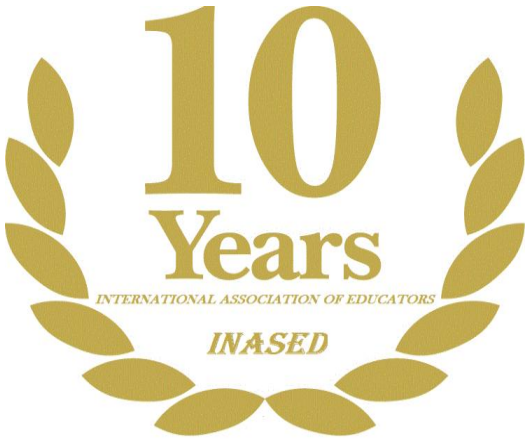

IJPE

International Journal of Progressive Education

Volume 10 Number 1 February, 2014

An Interactive Journal Sponsored by International Association of Educators (INASED)

International Journal of Progressive Education

Frequency: Three times a year; February, June, and October

ISSN: 1554-5210

Indexing/Abstracting:

1- OCLC-WorldCat: http://www.oclc.org/worldcat/default.htm
2- Journal Finder: http://journalfinder.uncg.edu/demo/
3- Directory of Open Access Journals: (DOAJ): http://www.doaj.org/home
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Single Issues and Back Issues: $25 USA (Canada: $35; Rest of World: $35)

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February 2014

Articles

Occupy Activists, Moved or Not by Secondary Teachers

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Abstract
This article explores whether and how activists who identify with the Occupy movement think of their secondary schooling as influential upon their activism. Testimonies of six activists from two small focus groups reveal a range from those who claimed no such influence to those who saw a significant connection. The diversity among the six was limited: five were male; two identified themselves as mixed-race, and the other four as white; three were younger than twenty-seven. Each individual's account of various influences other than education was unique. When the topic turned to secondary education, though, there were intensified expressions from sadness to anger to irony to delight among the participants. As the findings of this study show, formal education has hindrances and possibilities in fostering change agency for social justice. Increasing the possibilities is the work of critical educators.

Keywords: Occupy movement, Secondary schooling, Testimonies, Critical educators

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Introduction

Why study Occupy activists' influences from secondary teachers? Regardless of the uncertain future of the Occupy movement, it has made history with its two months of widespread demonstrations that continued around the clock until police ended them by force. The historic forces of the global justice movement and the Arab Spring came together during a lingering recession and produced a powerful wave of protest aimed at Wall Street and the neoliberal economic system. Movements throughout US history have accounts that mainly focus on the leaders. The Occupy movement in its horizontal structure, though, provides no leader figure. If scholars and journalists want information directly from individuals in the movement, there are only rank-and-file activists available. These activists have decided to protest not by persuasion from a charismatic leader but rather by some combination of ideas and personal economic hardship. What part did secondary teachers play in uncovering the ideas?

I think back to my own beginnings in activism when, as a young graduate student, I joined in the demonstrations in the mid-1980s to pressure the university to divest from assets connected to South Africa's apartheid regime. At that time, I was about five years out of high school. Looking back now, I can think of three high school teachers who influenced me by challenging me to think critically and to use my imagination. They were not the greatest influence toward my eventual activism, but they were significant. A larger influence came from my family. My father and uncle were able to disagree in many political discussions while continuing to be civil toward each other. They probably were not aware of how much I listened.

Could schools have an atmosphere similar to the one in which my father and his brother were able to talk and listen to each other? What if teachers could model discussions of competing ideas and then allow students to follow suit after researching issues carefully?

The Occupy movement is finding its identity in life after occupations. It has its roots, and it will have its branches. When individuals look at their own roots of activism, some will see secondary teachers. What do they see in those teachers?

Theoretical Framework

The Occupy movement has its ideological origins in its opposition to neoliberal capitalism. It has a structural foundation on anarchist principles of decentralized, non-hierarchical power and consensus-based decision-making. Scholarly work on anarchist educational theory has not proliferated anywhere near to the extent that it has on Marxist educational theory. Haworth's (2012) edited book *Anarchist Pedagogies* is an important new addition. Suissa (2006), who has the only recent work with a comprehensive view of anarchist philosophy and theory as applied to education, provides a strong rationale for bringing anarchist theory out of the shadows of misconception and into the light of contemporary leftist educational discourse with clear distinctions from Marxist and liberal traditions. The massive onset of the Occupy movement confirms that anarchist theory and practice has a role to play in the present and future of the left in the US, and education will be among the social and cultural venues for the ongoing development of leftist identity.

While citing several anarchist theorists, Abraham DeLeon (2008) defines anarchism as follows:

> …a body of political thought that seeks to abolish and challenge rigid hierarchies (like the State), rethink and dismantle capitalist ideological structures, disrupt modes of forced coercion, build a society based on communist aspirations, free people's desires from historically oppressive social norms, and create organic and communal societies based on mutual aid and social justice. (p. 123, parenthesized phrase in original)

DeLeon states that anarchist praxis in education involves more than curriculum and instruction within school walls; it also involves direct action against conservative and neoliberal policies such as high-stakes testing. His conclusions are that advocates of critical pedagogy need to make space for anarchism and that anarchist pedagogues need to create networks in order to advance their visions, goals, and strategies.

Another educational front critically important to the Occupy movement is multicultural education. The horizontal structure of the movement guards against white males using their unearned privileges to jockey for leadership. At the same time, though, this structure has given way to a perceived *de facto* hierarchy in which white privilege is evident. Emahunn Raheem Ali Campbell (2011), in his article titled "A Critique of the Occupy Movement from a Black Occupier," writes, "If one is to call it a movement, particularly if one looks at its numbers, it is without question a *white-led movement* that primarily deals with concerns of *white middle-class youths* (Campbell's emphases)" (p. 44). Campbell highlights the example of white college students in the movement calling for student debt cancelation and failing to notice or care how "black people are twice as likely to visit a jail or prison cell than a college classroom" (p. 44). Campbell asserts, correctly in my opinion, that the Occupy movement will not be sustainable if there is not a concerted effort to dismantle the white privilege from within its own ranks. Multicultural education will need to intensify its focus on white privilege if it is to contribute toward a more inclusive, equity-driven movement for all among the 99 percent. A growing body of literature on white privilege and the annual White Privilege Conferences held since 1999 are positive signs, but the Occupy movement shows that challenges still lie ahead. For starters, more of the works of leading scholars of white privilege need to become required readings in teacher education courses (MacIntosh, 1988; Tatum, 2003; Howard, 2006).

Methods

This work is a case study. I read various documentations of the Occupy movement and observed and participated in events, including planned meetings and demonstrations. I interviewed activists in two focus groups, primarily to find connections they made between their secondary schooling and their current activism.

I chose to employ a qualitative case study because I want to capture narrative patterns from multiple sources within a bounded system in a specific period and a specific place (Creswell, 1998). The period in which I gathered data was May 2012 to February 2013. This was a critical time for the Occupy movement as it attempted

to solidify a transition from occupying physical spaces in parks to occupying spaces in day-to-day political discourse in a sustained manner. The place in this study is New York City, where the Occupy movement had its epicenter during the two-month occupation of Zuccotti Park from September 17 to November 15, 2011. All of my observations and focus groups took place in New York City.

Data Sources and Evidence

I have studied documents and observed events to educate myself on the central goals and strategies of the movement. I have not been able to read every kind of writing that has emerged, but I have perused samples among declarations, newsletters, blogs, articles, and books. I could never attend every kind of event, but I hoped to observe a few planning meetings and a few larger and smaller demonstrations. On a couple of occasions, I went to an announced meeting that ended up not happening. The online events calendar for Occupy Wall Street (OWS) announced at some point in the fall that it was making efforts to remove ongoing postings for groups that were no longer meeting. As of November 25, 2012, the online calendar showed that in New York City alone there were 91 Occupy-affiliated "working groups" (Occupy Wall Street New York City General Assembly, 2012). I tried to contact the People of Color working group (249 reported members) and the Anti-Racist Allies (44 reported members) via email, but I received a reply from neither. I also was unable to make a contact with Occupy the Hood, which, according to its Facebook page (Occupy the Hood NY, 2013) as of this writing, has a mission "…to get POC [people of color] more involved in the Occupy movement." The most recent post on that Facebook site is from more than two months ago – March 12, 2013. In the end, I had notes from only one large demonstration – May Day at Union Square. I also had notes from only one meeting in July, 2012, of a group calling itself Occu-Evolve.

My original plan for interviews met with a couple changes. I had planned to hold individual interviews of activists in the age group of 18 to 29 in order to increase the likelihood that secondary teachers whom they named as influential might still be teaching; finding and interviewing such teachers was in the original plan. I later decided to drop this age restriction and adjusted my invitation letter to indicate that I would interview adults of any age. As the summer of 2012 ended, I did not have a single call from an activist wanting to participate. I decided to try conducting small focus groups. On October 22, I went to the historic Trinity Church at Broadway and Wall Street, where a group of about a dozen activists was demonstrating day and night on the sidewalk. I simultaneously interviewed two who were sitting together. Colder weather put an end to that gathering when I checked again in mid-autumn, and I set my sights on conducting a presentation and a focus group at an activist bookstore called Bluestocking. This event occurred on February 12, 2013, and four activists stayed after my presentation on a history of activism from teachers in order to participate in the focus group.

I ended with only six testimonies from two focus groups, but I am satisfied that there is a core of rich data. The two small focus groups of Occupy activists have provided information regarding the extent to which secondary schooling made a difference toward individuals' activism. I began each focus group by noting each individual's age, sex, and self-identified ethnicity, race, or nationality. I asked each participant to explain how or whether she/he was an activist before the Occupy

movement. I then asked each to explain why and how she/he had been involved in Occupy. Without mentioning education, I asked each individual to describe the various influences toward her/his activism. If a person did not mention secondary schooling, I then asked why that was not a source. If a person did mention it, I asked for details.

