requires ongoing openness to change. Edwards (2000) states that "teachers who are successful in changing their practices do so through their commitment to change as well as visualizing what that change looks like" (p. 32). This attempt to revise praxis required an inner desire that ultimately amends teaching beliefs, actions and stance.

Discussion

Teachers are generally communal and it is this ability to commune, collaborate and support one another that is indispensable. Naested et al. (2004) suggests:

> We have to make ourselves vulnerable to others . . . Clearly this kind of expression of our inner self demonstrates who we really are . . . . leaders who inquire effectively into their own values and behaviours become more reflective and credible. In effect, they become models for the integrity and

> interpersonal trust needed to explore a host of organization-wide issues . . . In many of today's more enlightened schools, shared leadership is commonly understood in concept and action. Teachers are leaders in a very authentic sense. (p. 31)

As noted herein the classroom leader needs be guided by moral purpose, an understanding of change, an ability to build relationships, and create knowledge while sharing in a coherent manner. No one trait is above the other as it is a linear or curvilinear relationship that can be laid out on paper and to the leader who demonstrates these traits there is a reward.

> Empowerment, also referred to as shared decision-making, is essential to school reform and to the changing demands in a global world. Empowerment translates into teacher leadership and exemplifies a paradigm shift with the decisions made by those working most closely with students rather than those at the top of the pyramid. (Terry, 1999, p. 1)

Teachers who recognize the value of the five noted leadership traits will easily empower both themselves and others we have discovered. Our mode of inquiry leads to empowerment as action research is about connectedness and relationships, hence "without social interaction in human learning, no conceptual learning would be possible" (Sfard, 2003, p. 371). It is important that pre-service teachers have the opportunity to act, reflect upon actions, and then propose revisions especially when taking initial steps in their chosen profession. It is about evolving while enacting praxis (practice) and to do this requires ongoing change which is observed, examined and connected to what was known. Some would argue that it is constructivism in its purest form "grounded in the philosophy of Dewey and the theories of Piaget (1950) and Vygotsky (1978), [since] constructivisim is based on the premise that students learn best when they are able to construct their knowledge, often from hands-on interactions . . ." (Henniger, 2004, p. 258). Our student-teachers are learning, constructing linkages and growing as leaders.

Revealing pre-service educators' educational experiences is essential since it can inspire, prompt and clarify needed behavioral change and it can also expose entrenched or tacit knowledge. This improves a teachers social functioning. The suggestion, for our schools and our pre-service programs, is to confront change and take action. Dewey's concern for social functioning within a society remains engaging today possibly due to the daily dysfunction that reaches us via the media coverage of education and schooling. Pre-service teachers often find fault within the educational system they are plunged into each practicum suggesting it is wanting and that they intend to take a leadership role to make it better.

Our many reflective practice-teaching accounts demonstrated elements of leadership and this is important since:

> Teachers' roles are changing in fundamental and positive ways at the beginning of the twenty-first century. Greater autonomy and an expanded role in educational policy-making has led to 'unprecedented opportunities for today's teachers to extend their leadership roles beyond the classroom.

(Parkay, Hardcastle-Standford, Vaillancourt, & Stephens, 2005, p. 371)

The teachers who complete practicum in this era write about their complex and broad duties which is refreshing since this demonstrates a greater level of democracy and shared power when so much is expected of student-teachers. After all, "teachers' lives are enriched and energized in many ways when they actively pursue leadership opportunities "(Barth, 2001, p. 444). The faculty of education is no longer solely producing teachers; they are supporting the development of leaders.

Conclusion

The evolving action researchers, classroom leaders and teachers are dealing with personal experiences and this informs and steers people in the pre-service year. Our data (written accounts) provided evidence that supports our resulting inferences, discussion and conclusions and demonstrates the leadership within the pre-service classroom during practicum. Yet it is the analysis and synthesis of practicum reflections that illuminates core beliefs, attitudes and needs of emerging action researchers, leaders and teachers. Dewey suggested, "Meanings and purposes of education must be actively constructed by individual persons" (Dewey, 1916, p. 96), and the practicum and theory classes seem to provide this opportunity. Nonetheless, a reproving note:

> Pre-service teachers remain basically unchanged through education programs . . . . In spite of this resilience to educative change, it is argued here that facilitating authentic development of teachers' purposes of education, by changing their holistic beliefs remains a worthwhile task. (Webster, 2004, p. 82)

This cautionary note appears to have merit but may not be applicable to all since the developmental mode of teacher education is often internal, varied and covert. The pre-service experience is about self-analysis and discovery learning however, the requirement to clearly formulate and express ones educational experience via reflection seems understandable and necessary in order to construct well-built internal and external positions. These positions provide fuel for reflective modes which can substantively improve development and leadership.