Data Collection Challenges

As of this writing, a year and a half has passed since the occupation of Zuccotti Park met with forced removal. In recent months, there has been very little press about what remains of the Occupy movement. On September 18, 2012, the New York Times (Moynihan, 2012) reported on the demonstration marking the one-year anniversary of OWS with the title "185 Arrested on Occupy Wall St. Anniversary." The report focuses on clashes between protesters and police while providing only a few lines to focus on one activist's spoken words. The accompanying two-minute video clip includes efforts by police to suppress all photography. The Times has run a few brief reports on Occupy Sandy, the network of Occupy activists that began organizing relief efforts through its social media immediately after Hurricane Sandy.

The post-Zuccotti phase of the Occupy movement in New York City had a grand moment with the May Day celebration on May 1, 2012 at Union Square. I was present as a tenor for the New York City Labor Chorus, which performed a brief set on the stage. The chorus followed performances by Tom Morello and the Occupy Guitarmy, Das Racist, and a hip-hop deejay that had a crowd of young people dancing. It was an incredible experience from the stage to hear this lively beat and to see the dancing crowd before our set began. Signs with themes from the Occupy movement were ubiquitous. There was a soaring euphoria shared by activists of all ages on that warm, sunny afternoon.

I was certain after that day that I would have an easy time finding activists willing to participate as interviewees in my study. I was in for a surprise. As my early summer teaching ended in early July, I embraced the few weeks I would have to concentrate on research instead of teaching and service. The OWS online events calendar announced a meeting of the Vision & Goals Working Group on July 5 from 5:30 to 7:00 PM in the Atrium, a large, open indoor gathering place with shops, food, tables and chairs at 60 Wall Street. I went to find no group sitting together. I tried another event listed for July 25 from 4:30 to 7:00 PM for the Organization Working Group at 666 Broadway in the office space of the Center for Constitutional Rights. I sat in a waiting room for several minutes until a young man came and told me that the meetings for that group ended after numbers had dwindled. He told me of a working group that he knew would still be meeting, though. It was called Occu-Evolve, and its meetings were Friday evenings in none other than Zuccotti Park.

I went to the Occu-Evolve meeting on the evening of July 27 and joined a group of about 20 people – diverse in age, gender, and race – in the middle section of the park on an unusually cool evening for summer. An energetic African American man, around age 40, facilitated the meeting. He announced that New York City currently had seven OWS general assemblies and that three had mission statements. Someone suggested that the group take time for introductions, and everyone agreed.

A few of the younger attendees held up hands and waved fingers to show approval – a custom adopted by OWS general assemblies in their meetings. When it was my turn to introduce myself, I gave my name, my occupation as assistant professor of teacher education at SUNY Empire State College, and a quick announcement that I was a scholar in solidarity and that I would pass around copies of my invitation letter for interviews in my study. I stayed for the entire meeting, listening and taking notes. There was time for "report-backs" on recent events. Then a white, male CUNY faculty member, approximately age 40, gave a talk for about 15 minutes on police brutality and the need for mass direct action. Next, there was a long period for open discussion on the main topic, which was how the OWS movement might consider activity in elections in addition to direct actions. In attendance was George Martínez, a Puerto Rican man in his thirties in the midst of running for US congress in New York's 7th congressional district who went on to win less than three percent of the vote. Martínez spoke of his allegiance to OWS and the organization Bum Rush the Vote. Another organizer for the latter, an African American man also in his thirties, announced a community organization meeting for registering voters. He also declared that he would run for city council. An Asian woman in her 40s spoke about voter repression, and there was some group discussion on whether to support Democrats or third-party candidates. About half of the group, mostly younger people, disappeared during this lengthy discussion. A white woman in her 20s who did stay had been recording the entire meeting with a small video camera. She told everyone that she had moved from Cincinnati to join the occupation at Zuccotti Park, and she gave her name and invited people to find her and the video link on Facebook. When the meeting was winding down, she suggested that everyone close with a song. Nobody knew a song to suggest, and finally there was an agreement to end with a rhythmic chant, repeating the word "unity" a few times. I left a couple minutes later without anyone expressing interest in an interview. I hoped that someone might contact me later from the information on my invitation letter, but that never happened.

In September I attended to a meeting of the New York Collective of Radical Educators (NYCoRE), a group composed mainly of K-12 teachers in the New York City public schools. The main attraction for the meeting was a simulcast video of two teachers in Chicago who had been involved in the recent strike. I had been to a couple of NYCoRE's general meetings in the Spring, when one of the breakout groups was involved with OWS while focusing on the anti-democratic mayoral control of the New York City public schools. The OWS group was not continuing in the fall, but NYCoRE's core leadership group approved my invitation letter for an announcement, which I voiced to all attendees. When the meeting ended, I was able to give one letter to a young man who asked me for it. I never received a call. I thought that teachers of NYCoRE would be eager to participate in my study, but then I remembered how busy I had been as a high school teacher in the St. Paul Public Schools, especially as a new school year was starting.

After all of these disappointments, I finally had some success with the two small focus groups mentioned above. Why had it been so difficult to find activists who would be glad to take 20 minutes for an interview about what influenced their activism? Perhaps, unlike the media stereotypes given for OWS activists, they were busy people with demanding or multiple jobs. Perhaps they did not trust me as scholar, and that would be understandable. Zinn (1990) wrote that educators and writers mostly are among the guards of the establishment while the masses are the

prisoners. He foresaw an important number of the Occupy movement, which he did not live to see, writing that "great change with little violence…is possible because the more of the 99 percent that begin to see themselves as sharing needs, the more the guards and the prisoners see their common interest, the more the Establishment becomes isolated, ineffectual" (p. 582). Building that kind of unity in a movement takes a great deal of time and effort, and any hesitation by activists in trusting academic scholars like me is completely understandable.

Findings from Focus Groups

With only six participants from two small focus groups, I certainly cannot make sweeping generalizations about all activists of the Occupy movement. This is only one case study, and I hope that others will conduct similar studies. The advantage of having only six participants is that I can remember each one fairly well. I remember their facial expressions as though I had spoken with them a week ago. This kind of memory is not possible when one is working with transcripts from large numbers of participants.

My focus is on what each participant mentioned about influential secondary teachers. Only two were unable to recall an influential teacher, and both expressed skepticism whether any school as an institution could generate a source of change among its personnel. The other four were happy to remember at least one inspiring teacher.

Two Demonstrators

On the evening of Monday, October 22, 2012, there was an autumn chill in the air of lower Manhattan. At 8:00 PM, I left my weekly rehearsal with the New York City Labor Chorus at the headquarters of the United Federation of Teachers, the union representing teachers in the New York City public schools. A couple blocks to the north, on the sidewalk in front of Trinity Church at Broadway and Wall Street, there were about a dozen activists, some of whom appeared to be camping out for the night. I stopped to ask a man and woman sitting together whether they would be willing to participate in an interview together, and they agreed without hesitation. They were sitting on the sidewalk with some cardboard and other materials for insulation, and I sat there on the sidewalk with them, bringing out my smartphone for its voice recorder. I told them to feel free to give me only a pseudonym. The woman, age 34, identified herself as Occupy Kat. The man, age 50, gave his name as Apollo. When asked to identify themselves in terms of race, ethnicity, and/or nationality, Kat, with light complexion and long brown hair, stated "Californian" with Kickapoo and mixed European roots. Apollo, tall and slender with mixed-race complexion, identified his heritages as Greek, Black, and Native American.

Kat arrived in New York City about 36 hours after the police cleared the occupation at Zuccotti Park. She came for psychology training and stayed for further graduate studies. She spoke of a high school social studies teacher who influenced her.

> Through him we did Model United Nations, and it was always interesting. You had to be the country you were assigned even if you didn't agree with that country. It was always kind of cool to see how involved the kids would get,

> representing the countries they were [and] had no idea what it was four months earlier. (Occupy Kat, personal communication, October 22, 2012)

Kat recalled with a laugh an unexpected episode in which students representing a Muslim country delayed a debate by taking time for ritual prayers. The teacher graciously accepted the interruption. She also spoke of a negative influence from a high school drama teacher who did not allow her to perform a Shakespeare monologue for a male role. Kat noted that this experience led her on a path to becoming a feminist. Kat's contrast between the two teachers is quite telling. One was open-minded and flexible while allowing students four months to gain a deep understand of a nation. The other had a narrow view of gender regarding who could perform what role. Teachers can never know with certainty how influential they might be in positive or negative ways, but their students often remember. Kat also mentioned that a junior high school teacher led an advocacy group, which allowed students to participate in decisions made in the school district and in city hall. This is learning democracy while doing it.

Apollo was living in Las Vegas in the months leading to OWS, and he stated that he knew that the movement was coming. He moved to New York City to work on screenplays and short films while also devoting much of his time to the Zuccotti Park occupation and its outreach efforts. He spoke of a variety of influences during his youth from films to the founding fathers to his activist mother. He gleamed with a smile when speaking of how one teacher in particular and all in general, nuns in his Catholic high school in Newark, affected him: "She actually, and all the other nuns actually, inspired me always to do my best. They all saw a lot more potential than even I was aware of" (Apollo, personal communication, October 22, 2012). This defies the stereotype of the stern, browbeating teacher-nun, and it affirms the value of a teacher who sets high expectations and provides caring support.

Four Presentation Attendees

February 12, 2013 was a typically cold and breezy winter night on the Lower East Side of Manhattan, the location of the Bluestocking bookstore and activist center. My presentation titled "Educators and the Occupy Movement" had been on the events calendar for a few weeks, but only four people attended. Of those four, three stayed for the focus group to follow. As that was underway, another person arrived late and joined in. All four who stayed were white males, and each self-identified as white. I will discuss each person's testimony one at a time in alphabetical order of the names or pseudonyms given.