. . .

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Developmentally Appropriate Technology in Early Childhood (DATEC) in Botswana: In-Service Teachers' Perspectives

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Abstract

Developmentally Appropriate Technology in Early Childhood (DATEC) aims to identify the most appropriate applications of Information and Communication Technology to support the development of children under eight years of age. Botswana has a unique spread of population density and deep-rooted socio-cultural values. There is a need to address the compatibility of these aspects with the application of Information and Communication Technology in the proposed Early Childhood Education programmes throughout Botswana. The researcher felt that the views of the in-service teachers, (who are now students of the Bachelor of Education Programme) in the University of Botswana and have specialized in Early Childhood Education, would be a valuable input towards an appropriate Early Childhood Education curriculum. Hence, a study was proposed to assess the views of the teachers, regarding DATEC in Botswana. Forty (40) fourth year students (Level 400) of Bachelor of Education (Primary) Programme of University of Botswana, who specialised in early years and have a good exposure to Information and Communication Technology constituted the sample. Their views were obtained from a semi-structured questionnaire. Both quantitative and qualitative approaches were used for analysis of data. The findings of the study showed that the respondents strongly believed that an integration of Information and Communication Technology with the Early Childhood Education curriculum is necessary to enhance an overall development of young children. Computers with relevant resources were thought to be the best Information and Communication Technology applications in Early Childhood Education for a developmentally appropriate programme that would provide educational concepts, problem solving skills and creativity. However, they emphasised the need to make the technology socio-culturally compatible to citizens of Botswana (Batswana) to facilitate developmentally appropriate education of young children. The study concluded with a few recommendations.

Keywords: *Early Childhood Education, Information and Communication Technology, Developmentally Appropriate Technology in Early Childhood, Botswana, Socio-Cultural values.*

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Developmentally Appropriate Technology in Early Childhood education (DATEC)

Early Childhood Education requires rich learning experiences to facilitate development in cognitive, social, emotional, language, physical and motor aspects. During the important years of Early Childhood Education that span the human life from birth to age of eight years, children need to be provided with Developmentally Appropriate Practices that can ensure age appropriate, individual appropriate and culturally appropriate educational material (eduware) for an overall development. The Early Childhood Education environment is changing today and Information and Communication Technology is used carefully in developmentally appropriate ways for children. The integration of Information and Communication Technology as the modern technology that can store, retrieve, manipulate, process, transmit and receive different kinds of electronic and digital information i.e. voice, video, text, data and different forms of communications (Tutor2U, 2008) needs to be used carefully in developmentally appropriate ways for Early Childhood Education. This would in return benefit both the young children and the community as a whole. This would have a positive effect on children's learning and development leading to safe integration of the technology into pre-school curriculum.

Information and Communication Technology that is applied to Early Childhood Education worldwide are computers with suitable software, video films and games, the Internet, video conferencing, programmable toys, interactive white board, digital images, television, radios, satellite communication terminals, electro-mechanical learning kits and many more. For an optimum utilisation of Information and Communication Technology into Early Childhood Education there is a need to identify the most appropriate applications of Information and Communication Technology to support the development of children under eight years of age. The concept of Developmentally Appropriate Technology in Early Childhood education (DATEC) thus emerged.