Eric was a slender, pensive young man of age twenty-five. Raised in New Jersey near New York City, he spent years of his young adulthood in western North Carolina. He had recently moved to New York City from North Carolina but not in time for the Zuccotti Park occupation. He had risen to leadership roles in the growing farm-to-table and slow food movements, and he commented on how OWS made many followers of the movements in North Carolina pay attention to bigger global issues. He spoke of three teachers who were influential during his high school years in New Jersey. One was a history teacher who was "totally down with Zinn." This teacher helped Eric win a scholarship that allowed him to leave school and earn credits while working on a farm in a sustainable agriculture project. The two other

teachers were hosting the environmental club and coaching the Frisbee team. They were young, and Eric admired them for their knowledge of punk music – and not only the mainstream punk. Eric struck me as a quiet, confident activist who knew that he had found his niche in the activist world of environmental sustainability. As he spoke of the teachers who influenced him, it was clear that he was grateful for the way they touched his life.

Josh did not state his age, but he appeared to be quite young. He said that he had dropped out of college, but he looked like he could be just out of high school. He was "from around here" and had slept at Zuccotti Park during October while also participating in marches. During my presentation, he often showed expressions of doubt. He raised the question whether a public school system could ever be a force for change. I replied that this was a truly important question, and I welcomed any thoughts from him and the others. We all generally agreed that schools were conservative as institutions but that there could be pockets of alternative thought in some settings. During the focus group, Josh did not have anything to say about any teacher influencing him. Here are excerpts:

> I've always been pretty angry at things, and I hated high school and I hated college and I left both. And that was probably really important to me, and I read a lot on my own…I started reading political science books and theoretical books mostly to prove my teachers wrong so that I could just argue with them. I guess, I don't know, I read like Kropotkin, Bakunin because I wanted to, like, fuck with my civics teacher. (Josh, personal communication, February 12, 2013)

Josh clearly was an intelligent and thoughtful 'angry young man' who was eager to learn but not in a stifling school setting. He was reading classic anarchist theory on his own and likely had become an expert despite not having completed a college degree. Apparently, not a single teacher encouraged him to keep developing his alternative thinking, so he left school and continued working on his own independent education. He was the one in the group with the fewest words to say, but he exuded confidence and focus.

Mark arrived just as the focus group was starting, and he gladly joined in. At age 39 and balding, he was visibly older than the rest. He was in academia, living in Germany and visiting New York City. When I asked him how he would identify himself in terms of race, ethnicity, and/or nationality, he replied that he "would be classified as white" and that he was "beyond nations." He was an organizer in California before OWS started, and he spoke of the excitement that he shared with others when it became clear that the movement was imminent. He gave me the name and school of a history teacher who engaged his thinking while he was in an upper-middle-class suburban high school north of New York City. Mark described himself as a Reagan admirer with some interest in his parents' anarchism at that time, and this teacher "seemed to be a pretty straight-of-the-line Marxist." He spoke of his interactions with her and of her indirect influence:

> I used to spar with her a lot. I traveled to the Soviet Union not really with her inspiring at all but with the history that she had in mind. And so, I'm always

> like, "What the…how did she win the commitment that it took for her to be teaching at this school?" (Mark, personal communication, February 12, 2013)

Mark's testimony speaks to the possibilities that exist when a teacher gains enough trust with students to create a community in which students and teacher feel safe to disclose their points of view, even when controversial. I phoned the school, hoping to find that this teacher was still there and willing to talk with me, but the secretary could not find any information on her. Given Mark's age, it is likely that this teacher retired years ago.

Skeet, age 26, often had a look of frustration or sadness during the whole event. He grew up in Florida and had lived recently in Boston. He shared that he became involved in the early "euphoric" stages of the Occupy movement but then lost interest when it became "tedious." During the question-answer time that followed my presentation, he joined with Josh in expressing doubt that the education system could ever produce change. During the focus group session, he could not think of a single inspiring secondary teacher. He was "kicked out" of a Catholic high school at one point. He did speak somewhat favorably of one college instructor who let him write an essay in response to reading the *Communist Manifesto* on his own, but he added that he would not have done such writing on his own without it satisfying an assignment. Influences on his activism came from a sister who had worked in the Peace Corps and Unicef, music, and a bookstore much like the one we were sitting in. When I asked all four participants in the end whether there was anything more that they wanted to add, Skeet replied with intensified emotion:

> High school really sucked a lot. The only part of it that was really fun was to be an asshole to everybody. So, I guess it would have been really cool to have a cool secondary high school teacher then, somebody that, like, recognized that, too. But, man, I would never wish that upon somebody. If you know how much high school sucks, then I don't know why anyone can end up teaching in it. Like, I feel bad for those teachers you were just talking about in Jersey [speaking to Eric]. Like, it's got to be soul crushing to be in high school more than four years. Because it almost was soul crushing in just four years. But I don't know; it could've just been my school, probably not though, but…. (Skeet, personal communication, February 12, 2013)

I could sense Skeet's tension the whole evening, and he needed to have that final word. While Josh expressed anger and confidence, Skeet had a general look and sound of sadness. Skeet tolerated school by playing the role of class clown, but that never was enough to counter a soul-crushing, dehumanizing school experience. Perhaps Skeet is a late bloomer who will find inspiration and hope in an education, formal or not, that he has yet to find. The Occupy movement did not sustain his hope, and there are probably many like him who lost interest after the movement's initial euphoria faded. I cannot help but wonder how an understanding and nurturing critical teacher might have helped to turn the tide for Skeet in his attitude and outlook.

Conclusions

The Occupy movement, though apparently fading, has made an impact on national and global politics. The media could not ignore the staying power of activists who camped together in parks while communicating their visions of

alternatives to neoliberal capitalism. Many sources among commercial media clearly have had an agenda to present the movement with information that is superficial, disparaging, or both. Many sources among independent media have worked with severely limited resources to counter such coverage. There is a need for scholarly works to demystify the movement, and this study will join with others to serve toward that end.

Schools serve a dual purpose if indeed they are aiming to prepare students to participate in democracy. On one hand, they socialize students to be prepared to contribute to society as it is. On the other, they prepare students to become agents of change in order to participate meaningfully in an ever-evolving democracy. If authorities suppress the latter, there will be critical teachers who find ways to circumvent the overt or covert suppression. Some of these teachers will have a role in inspiring and preparing at least some students to become activists for progressive or radical causes. As this study's findings indicate, this certainly has happened to varying extents for some activists in the Occupy movement.

As critical pedagogues work within a globalized world, we cannot ignore the power, and abuses of power, of neoliberalism. We must analyze how neoliberalism is far from being democratic, sustainable, and humane. When we find it to be far from those ideals, then we need to become scholars willing to take on an activist edge in our work. My study has set out to neither sugarcoat nor hypercriticize the Occupy movement. It provides one scholar's view of the activists and their testimonies on influences from secondary educators. My hope is that this study will be a worthy contribution among many more from other critical scholars to explore the connections between pedagogy and activism in current and future social movements. Our troubled world is in dire need of this.

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Social Reconstructionist Philosophy of Education and George S. Counts
- observations on the ideology of indoctrination in socio-critical educational thinking

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Abstract
This article comprises three parts: The author first outlines the principles of the social reconstructionist philosophy of education related to educational activity and social philosophy. After this, he describes the educational philosophy of George S. Counts, the most important developer of the social reconstructionist philosophy of education, and his most essential texts connected with the social reconstructionist philosophy of education. The third part focuses on the systematic problems involving social reconstructionist philosophy of education and George S. Counts' educational thinking. The postscript at the end of the article introduces the reader to the common and differing educational philosophical principles of social reconstructionist philosophy of education in relation to critical pedagogy, especially the educational thinking of Henry A. Giroux, and John Dewey's educational philosophy.

Keywords: Social Reconstructionism, George S. Counts, Critical Pedagogy, John Dewey

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Introduction

Progressive Education refers to the educational philosophical discourse that arose in the United States after the mid-19th century which discusses the relationship of educational interaction in the context of the changing society. Social Reconstructionism or the Social Reconstructionist Movement developed from the early 1930's as part of the educational philosophical discourse of progressive education. The social reconstructionist philosophy of education is made especially interesting by the way in which Marxist social philosophy can be adapted to educational thinking and by the conflicts into which social reconstructionist philosophy of education is drifted in terms of critical educational thinking in assuming the dogmatic social theory as its educational philosophical basis and indoctrination as the method in which educational interaction works.

My article comprises three parts: I first outline the principles of the social reconstructionist philosophy of education related to educational activity and social philosophy. After this, I describe the educational philosophy of George S. Counts, the most important developer of the social reconstructionist philosophy of education, and his most essential texts connected with the social reconstructionist philosophy of education. The third part focuses on the systematic problems involving social reconstructionist philosophy of education and George S. Counts' educational thinking. The postscript at the end of the article introduces the reader to the common and differing educational philosophical principles of social reconstructionist philosophy of education in relation to critical pedagogy, especially the educational thinking of Henry A. Giroux, and John Dewey's educational philosophy.

Social Reconstructionist Philosophy of Education

The roots of the social reconstructionist philosophy of education lie in the critique of the child-centred education of progressive education. The American society drifted into a political and financial crisis at the end of the 1920's due to the Great Depression. The American society faced a depression of several years, leading to considerations of the relationship between capitalist society and social or just society. How was this to be seen in educational philosophical thinking? The child-centred education advocated by progressive education was now seen problematic because, despite a time span of several decades during which child-centered education had been implemented in American schools, child-centered education had not been successful in preventing society from drifting into the social problems caused by market economy or capitalism (1). A discourse began within progressive education about the contents of education. From the early 1930's onwards, child-centered education advocated by progressive education was called into question in enabling democratic and just social development, as the curricula emphasized education based on the child's own interests and not on the social conditions of education (2). The educational philosophical discourse took a turn to consider how the social problems produced by capitalist society could be removed by means of education. The production of a new social order was thought to be possible through education (3). (Tanner & Tanner 1990, pp. 215; see also Bowers 1969, pp. 106-109; Kliebard 1987, pp. 183-187; Stanley 1992, pp. 11.) This educational philosophical basis of progressive education in which the position of education is promoted as a force to change society we can call the s*ocial reconstructionist philosophy of education*.