In the European context (UK, Sweden & Portugal), the Developmentally Appropriate Technology for Early Childhood (DATEC) was a two year research project and development initiative funded by the European Union in association with the European Network of Excellence for Intelligent Information Interfaces (i3). DATEC aimed to identify the most appropriate applications of Information and Communication Technology to support the development of children under eight years of age, and published exemplars and guidance material for parents and early childhood educators at the end of 2001. (IOE, London, 2002, http://www.ioe.ac.uk /cdl/datec/datecfrm1.htm). DATEC found that the best applications of Information and Communication Technology in Early Childhood Education in European countries were (Iram & John Siraj-Blatchford, 2007) educational that encourage collaboration, integration and play, that is under

a child's control, and something that is transparent, intuitive and do not contain violence or stereotyping, but provide awareness of health and safety issues while facilitating educational involvement of parents.

DATEC in Botswana

Botswana achieved a primary school enrolment ratio of 92% as early as 2000 (Republic of Botswana, 2003). However, the multiple indicators survey in 2000 estimated that only 9% of children have had access to preschool education. Significant improvement in these figures has not taken place. The need to strengthen the Early Childhood Education in Botswana has now been recognised. It is reliably learnt that the MOE has recently proposed to introduce pre-primary schools, attached to primary schools, and wishes to post some of the primary school teachers who specialized in Early Childhood Education to the Pre-Primary (4-6 years) and Lower-Primary (6-9 years) classes. The curriculum development is in progress and therefore it is most appropriate time to introduce the concept of DATEC in the Botswana context.

The researcher, a faculty member of UB, closely involved in the Bachelor of Education programme in primary education had access to these in-service teachers. The researcher proposed the present study, as it was felt that the views of these teachers from all over Botswana, who have specialized in Early Childhood Education and have a good exposure to Information and Communication Technology, would be valuable input towards the constitution of an appropriate Early Childhood Education curriculum. The insight of these teachers regarding the most appropriate application of Information and Communication Technology in Early Childhood Education (pre-primary and lower primary children in Botswana) would strengthen the curriculum.

Objectives

The main aim of the study was to assess the views of the respondents, who were from all over Botswana and have practical experience of handling children up to the age of eight. It was essential to gauge their confidence and experience on the introduction of Information and Communication Technology in Early Childhood Education. The researcher needed to understand (a) the nature of eduware that would be required; and what is currently available in Botswana; (b) gauge the extent to which the Early Childhood Education community are ready to understand and accept Information and Communication Technology; and if so, (c) do they have enough infrastructures to support it. Hence, the researcher identified the following objectives:

- To assess the use of Information and Communication Technology in Early Childhood Education
- To gauge the E-Readiness of Early Childhood Education Stakeholders (Teachers)

- To find out the most Appropriate Technology in all facets of Early Childhood Education
- To evaluate the introduction of the best Information and Communication Technology application in Early Childhood Education

Methodology

A survey research design was adopted for the study. A purposive sampling technique was used. The population used was the participants of Bachelor of Education programme (Departments of Primary Education and Home Economics Education) who were recently teaching in primary schools spread across the country, and were undergoing in-service training at the UB. Level 400 students were chosen as they were completing and getting ready to go back to the fields. Forty (40) Level 400 in-service teachers who specialised in Early Childhood Education, constituted the sample. Taking cues from Gay and Airasian (2003) the most appropriate instrument to use was a questionnaire and not a detailed interview as that was the best option on the ground at that moment. Their views were obtained from a semi-structured questionnaire, which had both open and close-ended questions. The questionnaire was designed covering the important areas that could address the issues regarding the use of Information and Communication Technology in Early Childhood Education, the most appropriate technology in Early Childhood Education, the E-Readiness of the Early Childhood Education teachers and the best application of Information and Communication Technology in Early Childhood Education. The researcher used both the quantitative and qualitative approaches to analyse the data. Tables and graphs were used to present the quantitative data and their recorded responses were quoted verbatim wherever necessary.

Results and Discussions

The findings lead to introspection on a number of issues on developmentally appropriate technology applicable to Early Childhood Education in Botswana.

Demographic Data

In the total sample of 40, 35(87.5%) were female. This is a true reflection of the reality as most teachers at the Early Childhood Education level are female. There is a gender bias in the teaching profession in schools and particularly in Early Childhood Education. As far as there age is concerned, a majority of them clustered between the age group of 30 and 45 years; 21 (52.5%) had a Primary Teachers Certificate (PTC); a few (10%) were even holding the very basic secondary education qualification. This is a challenge to the very Early Childhood Education programme of Botswana. The findings revealed that majority of the sample (90%) had acquired teaching experience in primary education; only 11 (27.5%) had any experience in the Early Childhood Education sector (0 to 8 year olds). This demonstrates the infancy of the Early Childhood Education programmes in Botswana.

Use of Information and Communication Technology in Early Childhood Education

Before dwelling into developmentally most appropriate technology in Early Childhood Education, it was necessary to assess whether the Early Childhood Education teachers feel the necessity of using Information and Communication Technology in Early Childhood Education in the Botswana context. Therefore, pertaining questions were asked and the entire sample (100%) felt that there is a need to use Information and Communication Technology in Early Childhood Education curriculum. They reaffirmed the need to approach the higher authorities to instil Information and Communication Technology in schools, as Information and Communication Technology helps in an effective teaching/learning process. They indicated that an exposure to Information and Communication Technology in early years would lead to (a) brain stimulation, (b) good foundation, and (c) technology empowerment. A sizable number of them envisaged Information and Communication Technology for facilitating an overall development of a child (Table 1):

Table 1 Overall Development of Young Children through Information and Communication Technology

Cognitive Development	Social Development	Creativity	Physical Development	Emotional Development
37(92.5%)	35 (87.5%)	33 (82.5%)	28 (70%)	27(67.5%)

The respondents felt that Information and Communication Technology would help in:

1. Development of cognitive skills like problem solving skills through computer games and video games; and the use of the Internet for information processing for young children (92.5%).
2. Enhancement of social aspects such as communication, cooperation and sharing experiences in learning though more turn taking behaviour, which form attachments with others and show participation in educational & cooperative play activities (87.5%)
3. Enhancement of creative aspects by computers tools like drawing tool and the technology that could facilitate creative activities like story telling, songs and the use of Internet (82.5%)
4. Facilitation of physical development by video films (displaying exercises), computer programmes that can enhance Eye-Hand Coordination and Finer-motor Coordination, and by teaching them various postures while handling the Information and Communication Technology tools (70%).

Inculcation of emotional affective skills like patience, temper, stress with cartoons, films, computer and video games, interactive software, stimulating pictures, stories etc.(67.5%).

A majority (80%) of them advocated for infusion of Information and Communication Technology in Early Childhood Education programme very much like Carr & Claxton (2002) who stated that the Information and Communication Technology should be integrated in Early Childhood Education to support the development of positive dispositions towards learning. Utilising computer for an overall development and integrating it into Early Childhood Education curriculum physically, functionally, and philosophically with clear goals and objectives (NAYEC, 1996) is necessary. Such integration and infusion for an overall development would benefit young children and increase the quality of the teaching/learning process in Botswana.

E-Readiness of Early Childhood Education Stakeholders (Teachers)

It was inspiring to see the response of the subjects who showed a positive interest towards the use of Information and Communication Technology in Early Childhood Education. The next question that automatically follows is 'are we ready in Botswana to call for a situation like this where we can use Information and Communication Technology in Early Childhood Education'?

Around 14(35%) of them felt that Botswana as a country is not ready for this venture due to scarcity of funds and infrastructures in terms of Early Childhood Education centres, classrooms, Information and Communication Technology equipments that Early Childhood Education professionals need to use for teaching/learning purposes. They expressed as:

> "We are not ready to use Information and Communication Technology in Early Childhood Education in Botswana due to lack of funds and shortage of resources"

They also faced problem of follow-up at home, and argued as Crook (2003) that it is necessary to develop more applications that provide a continuity of educational experience between the home and the pre-school environment.

In addition, most of them 37 (92.5%) indicated a lack of appropriate Information and Communication Technology eduware that are developmentally appropriate in terms of socio-cultural aspects. They felt the need for the Early Childhood Education professionals to make special efforts for using Information and Communication Technology in Early Childhood Education by designing developmentally appropriate materials for mixed ability groups of children as Botswana has a multi-cultural context.