Social reconstructionist philosophy of education introduced two issues connected with the relationship between education and society to the educational philosophical discourse: firstly, educational activity shall be an activity that socializes the educatee (Socialized Education). This refers to a social situation between the educatee and the educator in which an effort is made to produce in the activity of the educatees social thinking and an ability to act justly and morally in social situations. The basis for educational activity is formed by projects related to communal and social activity that are interesting from the

educatees' point of view. The purpose of educational activity is to join the educatee's activity with the social practices and with discourses critically evaluating these practices. Secondly, educational activity aims at producing in the educatee's thinking an idea of social realities. The relationship between education and social reality is manifested in the objectives of education: as a result of being educated, the educatee should be able to evaluate social reality and to change social practices as appropriate. This is based on the idea of a just and critical society in which the most important individual way of action is solidarity with others in society. The goal is a democratic and loyal society in which the criterion of political and financial activity is not the self-seeking individual, but individual activity in which social problems are solved through the rational thinking of individuals. (Tanner & Tanner 1990, pp. 217-218; see Bowers 1969, pp. 112, 128.)

In the educational philosophy of progressive education, the thematics of education and society involve two premises: firstly, it is the function of education to socialize the educatee for loyal and just social activity. Secondly, as a result of education, the educatee should be able to evaluate and change social reality for a "new social order". The aims of educational activity referred to above are shared by the representatives of progressive educational philosophy. In terms of how these goals of education are to be achieved, progressive education comprises two principles of educational activity that are contrary to each other: experimentalism represented by John Dewey, and indoctrination represented by the social reconstructionists.(Tanner & Tanner 1990, pp. 219-222; see Bowers 1969, pp. 75, 79, 155, 197.)

The fundamental philosophical principle in the experimentalism of progressive education is to use Dewey's principles of experimentalism to solve social problems. According to the experimentalists, knowledge is produced by means of an experimental method through new experience (1). The production of new knowledge takes place through experience, as a person discovers a new thing in his or her experience (2). As s/he has discovered a new thing in his/her experience, it becomes possible to anticipate an activity in the future (3). The process of learning a new thing is comprehensive and involves individual emotions, attitudes and motivation (4). The experimental method and democratic activity were understood to contain a similar idea of an action model in which an effort is made to solve social problems by experimenting with things in social activity (5). In experimentalism as advocated by progressive education, the reality changing society is always connected with issues in communal practices. Changes to communal activity presuppose rational individual activity, in which the individual discovers solutions to problems in the activity through his or her own intelligent activity. In the experimentalism of progressive education, the purpose of educational activity is to produce the educatee into an intelligent actor. It is not enough for a person to act routinely following a learnt way of action (Tanner & Tanner 1990, pp. 220.) This is what Tanner & Tanner (1990) say about the relationship between society and experimentalism:

> Experimentalism sees the school as the instrument for creating a society that will be guided by the experimental method in its continuous reconstruction. This means a society composed of individuals with experimental minds who realize that specific solutions will need to be discovered by experimental procedures for each of the social problems in our society. p. 219

According to Tanner & Tanner (1990, pp. 220-221), the representatives of the social reconstructionist philosophy of education of progressive education think the educational philosophical foundation of the experimentalists cannot be trusted to produce the "new social order" of society. The social reconstructionists criticize the advocates of child-centered education, the experimentalists, for their lack of a "social mission" for which social reality the children are educated. The social reconstuctionists' objectives in education are crystallized in

two ideas: firstly, the function of education and the contents of educational activity are built through an analysis of society in which society is considered critically and an effort is made, by means of a critical reconstruction related to society, to achieve the goal that educational activity is aiming at. Secondly, the goal of education is not meant to be guessed at or experimented with, as advocated by experimentalism, as an idea of the future of society is formulated through critical evaluation of society. The critically reconstructed new social order, society, is the goal of educational activity. Thus the goal of educational activity is not subject to guesses or experimentation, as the goal of education is planned and justified in advance. Tanner & Tanner (1990) outline this as follows:

> The educational task, they (social recontsructionists, A.S.) argued, was a fundamental reconstruction of the social order. The idea *planned* new social order (a concrete program on which to base a curriculum) seemed them a better and safer bet than the idea of a *planning* society at a time when intellectuals were speculating whether the nation would go Communist or Fascist. p 221

According to Gerald L. Gutek (1988, pp. 299-300; see also Gutek 1984, pp. 124), the social reconstructionist philosophy of education emphasizes that theories and practices related to education are always tied to a time and place. According to the social reconstructionists, there is no theory of education that is detached from a given political and social context that would direct the educator's educational activity. The social reconstructionists think that theories of education and educational practices are not based on "speculative philosophy", on abstract theoretical description of education, as theories on education are formulated in relationship to social and political viewpoints. This is what Gutek (1988) says about the idea of the advocates of the social reconstructionist philosophy of education on the social and political connections of educational philosophy:

> For the Reconstructionists, educational theories are products of particular historical periods and cultural contexts. Rather than being abstract or based on speculative philosophy, educational theories, Reconstructionists contend, should shape social and political policies. p.300

According to the social reconstructionist philosophy of education, an analysis should be made of the workings and tradition of modern industrialized society, and the elements producing political and economical crises should be reconstructed. A new social order in which political and financial crises can be kept under control can arise through an analysis of the social ways of action, in which the cultural heritage is analyzed critically (1), the main principles of the target society are formulated based on the critical analysis (2), the social reform – more specifically, revolution – produces a new social order in society (3), and the new social order is realized in social activity (4). The new social order can arise through social reform, in which a central position is occupied by education and institutions providing education, such as the school. According to the social reconstructionist philosophy of education, education should produce students who think critically about culture (1), who are capable of reaching the set or reconstructed social situation (2) by means of a social reform or a revolution (3) and to accomplish the new social order (4). (Gutek 1988, pp. 300-301; Gutek 1970, pp. 74-75.) Gutek says;

> Hence, Reconstructionists education should cultivate: (1) a critical sense in examining the cultural heritage, (2) a commitment to work for deliberate social reform, (3) a planning attitude that is capable of plotting the course of cultural revision, and (4) the testing of the cultural plan by enacting programs of deliberate social reform. p. 301

For the social reconstructionists, the goal of education as a contentual issue means criticism of the capitalist economic system and a discourse on the socially polarizing influence of capitalism that produces rich and poor people. What was said above means that the task of the teacher at school is to make the pupils conscious of the problems in modern society and to indoctrinate the pupils into new social activity. This new social order and activity does not fulfill the laws connected with economy and politics in capitalism, in which the people who own money are in control of social activity. It is about new social activity in which an essential role is played by the class struggle to achieve the "collective ideal". The social reconstructionist philosophy of education is based on Marxist social philosophy, in which the production of the social order of Marxist philosophy takes place in education through indoctrination. The change of the capitalist social order into a society with the "collective ideal" takes place fastest through a revolution. The extreme leftist wing of the social reconstructionist philosophy of education advocates educational thinking in which the teachers at school indoctrinate the pupils to accept a revolution in the capitalist society. This revolution by the teacher and pupils will transfer social activity as quickly as possibly into a society described by Marxist social philosophy. (Tanner & Tanner 1990, pp. 220-222.)

The essential objective of the social reconstructionist philosophy of education is to try to change and control social, political and economic reality by means of education. As the social reconstructionists have a clear idea of planned social reality based on Marxist social philosophical thinking, it is logical to think that the next generation is educated for this social reality teleologically or finalistically. In this way indoctrination is the nature of the interaction related to education in the social reconstructionist philosophy of education. Indoctrination refers to manipulation of the rising generation for a pre-designed social, political and economic social reality. (Gutek 1988, pp. 311.)

George S. Counts

The most important developer of social reconstructionist philosophy of education was George S. Counts (1889-1974). The academic career of George S. Counts within educational philosophy started at the University of Chicago under the supervision of Charles Judd in 1913. Counts' dissertation is an educational sociological study made at the University of Chicago. Counts' early scientific influences are connected with the application of quantitative methods in the human sciences. His scientific thinking was also influenced by the University of Chicago sociologists Albion W. Small and William I. Thomas. Small and Thomas emphasized the meaning of sociohistorical phenomena in the research of education (Dennis & Eaton 1980, pp. 1-2; Graham 1967, pp. 63; Gutek 1970, pp. 58-59.) George S. Counts pursued his working career as professor at Teachers College at Columbia University in New York from 1927 to 1955. Some of his colleagues working at the same time included John Dewey, William H. Kilpatrick, Boyd Bode, John Childs, Merli Curti, Harold Rugg and Edward Thorndike. (Dennis & Eaton 1980, pp. 3,14.)

Counts' educational philosophical thinking can be divided into three different periods. The first stage comprises the 1910's and 20's. At this time, focal issues in his educational philosophical thinking included the child-centered educational philosophy of progressive education, and Deweyan instrumentalism. At the second stage after the mid-1920's, Counts became interested in the Soviet Union's social and educational system. His educational philosophical thinking began to focus on social philosophical issues and their relationship to education. In the early 1930's, Counts started to formulate the main principles of social reconstructionist philosophy of education. We can say that Counts presided over the birth of social reconstructionist philosophy of education in giving the paper called "Dare Progressive Education Be Progressive?" in the Progressive Education Association in 1932. The 1930's marked the golden age of the social reconstructionist philosophy of education, and the main discussion forum was the educational journal called "The Social Frontier". At the end of the

1930's, the development in the Soviet Union and Europe led to the rise of dictatorships, which meant a move in Counts' educational philosophical thinking to the third stage; he began to draw away from the Soviet social and educational system, and lost his interest in applying it to the American society. After the mid-1940's Counts was highly critical of dogmatic models of social thinking. [1] (Dennis&Eaton 1980, pp. 3-5, 8; Gutek 1970, pp. 61-63, 73-85, 250-252; ks. Graham 1969, pp. 64, 82, 115.)