However, around 36(90%) felt that as far as professional readiness is concerned, they could go ahead with this exercise of using Information and Communication Technology in Early Childhood Education, as they have acquired both Early Childhood Education and Information and

Communication Technology skills and know how to handle tools like computers, video games, video films etc. and infuse them in Early Childhood Education. It could well be emphasised here that it is of utmost importance to make a suitable atmosphere that could offer resources both in terms of infrastructure and eduware.

Most Appropriate Technology in all facets of Early Childhood Education

It was necessary to assess the Early Childhood Education professional's views regarding the most appropriate technology to be used with young children in the Botswana context.

According to Grant (2003):

> A Is not for Apple Anymore, A is for Assistive Technology, B is for Babies and C is for Computer. (p.1)

The respondents of the present study too aligned themselves mainly towards computers (Table 2). One of them said:

> "Computer is the most appropriate tool as children can see moving pictures, hear songs, and also communicate with it."

Table 2 Appropriate Technology for Early Childhood Education

Computer	Programmable Toys	Video Games	Video Films
37(92.5%)	34(85%)	34(85%)	28(70%)

Table-2 shows that the majority (92.5%) of them responded that the computer is the most appropriate application of Information and Communication Technology in Early Childhood Education because computer programmes provide interactive, flexible, diverse, and user-centred learning. It allows the users to actively participate at their pace and perform a task repeatedly. They emphasized that the use of Multi Media packages is very important in Early Childhood Education as it provides video-audio clippings, animation, simulation, sound, graphics, which evokes a child's sensory perception to make a child's learning more effective at early childhood years. They rated multimedia better than posters, static photographic material and limited video clippings, which they felt were rigid, passive and non-interactive.

The respondents (Table 2) also rated the Internet as very important. As (Lisa Janicke, 2004) puts it:

> Teacher educators in the early childhood education (Early Childhood Education) and child development fields can use the technological capabilities of the Internet to expand the boundaries of the classroom and enrich the learning experiences of their students. The Internet is a vast system of computer networks that exchange electronic data, thereby facilitating communication and access to information. (p.1)

Probably knowledge of how to integrate the Internet resources into Early Childhood Education is ideal for any Early Childhood Education professional.

They further indicated video games and films, and programmable toys as appropriate technology for Early Childhood Education. Around 85% felt that programmable toys and video games are appropriate technology, whereas only 70% considered video films as an appropriate application in Early Childhood Education (Table 2).

Technology, both conventional like radio, television, tape-recorders, electronic and electro-mechanical construction kits, scientific models and unconventional like interactive white boards, video conferencing, satellite TV and radio broadcast sets that can run easily on batteries and generators, High Frequency (HF) radio, Internet connections using very small aperture satellite or HF Communications were not mentioned at all. It perhaps indicates that there is a limited exposure to the wider spectrum of technology for learning. In addition, their confidence and in the area of computer and multimedia is perhaps greater than that in other tools.

Introduction of the best Information and Communication Technology application in Early Childhood Education

For any application of Information and Communication Technology to be successful, proper practices and procedures, are necessary. Therefore, it was necessary to gauge the views and experiences of the respondents regarding the best Information and Communication Technology application in Early Childhood Education in Botswana's context.

We have seen that the majority recommended that computer is the best technology for Early Childhood Education. To address the issue of best Information and Communication Technology application in Early Childhood Education, questions pertaining to 'how they would use Information and Communication Technology' were asked. The findings showed that they wanted to use computer to provide educational concepts (82.5%), problem solving skills (80%), communication and collaborative skills (75%) through appropriate eduware (Table 3).

Table 3 Information and Communication Technology and its Use in Early Childhood

Educational Concepts	Problem Solving Skills	Communication & Collaborative Skills	Secure Use of Information and Communication Technology Tools
33(82.5%)	32(80.0%)	30(75%)	24(60%)

Computers engage children in responsive interactions, high-level of spoken communication and cooperation and initiate interactions more frequently and in different ways than when engaged with traditional activities (NAEYC, 96) and encourages longer, more complex speech and development of fluency (Davidson & Wright, 1994). A child can learn about an

educational concept with the help of a developmentally appropriate multimedia package (Bose, 2005). The potential gains for Information and Communication Technology in Early Childhood Education are tremendous. Children can gain improved critical thinking, problem solving skills, enhanced mathematical thinking, increased creativity, and a higher level of language development (Nastasi & Clements, 1994).

Children should protect and take care of their computers. Around 24(60%) felt it was necessary to provide computer and Internet security skills in young children. This would not only enable them to use Information and Communication Technology tools and devices efficiently but would also teach them a healthy habit of using it in a secure manner. The respondents felt that there is a need to use security codes, display safety use, give instructions, and monitor computer related activities constantly so that children's access to watching pornography and other negative elements could be blocked.

While dwelling upon the forte, that is computers, they expressed a strong need for using developmentally appropriate eduware, computer software in this case. The findings of the present study related to the National Association for Education of Young Children (NAEYC)'s Position Statement (1996) which states as:

> …. in any given situation, a professional judgment by the teacher is required to determine if a specific use of technology is age appropriate, individually appropriate, and culturally appropriate. (p.1)

The respondents wanted to use an age-specific eduware and one stated as:

> "I will use age-specific technology like computer games, multi-media programmes for teaching young children in my class".

They strongly recommended the use of small size Early Childhood Education classrooms so that the teacher could cater to the individual differences between different children. They felt that no amount of innovative technology could be effective if the teacher student ratio is not reduced.

They further raised a concern regarding the socio-culturally appropriate eduware. They observed that most of the available eduware like multi-media programmes, computer games, video games, video films etc. are relevant to western cultures and not applicable to the Batswana context at all. Some expressed:

> "Botswana is multi-cultural and children need to understand where they come from".

The respondents insisted the use of stories, pictures, games, dramas, language, music, dance, food, vegetables, animals, clothes, beliefs, celebrations, myths, customs, national days etc. related to Botswana.

The respondents volunteered to contribute towards this effort utilizing their multi-cultural background and experience in Early Childhood

Education & Information and Communication Technology. They further emphasized that Early Childhood Education trained teachers who are part of the society, can play a very important role in development of socio-culturally appropriate eduware as they have an in-depth knowledge of Early Childhood Education and have the basic knowledge of Information and Communication Technology too. Some expressed as:

> "Now I am competent and can contribute to the development of software for Early Childhood Education as I had training in Early Childhood Education and Information and Communication Technology skills".

Therefore, to exploit the computer capabilities fully both by the teachers as well as the students, an effort to develop Botswana's own socio-culturally compatible material needs to be developed with the help of trained Early Childhood Education teachers. The Early Childhood Education teachers, who are the best agents for this exercise, can work hand in hand with the computer software developers and bring out the best possible eduware that is relevant to the young Batswana. This confirms Hosein's (2007) study on Educational Software design with young children with reference to Trinidad as follows:

A study using questionnaires and observation was conducted to review existing software and suggest improvements that could be made to them. The results show that many packages still need a lot of improvements before the software can be extremely beneficial to students. The results of the survey also show that although general "all-country" packages are useful, local developers in each country should attempt to write packages that explore the cultural heritage, geography and history of the country and also customize certain parts of the software that are related to curriculum content. (p. 870).

Discussions on crosscutting issues

Upon careful reflection on these findings, the researcher felt the need to examine the following crosscutting issues that cover more than one aspect of the study. It is well known that the foundation of a child's development is at the Early Childhood Education level and this is where the basic socio-cultural values of the nation need to be inculcated in the child.

Before moving on to further discussions, it is necessary here to understand the unique characteristics of the land and the people of Botswana.

Land, People and Culture of Botswana

Botswana, a land locked country sharing its borders with South Africa, Namibia, Zambia and Zimbabwe is sparsely populated with just over 1.7 million people living in an area of 582,000 square kilometres. Since gaining independence in 1966, Botswana has performed exceptionally well economically, scoring one of the world's highest growth rates. It is now a middle-income country with a per capita GDP of $11,200 (2006). Botswana

is populated by no less than 20 different tribes with some originating from the neighbouring countries of South Africa, Zimbabwe, Zambia, Angola and Namibia, giving the country a rich diversity of cultures.