"Dare Progressive Education Be Progressive?"

> "We live in troublous time; we live in an age of profound change; we live in an age of revolution" (Counts 1932b, 38).

Counts' educational philosophical thinking is based on the indoctrination of the rising generation into the desired social order. Which are the educational philosophical roots of the nature of indoctrination in Counts' education? Counts (1932a, pp. 257; Counts 1932b, pp. 12; Counts 1932d, pp. 5-6; see Bowers 1969, pp. 14) approves of child-centered educational thinking, in which the child's own activeness and freedom are the basic starting-points for education. Counts (1932a) says;

> It (the Progressive Education Movement, A.S.) has focused attention squarely upon the child: it has recognized the fundamental importance of the interest of the learner: it has defended the thesis that activity lies at the root of all true education: it has conceived learning in the terms of life situation and growth of character: and it has championed the rights of the child as a free personality. All of this is excellent: but in my judgment it is not enough. It constitutes to narrow a conception of the meaning of education: it brings into the picture but one half of the landscape. p. 257

Counts does not reject the idea of the freedom of human activity, and specifically of the freedom of human thinking. Freedom is, however, only part of human activity. Counts (1932a, pp. 261; Counts 1932c, pp. 40; see Bowers 1969, pp. 15; Graham 1969, pp. 24; Gutek 1970, pp. 24) finds that the capitalist society has led into the disappearance of true human individual freedom. It has been replaced by an economic system that exploits people both mentally and economically. A fundamental change has taken place as a result of the industrialization of society, whereupon the accumulation of capital has given rise to a "selfish" group of people that is in control material property. This propertied class wants to privatize everything from merchandise to art and religion. Capitalism has developed into a system that is inhuman towards the individual and "cruel" towards society. Counts (1932a) describes the selfish operation of capitalist society as follows:

> In the present form of capitalism it is not only cruel and inhuman: it is also wasteful and inefficient. It has exploited our natural riches without the slightest regard for the future: it has made technology serve the interests of the profit motive: it has chained the engineer to the vagaries of the price system: it has plunged the great nations of the world into a succession of wars, ever more devastating and catastrophic in character: and only recently, it has brought on a world crisis of such dimensions that millions of men in all of the great industrial countries have been thrown out of work and a general condition of paralysis pervades the entire economic order. p. 261

[1] Gutek (1984, pp. 131) points out that George S. Counts' social reconstructionist philosophy of education is based on opposition to conservatism, Social Darwinism, economic individualism and uncontrolled capitalism. The social values that Counts finally ended up in were related to democracy, Rooseveltian liberalism (The New Deal), John Dewey's experimentalism and Charles Beard's historical relativism. Equality, democratic ethics and scientific technological development to solve social problems are essential to Counts' social philosophy (Gutek 1984, pp. 132).

Counts' conclusion about the achievements and development of capitalist society is not elevating: the capitalist economic system only causes problems that cannot be solved by the means of the capitalist system itself. In his analysis of the capitalist, mostly American society, Counts (1932a, pp. 261; see Counts 1932c, pp. 39-40; Counts 1932d, pp. 43-53; see also Bowers 1969, pp. 15; Graham 1969, pp. 65; Stanley 1992, pp. 13-16, 31) reaches the conclusion that society can be changed into something better in the form of systematic social thinking. This means changing the private capitalist market economy system into a fairer and better society through a reconstruction effected by the various cooperating parties in society. Reconstruction of society means the change of "private capitalism" into a "socialized economy". New social ways of action, a socialized economy, are the result of a reorganization of the utilization of the achievements of science and technology. The aim is a society with a "harmony with the real facts of life". The ideal society is based on genuine cooperation between individuals and not on self-seeking. Cooperation between individuals also provides security for the individuals' welfare which enables true freedom of the individuals as they function in society. Counts (1932a) says:

> Obviously, the growth of science and technology has reached a point where competition must be replaced by cooperation, the urge for profits by careful planning, and private capitalism by some form of socialized economy". "There merely remains the task reconstructing our economic form and of reformulating our social ideas so that they may be in harmony with the underlying facts of life. The man who would live unto himself alone is now a public enemy: the day of individualism in economic sphere is gone." "Freedom without a secure economic base is simply no freedom at all". p. 216

Counts (1932a, pp. 257-258; see Gutek 1970, pp. 27-28) understands that education is essential in an activity in which the product of education is new communal activity. The function of education is, in one way or another, to have an influence on not only the educatee's learning process but also on social development "To be progressive", as Counts (1932a, pp. 257-258; Counts 1932b, pp. 12; Counts 1932d, pp. 6, 17-18, 37; see Bowers 1969, pp. 14-15; Stanley 1992, pp. 26) says, educational activity needs to have a direction that it aims at. If the direction of educational activity is not defined, the cause of this activity remains unclear. Setting a goal for educational activity forces the educators to discuss educational activity. The above is, according to Counts (1932a, pp. 257-258), the core of educational activity: the educators need to discuss what good education is all about, how education can produce good human beings (1). Good education and good human beings are in solid connection with communal activity (2); good education is a characteristic of a good community. According to Counts (1932a, pp. 257-258; Counts 1932b, pp. 14; Counts 1932d, pp. 18; see Gutek 1970, pp. 53, 118; Stanley 1992, pp. 27, 29), educational activity is tied to communal activity, and the implementation of educational activity always reflects the goals and objectives of communal activity. In this way educational activity and communal activity are in a solid connection with each other. Counts (1932a) describes the relationship between education and communal activity as follows:

> You may argue that the movement (the Progressive Education Movement, A.S.) does have orientation, that it is devoted to the development of the good individual. But there is no good individual apart from same conception of the nature of the good society. Man without human society and human culture is not a man. And there is also no *good* education apart from some conception of the nature of the good society." "It (education, A.S.) must always be a function of the time and circumstances". p. 258

The change of communal activity in a better direction, in which a shift takes place from the individuals' selfish capitalist activity towards a just society that takes into account

everyone's individual needs, is the ideal or utopia that Counts' social philosophical thinking is aiming at. Educational activity has an essential role to achieve this goal. Counts (1932a, pp. 259; Counts 1932b, pp. 13; Counts 1932c, pp. 39; Counts 1932d, pp. 19; see Stanley 1992, pp. 31) points out that it is up to the educators to reconstruct new communal activity. This reconstruction shall be based on an analysis of the problems in the community's social reality and on possible solutions to these problems. A special attention is given in Counts' (1932a, pp. 259; Counts 1932c, pp. 39) analysis to the change of the largely agricultural form of life into the modern industrialized society in which new scientific observations and their technological applications direct social development. The conclusion made by Counts (1932a, pp. 259; Counts 1932b, pp. 13; Counts 1932d, pp. 9-10, 28; see Bowers 1969, pp. 15-16, 19; Graham 1969, pp. 65; Gutek 1970, pp. 66, 68, 120; Stanley 1992, pp. 27) is that education is not a child-centered activity, as the analysis of the contents of educational activity based on the principles of communal activity rests with the educators. As the contents are based on the principles of a better society, the educators have the right to transfer the principles reconstructed from communal activity to the next generation through indoctrination. This is what Counts (1932b) says about the relationship between the reconstruction of communal activity and education:

> If Progressive Education is to be genuinely progressive, it must … , face squarely and courageously every social issue, come to grips with life in all of its stark reality, establish an organic relation with the community, develop a realistic and comprehensive theory of welfare, fashion a compelling and challenging vision of human destiny, and become somewhat less frightened than it is today at the bogeys of *imposition* and *indoctrination*. In a world, Progressive Education cannot build its program out of the interests of the children: it cannot place its trust in a child-centered school…This brings us to the most crucial issue in education – the question of the nature and extend of the influence which the school should exercise over the development of the child. p. 13

Underlying Counts' (1932a, pp. , 263; see Gutek 1970, pp. 120-122) views in favor of indoctrination there are three premises: firstly, as the operations of capitalist society drift into a crisis, an opportunity arises to change communal methods of activity through a revolution. The establishment of a new social order, a better society produced through revolution, takes places through indoctrination in educational activity. Secondly, the justification of indoctrination is connected with the moral idea of reaching, through revolution and indoctrination, "a more beautiful society" than what communal activity was before. Thirdly, the educatee's relationship with the educator and the social community is always one of subordination, whereby the educator and culture are the main influencers on the educatee.

According to Counts (1932b, pp. 13-15), the relationship between the educator's educational activity and the educatee's learning can be understood similarly to cultural enculturation; cultural ways of action are internalized in the educatee as a result of activity. It is about cultural knowledge and skills being transferred to the educatee's activity. Cultural activity is the primary influencer on the educatee's process of socialization. What is the analogy between the enculturation of the educatee and education? Counts understands cultural ways of action and education as factors that have an influence on the increase of knowledge and skills in the educatee. Both culture and education can be understood to be mean direct influences, indoctrination in relation to he educatee's activity. There are two issues here: firstly, cultural enculturation is not a good or bad thing, it is just a fact. Secondly, education has a similar relationship to the educatee's enculturation as culture has.