The foundations of the cultural values are Botho (Humanity), Morero (Consultation and Consensus Building) and Tumelo (Religion). Botho refers to the possession of the good attributes associated with a good human being, with good manners, helpfulness, politeness, humility and consideration for others, respect for older people. Morero refers to consultation and consensus building within society, at inter-personal, family, and community levels; is an invaluable asset in the ability to reach and sustain agreements.

Tumelo refers to the wide-ranging religious practices because of the diversity of tribes and their origins. Today Christianity accounts for around 80% of the religions practised in Botswana, although many people still maintain dual religious practices, between Christianity and traditional religious worship. Key features of Botswana's culture have, survived negative influences of change and modernisation (Beliefs, Values and Practices, 2008).

Observing the unique spread of population density and deep rooted socio-cultural values in Botswana, two crosscutting issues emerge that are unique to this country as follows:

- Alignment of the available eduware to the basic Batswana values: The respondents asserted the need to ensure that DATEC in Botswana does align to the values of Botho, Morero and Tumelo. The respondents reacted actively and expressed strong views in support of these needs. They confirmed that the currently available computer software addresses the western culture and values and does not meet the local needs. They felt that best application of Information and Communication Technology in the Early Childhood Education programmes calls for production of socio-culturally appropriate computer software to Batswana. They emphasised the eduware to be compatible with the deep-rooted socio-cultural values of Botho, Morero and Tumelo. These, they felt, would help the children to acquire good attributes and make them humble, polite and respectful; encourage them to build consensus and sustain agreement; and understand the traditional values. They have further gone ahead to volunteer their services to assist software development professionals and companies to develop such programmes for the Early Childhood Education community of Botswana.

- Exposure to a wider spectrum of technology: Botswana is a very sparsely populated country with a population density as low as three people per square kilometre. This poses severe challenges to infrastructure necessary for Information and Communication Technology in Early Childhood Education to reach every settlement

where necessary. To meet this challenge, there is a need to consider, in addition to conventional methods, unconventional methods for the delivery of Information and Communication Technology. The researcher is referring here to unconventional technologies like satellite TV and radio broadcast sets (that can run easily on batteries and generators), High Frequency (HF) radio, Internet connections using very small aperture satellite or HF Communications, other technologies that are portable and can run on batteries. The findings showed that the respondents have not made any remarks on these unconventional methods, which is rather interesting as this would mean that either Information and Communication Technology reaches all the locations and settlements that they are aware of or that they have had no exposure to the fact those unique and unconventional methods exists for addressing the outreach problems in remote areas.

Conclusion

Information and Communication Technology is changing young children's world in profound ways. A careful integration of Information and Communication Technology into the Early Childhood Education curriculum virtually enhances every aspect of development, i.e., cognitive, social, emotional, language and fine motor skills (Bose, 2005). Botswana is no exception. From the findings of the present study it is understood that an integration of Information and Communication Technology with the Early Childhood Education curriculum is necessary for DATEC in Botswana. Amongst a wide spectrum of technology that could be used in Early Childhood Education, the computer programmes and the Internet could perhaps be the most appropriate technology for Batswana. The findings of the study emphasised on the production of developmentally appropriate eduware that is specifically socio-culturally compatible with the deep-rooted socio-cultural values of Botswana. Western educational material not aligned with Batswana cultural aspects of Botho, Morero and Tumelo were not accepted by the Early Childhood Education teachers of Botswana. A collaborative effort was proposed by the study, both for the Early Childhood Education professionals and the software developer, to produce an amicable computer based educational software for young children of Botswana. It was also highlighted that the respondents did not have much awareness regarding unconventional technology that could be used to reach the remote areas. Thus, efforts must be made to provide socio-culturally appropriate educational software for young children of Botswana, before they are infused in Early Childhood Education, so that they are acquainted with Botswana's rich culture, rather than aping cultures that do not belong to Batswana. And provision of a relevant course covering wider spectrum of technology would perhaps meet the challenges of reaching the sparsely populated country, as the teachers need to be exposed to unique and

unconventional methods that exist for addressing the outreach problems in remote areas.

To conclude, it can be stated as 'DATEC in Botswana calls for development of socio-culturally appropriate computer software to Botswana'.

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Biographic statement

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