Counts (1932b, pp. 13-15; Counts 1932d, pp. 13-15; see Gutek 1970, pp. 119; Stanley 1992, pp. 27) uses four examples to show the direct influence of culture on the educatee's growth. First of all, every child is born in a given cultural medium which has a

certain manner of communication and using language. It is natural that a child learns the way of communication and the language in whose sphere the child is acting. The communication environment and verbal activity exist before the child's activity,and the assumption is that the child internalizes the culture of any given time as such. Counts (1932b) defines the influence of culture on the educatee's activity as follows:

> One of the most important elements of any culture is a tradition of achievement along a particular line – a tradition which the group imposes upon the young and through which the powers of the young are focused, disciplined and developed". "The child is terribly imposed upon by being compelled through the accidents of birth to learn one language rather that another, but without some language man would never become a man". "In the life cycle of the individual many choices must of necessary be made, and the most fundamental and decisive of these choices will always be made by the group". p. 13

Secondly, the educatee does not have any personal traits at birth, such as personal good or bad characteristics, but the potential to learn different things through a variety of influences. Thus education gets an opportunity to influence the educatee's growth through his non-determined qualities. A "good person", "good community" or "good education" are not given properties in an educatee, but issues in cultural activity that can be conveyed to the next generation. A good community, where there is good education, can produce a good person. (Counts 1932b, pp. 14; Counts 1932d, pp. 15-16; see Gutek 1970, pp. 119; Stanley 1992, pp. 27.) Counts (1932b) describes the growth potential and education of the educatee as follows:

> … the individual is neither good nor bad; he is merely a bundle of potentials which may be developed in manifold directions. Guidance is, therefore, not to be found in child nature, but rather in the culture of the group and the purposes of living. There can be no good individual apart from some conception of the character of the good society; and good society is not something that is given by nature: it must be fashioned by the hand and brain of man. This process of building a good society is to a very large degree an educational process. p. 14

Thirdly, culture does have an influence on the child's learning, so it is natural that the educators exert an influence on the educatee's learning by their value judgments. According to Counts (1932b, pp. 14; Counts 1932d, pp. 16-17; Counts 1932d, pp. 23; see Gutek 1970, pp. 144; Stanley 1992, pp. 27), it is better that teachers influence the students' learning processes through their value judgments in a positive way, as – if it can develop freely – cultural enculturation may be problematic both for the child and the activity of the community. Counts says (1932b);

> My thesis is that complete impartiality is utterly impossible, that the school must shape attitudes, develop tastes and even impose ideas. It is obvious that the whole of creation cannot be brought into school. This means that some selection must be made of teachers, curricula, architecture, methods of teaching." "I would merely contend that as educators we must make many choices involving the development of attitudes in boys and girls and that we should not be afraid to acknowledge the faith that is in us or mayhap the forces that compel us." p. 14.

Fourthly, Counts (1932b, pp. 15) thinks that it is problematic to leave the children to develop by "the blind play of their psychological forces" and to conceal indirect influence on the child as activity "for the benefit of the child". By the educator's indirect influence, Counts means that educators are prepared to accept the influence of cultural activity on the educatee's growth, but that they do not acknowledge the contribution of the educatees' own activity to their own growth. The above is, according to Counts, a moral dilemma connected with child-

centered educational thinking. Education is about direct influence on the child's learning. And according to Counts, it is fairer to openly acknowledge the contentual principles and methods of education taking place at the school. Counts (1932b) criticizes the educational thinking of the supporters of child-centered education in progressive education as follows:

> Progressive education wishes to build a new world but refuses to be held accountable for the kind of the world it builds. In my judgment, the school should know what it is doing, in so far as this is humanly possible, and accept full responsibility for its acts. p. 15

Conclusions and criticism

Counts' idea of the nature of indoctrination in educational activity has, according to Gutek (1970, pp. 117, 126-127), been subjected to criticism based on the analysis of interaction in educational activity. The criticism is based on three ideas: firstly, the traditional idea of the freedom of human activity and of the neutrality of education in an educational institution are principles that belong to the core of western – and thus also American – educational thinking. Indoctrination by the educator in educational activity is problematic because a finalistic, unchanged idea of issues is generated in the educatee as a result of the indoctrination. An unchanged idea of the nature of things does not enable individual activity in the changing world, but rather a drift away from the "true and changing world". The educatee's own critical thinking cannot be constituted in indoctrination. In addition to what was said above, the world of knowledge produced for the educatee through indoctrination exists in his or her thinking, whether or not he or she wants it.

Secondly, in an educational process in which the educator indoctrinates the educatee there is no need to take into account the educatee's point of view or his or her human rights to be an individual (Gutek 1970, pp. 126). Counts' idea of the nature of educational activity has been crystallized in the transaction between the educator and educatee to be such that the educator's intentional activity, the contents to be indoctrinated in the educational process by the educator, are transferred as such into the educatee's activity. The idea described above does not take into account the educatee's own experience and his or her temporal-local position in relation to the world, in which the educatee should understand the knowledge as intended by the educator. This is ultimately about the educatee's relationship between the individual and the world not being given any attention in the educational process.

Thirdly, Counts defines the new communal method of activity based on his own social philosophical views. According to Gutek (1970, pp. 126), this gives rise to the problem who is ultimately given the right to determine the contents of educational activity. The issue is who shall decide on the "new social doctrines" that will finally lead to the "salvation of the world".

Snook (1972, pp. 19) points out that the idea of the social reconstructionist philosophy of education about indoctrination in education and about the educatee's growth into a democratic actor is conflicting; at the same time as the educatee is given an opportunity for free discussion and The social reconstructionist philosophy of education is here in conflict with its own theoretical premises. Bowers (1969, pp. 107) sees the same logical problem in the relationship between democratic activity and educational indoctrination; the educatees should be able to develop communal activity democratically by means of education that is using coercion as a tool of education. An undemocratic education cannot produce a democratic actor.

Bowers (1969, pp. 48-51; ks. Stanley 1992, pp. 57) criticizes the premises of the social reconstructionist philosophy of education due to its weakness of social analysis; the

advocates of the social reconstructionist philosophy of education believe that education can unambiguously and causally change communal activity in a better direction. This is, according to Bowers, only about the emotional appeal of people for radical activity to accomplish an "ideal social order". They wish for happiness and social equality both politically and economically. The achievement of improved communal activity is one of the goals of numerous educational philosophical movements. Bowers presents four ideas that the social reconstructionist philosophy of education has not been able to achieve despite the goals it has set; firstly, the advocates of social reconstructionist philosophy of education have not presented any systematic social analysis that would provide the outline for new communal activity. Secondly, they have not presented how the educator should act, if a social analysis was presented and if it was found to be realistic to put into effect. Thirdly, which is the true operational forum for decision-making by the teachers? Fourthly, the teachers' analysis of social problems and their solution, which are transferred to teaching activity, is too slow a method to solve current social problems. The advocates of the social reconstructionist philosophy of education only present their hopes for a utopia in which the values of the capitalist economic system are changed to give rise to a "new social order".

Post Scriptum: the social reconstructionist philosophy of education, critical pedagogy and John Dewey's instrumentalism

According to William Stanley (1992, pp. 3-9, 218), there are common contentual principles to be found in the social reconstructionist philosophy of education and critical pedagogy. Although social reconstructionist philosophy of education had the most influence on educational philosophical discourse in the 1930's, the so-called critical pedagogy that acquired a stronghold in Anglo-American discussion in the 1980's contains essentially similar contentual principles and questions as the social reconstructionist philosophy of education. Both the social reconstructionist philosophy of education and critical pedagogy focus on the possibility of social change as controlled activity (1). Social change takes place with the help of active actors in the community (2). The goal is to achieve democracy, collective democracy and a better society where the means of production are in collective social ownership, but democracy is applied to control them (3). In education, the most essential producer of democracy, the "new social order", is the school and the teachers (4). The political basis of the social reconstructionist philosophy of education and critical pedagogy is to oppose the free capitalist economic system (laissez-faire capitalism) and to support the Marxist social system (5).

Despite the similarities, the social reconstructionist philosophy of education and critical pedagogy differ from each other in that critical pedagogy has acquired influences from the European schools of critical sociology (the new sociology movement in Great Britain) and critical theory, neo-Marxism, structuralism, phenomenology, post-modernism and post-structuralism (1). In its current form, critical pedagogy includes a strong feminist thinking (2). While the social reconstructionist philosophy of education is based on collective democracy, critical pedagogy takes a critical attitude towards the basis of objective knowledge, aiming again and again to consider the possibility of education as developer of communal activity and to criticize the social conditions of the relationship between knowledge and power (3). (Stanley 1992, pp. 8-9, 218, 221.)

According to Henry A. Giroux (1988, pp. 8-11), an important advocate of critical pedagogy, the social reconstructionist philosophy of education was essentially involved with the relationship between the school institution and society; the school is not a politically free area of communal activity, as the school has an important meaning in changing communal activity – in the transformation – into a democratic, solidary and just society. It is the school's function to educate critical democratic communal actors who are able to intervene in ethical

and political questions in society. This will only succeed if the teachers in schools draw up such a curriculum that takes into account a critical viewpoint on the social justness and welfare of society and on political and economic injustice, so the students take a motivated standpoint on social problems wanting to add to the fairness of social practices. The curriculum is a reconstruction of "good society". According to Giroux, the issues mentioned above are also essential goals and methods of action in critical pedagogy.

It is perhaps a little surprising that Giroux highlights John Dewey as the most important developer of the social reconstructionist philosophy of education. According to Giroux (1988, pp. 81-87), Dewey's significance in developing the social reconstructionist philosophy of education can be divided into four main contentual principles; firstly, Dewey emphasizes the relationship between democracy and the school's everyday activities, whereby the activities taking place at school should be connected with communal ethical democratic activity. Thus the school is not a politically neutral institution. Secondly, ethical democratic activity means activity aiming at the welfare of the community, where the intelligent thinking of individuals aims at communal moral activity, i.e. democracy. The opposite of this kind of activity is intelligent activity aiming at the individuals' own benefit. Thirdly, Dewey's educational philosophical thinking is based on the individual's experience, especially his or her social experience where learning can take place. Individuals can learn issues related to democracy through social experience, whereby something taking place in social activity can teach the individuals the ability to act communally, loyally and responsibly in society. An individual's socially intelligent and democratic activity can arise in the everyday activities of the school which are solidly connected with the operation of society. Fourthly, Dewey's philosophy of democracy includes the idea of communication with the other members of the community, whereby dialog between people presupposes listening to others' opinions. Giroux himself calls this kind of communication, where the "otherness" of people is taken into consideration, a politics of difference. Mutual understanding makes it possible for democracy and solidarity to develop.

According to Stanley, Dewey was highly critical of the social reconstructionist philosophy of education. In Dewey's educational philosophy, the school is an important place where the various operational principles of society essentially meet with the student, the educatee. This does not mean, however, that the school is a field for the operation of political opinions, ideologies or dogmas, as the educational activity taking place in the school shall develop in the educatees skills for their own problem solving, thus growing into democratic actors in their community. (Stanley 1992, pp. 48-49.) Democratic activity is based on the idea that the individual understands social activity and, further, try to solve problems connected with social activity intelligently and morally. Democracy is not, in Dewey's philosophy, a way of action tied to a given political dogma or ideology, but intelligent activity open to change and based on the thinking of individuals. Thus, Dewey does not approve of the dogmatic basis of the social reconstructionist philosophy of education of a predetermined political ideology that would be final in the social activity of the community. Dewey (LW11) states the above as follows:

> To my mind, the greatest mistake that we can make about democracy is to conceive of it as something fixed, fixed in idea and fixed in its outward manifestation. The very idea of democracy, the meaning of democracy, must be continually explored afresh; it has to be constantly discovered, and rediscovered, remade and reorganized; while the political and economic and social institutions in which it is embodied have to be remade and reorganized to meet the changes that are going on in the development of new needs on the part of human beings and new resources for satisfying these needs. pp. 181-182

As Dewey does not approve of unchanged political principles related to the activity of the community in his conception of democracy, he also thinks that they cannot exist in the educator's educational activity. The Marxist social philosophy in which the advocates of the social reconstructionist philosophy of education ended is not a sensible goal for educational activity for Dewey, because then an effort would be made to transfer a certain political social philosophy into the educatee's thinking in educational activity. In accordance with Dewey's educational philosophical principles, this cannot respond to the problems that are manifested in the community's activity in the future. At the same time Dewey disclaims the cornerstone of educational activity in the social reconstructionist philosophy of education, i.e. indoctrination. Dewey's answer – instead of indoctrination – on the nature of the educator's educational activity in the context of changing society is to develop the educatee's thinking and problem solving skills by means of education. Dewey (LW11) says:

> Education must have a tendency, if it is education, to form attitudes. The tendency to form attitudes which will express themselves in intelligent social action is something very different from indoctrination, just as taking intelligent aim is very different from firing BB shot in the air at random with the kind of vague, pious hope that somehow or other a bird may fly into some of the shot.
> There is an intermediary between aimless education and the education of inculcation and indoctrination. The alternative is the kind of education that connects the materials and methods by which knowledge is acquired with a sense of how things are done and of how they might be done; not by impregnating the individual with some final philosophy, whether it comes from Karl Marx or from Mussolini or Hitler or anybody else, but by enabling him to so understand existing conditions that an attitude of intelligent action will follow from social understanding." pp. 189-190

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The Everyday Realities of Palestinian College Students Living and Studying in Israel: A Photovoice Study

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Abstract
The purpose of this study was to allow Palestinian, primarily Muslim, college students to document, reflect, and critique, through photography and storytelling (photovoice), their everyday realities as Arab citizens living and studying in Israel. Sixty Palestinian, preservice, English teachers participated in this study, of whom 55 were female and 5 were male. The use of photovoice in this study provided opportunities for participants to write, own, validate, and share their voices and personal narratives and create new ways of thinking. Results from this study address social, economic, political, and cultural issues related to being a Palestinian living and studying in Israel rather than issues directly related to teacher preparation. Four main themes emerged from participants' photographs and stories. They included: (1) campus climate; (2) housing and land; (3) marriage and family; and (4) environment. Suggestions for further research are provided.

Keywords: Palestinian college students, photovoice, personal narratives, preservice teachers

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Introduction

The Jewish-Palestinian conflict remains the most intense and explosive of conflicts in Israel, placing the Jewish majority and the primarily Muslim Palestinian minority at perpetual odds (McGlynn & Bekerman, 2007; Pinson, Levy, & Soker, 2010). The two groups differ in language, nationality, religion, and political aspirations (Al-Haj, 2005). For the most part, Palestinians live separate from Jews, either in their historic villages or in separate neighborhoods within shared cities such as Jerusalem, Tel Aviv, or Haifa (Lemish, 2003). Israeli Palestinians, though officially offered full rights as citizens, have suffered chronically as a putatively hostile minority with little political representation (Ghanen, 1998) and have been denied equal opportunities in the economy, education, health, land use (Nasser & Nasser, 2008), and the legal system (Pinson, Levy, & Soker, 2010). In contrast to other countries where multiple identifications co-exist, the Palestinians in Israel view themselves as Arabs, Palestinians, and/or Muslims and less as Israelis (Rouhana, 1997). To date, there are approximately 1.6 million Arabs living in Israel.

The Israeli educational system is almost fully segregated regarding Palestinian and Jewish populations (Bekerman, 2005; Lemish, 2003). Such segregation is reflected in a segregated school curriculum (Al-Haj, 2005). The standard Jewish curriculum focuses on Jewish nation-building while the Palestinian curriculum is sanitized of any national Palestinian content. Jewish students are called to engage in collective Jewish national experience while the Palestinian students are expected to accept the definition of Israel as a Jewish democratic state (Al-Haj, 2005). Palestinian students' may resist the state's efforts to shape their identity and are left with an identity that is not well defined; their identity becomes a vessel empty of content or filled with contradictory images (Nasser & Nasser, 2008). Additional discrepancies exist between Palestinian and Jewish schools systems in terms of physical facilities, teacher qualifications, retention rates, and levels of special services (Rouhana, 1997).

For Palestinian teachers, there is a sense of conflict regarding their loyalty toward their employer, the Ministry of Education, and the Palestinian community. The Ministry of Education imposes curricular constraints on the Palestinian educational system by not allowing schools to freely choose their own narratives concerning issues related to their cultural and national histories (Bekerman, 2005). Thus, official history leaves little space for alternative narratives, recognized as a major part of a group's cultural rights (Bekerman, 2005). Although the Ministry of Education encourages competition between private publishers to prepare textbooks according to the Ministry's guidelines for the Jewish Israeli schools system, the overwhelming majority of textbooks for the Palestinian Israeli system have been published by the Ministry itself (Nasser & Nasser, 2008).

Higher education in Israel reflects power relations in society as a whole (Abu-Rabia-Queder, 2008). "A gap exists between the social structure, which is divergent and multicultural, and the formal culture and higher education, which is basically Jewish, western-oriented and devoid of any multicultural concept" (Al-Haj, 2003, p. 352). At university, Arabs may sense various types of deprivation: financial difficulties, problems renting off-campus housing, adjusting to new demands, and gaining fluency in academic languages (Al-Haj, 2003).

Like all patriarchal societies, the traditional Palestinian society lends disproportionate weight to the role of the male and underestimates the influence of the female (Nasser, 2002). Though different factors have expanded educational opportunities for females in different settings, Alayan & Yair (2010) argue gender divisions and gaps are still apparent in Muslim educational systems (Howe, 1998). Many Arab countries still hold traditional views about

women's roles and express limitations through government policies, such as gender biased school curriculum (Abu-Rabia-Queder, 2008).

Data from the Israeli national examination system show that Palestinian girls consistently outperform boys in all subject domains by a moderate margin (Central Bureau of Statistics, 2007) and female representation outweighs males in higher education (Khattab, 2002). In a comparative study that analyzed the gender differences in the narrations of educational experiences of Palestinian students, Alayan and Yair (2010) found that Israeli schools and universities are effective in inculcating knowledge, the curricula that enables females to tread the same educational paths as men but females still express a submissive, feminine habitus. Updated projected trends forecast that girls in Middle Eastern societies are still likely to meet many obstacles on their way to equal education (Alayan & Yair, 2010).

Given the political, social, and educational climate in Israel, the author of this article set out to explore the daily lives and everyday realities of Palestinian college students attending an Arab teacher education college in Northern Israel. The purpose of this study was to allow Palestinian, primarily Muslim, college students to document, reflect, and critique, through photography and storytelling (photovoice), their everyday realities as Arab citizens living and studying in Israel.

Photovoice

Photovoice is a form of participatory action research that utilizes documentary photography and storytelling to engage participants in documenting and critically reflecting upon their everyday lives. Participatory action research allows university researchers to partner with community members, young people, or members of other groups who do not usually have a role in the creation of knowledge but rather are more often the objects of study themselves (Smith, Bratini, & Appio, 2012).

Participants of photovoice projects are often selected from exploited or oppressed groups (Wang & Redwood-Jones, 2001), as they are most negatively affected by social problems and least likely to have input into the decisions that affect them (Morgan, Lower, Ibarra, Vardell, Kintner-Duffy, & Cecil-Dyrkacz, 2010). Photovoice participants are viewed as the source and creators of knowledge of their own experiences and become co-researchers (Savin-Baden & Wimpenny, 2007) who act and speak on their behalf (Lather, 1991). Through a collaborative process between the researcher and the participants, a shared meaning of the study's focus emerges (Krumer-Nevo, 2009).

Among the techniques used by social scientists to record and understand community life and social conditions, photography has been noted as being a rich and meaningful tool (Downey & Anyaegbunam, 2010). Visual data in the form of photographs have been historically used in anthropology, sociology, journalism, and public health. As with any participatory action research, photovoice advocates that local citizens are in the best position to define and articulate for their needs and they are the most suitable decisions makers for addressing those needs. Photographs can be used to actualize what exists in the research, especially when local residents are involved in taking the pictures, telling the stories, and selecting the photographs that they feel are most pertinent (Downey & Anyaegbunam, 2010).

An advantage of photovoice is its flexibility. Photovoice can be used by a young person working alone, in collaboration with a parent, sibling, or friend and can be used to explore a range of topics (Bartlett, Lorenza, Rankin, Elias, Mustafa, & Weider, 2011). Marrow (2001) suggests that photography is cost-effective, easy, and an enjoyable way of gathering data from local citizens that can be used to stimulate further data in the form of dialogue. Dialogue is not just a technique, but a principle founded on the belief that shared

meaning and common definitions of a problem are necessary for planning and implementing change (Peterson & Dunnagan, 1998). Photovoice can offer an innovative way of inviting individuals to identify their community needs, local assets, and possible solutions (Downey & Anyaegbunam, 2010).

There are also disadvantages of photovoice. Although photovoice yields images, which can be analyzed to generate themes and obtain meaningful interpretation, data analysis from photographs is not an easy task. There can be multiple interpretations of the same photograph (Sharma, 2010). Sharma (2010) argues a photograph is a single snapshot of the reality. But the reality is dynamic and changing so the construction of the reality from a photograph is not always complete. Wang and Burris (1997) contend the outcome of participants' photographs on their family, friends, and communities is uncertain and unpredictable. Participants may be mindful of this, become fearful of those individuals with power and censor what they photograph.

Photovoice encompasses three theoretical frameworks: empowerment education (Freire, 1970; Freire & Macedo, 1987), feminist theory (hooks, 2000; Kramarae & Spender, 1992; Smith, 1987), and a participatory approach to documentary photography (Ewald, 2001, 2005; Hubbard, 1991, 1994; Spence, 1995). All three theoretical frameworks support representation and ownership of one's personal voice. The theoretical frameworks begin by first directing change at the individual level, transforming perceptions such as self-worth. The focus is then directed to the community level to improve quality of life and then finally to the institution level to enforce change through policies (Wang & Burris, 1994). The theoretical framework of photovoice served as the foundation of this study.

Method

Researcher

I, the researcher of this study, am a White, male teacher educator from a state teaching college in the southwest U.S.A. In the spring of 2012, I completed a three-week Fulbright Specialist teaching grant at an Arab teacher education college in Israel. My main duty was to teach four sections of a special topics course on photovoice and participatory action research, which I developed, to Palestinian, preservice teacher education students. I do not speak Arabic and had no prior connection with the college prior to acceptance into the Fulbright program. While in Israel, I lived in an Arab village where the college is located.

Participants

During the spring 2012 semester, 60 preservice teacher education students from a small, Arab village north of Tel Aviv, Israel participated in this study, of whom 55 were female and 5 were male. Students were Palestinian, primarily Muslim, English majors working on their undergraduate teaching degree and were enrolled in other teacher education courses while enrolled in my course. All students spoke English as their third or fourth language and were either first, second, or third year students at the college. Students lived in same village as the college or nearby villages and commuted to the college by bus or car.

Procedure

The following research question guided this study, what are the everyday realities and experiences of Palestinian college students living and studying as citizens of Israel? I relied on published Israeli/Palestinian academic literature before my arrival in Israel to write the research question. During the first week of the course, I provided an opportunity for students to revise or rewrite the research question based on their needs and interests. Students asked

questions on the photovoice process itself but no one offered revisions to the question or asked to rewrite it.

Each section of the course met twice a week for an hour and a half. During the first week of the course, students viewed online photovoice videos and completed photovoice projects. Students also read my own published research using photovoice with English language learners in elementary school (Graziano, 2011), secondary students enrolled in an economics course (Graziano & Herren, 2009), and first-year inner city teachers (Graziano & Litton, 2007). Throughout the course, students studied participatory action research, the methodology of photovoice, including how to use it as a tool for data collection, needs assessment, and curriculum instruction, the benefits and challenges of photovoice, ways photographs can be used to tell stories, and the ethics of photovoice.

The ethics of photovoice was introduced to students by Goodhart, Hsu, Baek, Coleman, Maresca, and Miller's (2006) photovoice work and was discussed early in the course before students began taking photographs. This involved capturing a person's image on film and protecting their privacy, not intruding on personal space, not placing someone in a false light, and not using a person's likeness for commercial gain. Ethics was reviewed throughout the course, as needed.

All students owned a cellular phone with a built-in camera and used their own phones to document their responses to the research question. The data collection process lasted two weeks. Since students and I met twice a week in class and participated in weekly photovoice lessons during the same time they were in the community collecting data, we decided not to place a limit on the number of photographs taken. Students made connections from the new knowledge obtained in class to their own stories and were often inspired to take additional photographs.

The storytelling component of this study involved written narratives on the following questions from the PHOTO acronym: Describe your *P*icture. What is *H*appening in your picture? Why did you take a picture *O*f this? What does this picture *T*ell us about you or your life as a Palestinian college student living and studying in Israel? How can this picture provide *O*pportunities for us to improve life with regard to Palestinian communities in Israel? Students decided to select four of their own photographs that best depicted their response to the research question. Students answered the questions from the PHOTO acronym for each of their four selected photographs. Students then created a PowerPoint slideshow of their photographs and stories and posted it to a class wiki (unlisted) site for other invited students, administrators, faculty, staff, family, and community members to view. We met in a computer lab on the last day of class to celebrate students' success with the study and to view each other's work.

Data Analysis

Data were analyzed through constant comparison analysis (Glaser & Strauss, 1967) often referred to as coding (Gay, Mills, & Airasian, 2009). With coding, the analyst chunks the data into smaller segments and then attaches a descriptor or "code" for each segment (Leech & Onwuegbuzie, 2008). Coding allowed me to indicate recurring patterns in the data by categorically marking units of text with codes. The identified themes became the results of this study. Due to time constraints, students were not involved in the analysis of data.

Results

This section discusses four themes that emerged from the photographs and stories captured by the students. These themes include: (1) campus climate; (2) housing and land; (3) marriage and family; and (4) environment.

Campus Climate

At the time of this study, the college celebrated its 10th anniversary. Many students photographed the conditions on and around the campus, currently comprised of two buildings. Students photographed the only parking lot on campus and argued it is often full and overcrowded. The only other alternative to the parking lot, argued one student, is street parking. She commented that it is stressful to park on the street, blocks from campus, because it means rushing to class to avoid being late. Another student photographed piles of debris in the parking lot and noted the debris occupies parking spaces allocated for faculty and students. She also noted, "the debris is unhealthy and not attractive for students and visitors to walk by every day."

Several students photographed the elevator in the main building on campus and argued it is too small. In fact, one student photographed a posted sign on the elevator that read "Danger. Elevator only holds four people at once." A student noted there is usually a wait time to take the elevator. "If you are pregnant, you have no choice but to wait," she said. Another student photographed the crowded stairs in the main building. She wrote, "Hundreds of students use the stairs. Even when only a few students use the stairs, they are crowded because the stairs are very narrow. This problem makes it difficult to get to class on time; it is also very dangerous because you could be pushed and fall on the stairs."

Students commented on the college's library policy to store personal belongings in lockers before entering the library. Many noted that the lockers do not lock. One student commented, "We are required to store our belongings outside the library because we are not allowed to bring them into the library…Sometimes we find things missing from our bags. This concerns me."

Others photographed classroom conditions and discussed the lack of air conditioning in the building, mainly on the top floor, and no restroom or water on the top floor. One student shared, "it is difficult to focus on my studies and learn when it is hot and we have no AC."

Several students photographed the outdoor common areas on campus and wished for green spaces with shade and more seating to study and socialize with others. One student wrote, "We don't have beautiful views or green gardens in front of our college. We don't have a good place to relax in our break. Actually, we have just one little yard with few desks in the sun. Beside that, there is a licensing car station next to our college, which commits too much noise and distracts us, and it affects our studies."

Housing and Land

All five men in the study photographed images of houses and land in their village and neighboring villages and spoke about the limited land available in Israel and their alternatives to building a house.

One student photographed a pile of demolished concrete and said:

> Those who decide to build a house on an unauthorized area will surely face a despicable outcome. This wreckage [in the photograph] is of a house, which was demolished recently in my village. Needless to mention that the house was built on the owner's own land; his land was and still is for agriculture use only. Since there is no place to build new houses in the village limits, many people decide to build their houses illegally hoping that one day the government will accept to expand the limits of the village and change their land type from agriculture use to construction use. You can see that their hopes and dreams were demolished and buried under these remains. If the government finds out that your house was built illegally they will send you an order to destroy it by yourself or they will come and destroy it for you. As a young male who is about to build a house I ask, where to go and how to improvise?

One student discussed how many individuals renovate family homes and add new floors above existing housing structures to compensate for the lack of land. He reflected on his photograph from the rooftop of a building overlooking his village and commented:

> This picture [of the village] shows how people somehow succeed to improvise and build houses legally. The houses are built randomly. Everyone who gets a green light to build a house in his backyard or above the parents' house will start building at once. Some new houses are extremely close to each other and the houses are built hierarchically above the parents' house. Can you imagine how bothering and complicated this issue is? As a young man, I need to build a house and get married. I want my child to open his room window and see a tree in our garden not the neighbors' laundry hung on a rope.

Another student photographed a panoramic view of an empty field in a valley near his village. He noted, "It's a wonderful picture of my charming village. We are 1000 person in a space of 500 meters. We can see that there are an empty large spaces but our government doesn't want to give us the permission to build." He concluded his story with more questions than answers and noted, "Imagine yourself with three other families in one small building. You can't even breathe easily. You always hear your neighbors talking. You can't feel comfortable and we are still without a solution."

Marriage and Family

The majority of female students photographed images of household related chores such as cooking, cleaning, and caring for younger siblings and discussed their strong commitment to their parents. One student noted:

> Lunchtime is precious in the Arab families. Mother prepares the food and everybody sits on one table to eat together. But, if mama isn't in the house it becomes one of the girls' duties. They have to prepare the food and of course wash the dishes afterwards. Home chores are likely to girls and that's a disadvantage I would like to change. Boys don't touch anything mostly. Girls do all the jobs and the oldest one does the cooking and most of the chores.

Another student commented on her family obligations and discussed a photograph of her brother working on the computer. She wrote:

> My brother is working on the computer trying to do homework for school. As his big sister, I have two jobs. First, to help him get his homework done. Second, to teach him how to surf the Internet safely since both my parents don't know how to use it. They only hear the disadvantages of the Internet. So, they gave me the job to monitor my sibling's work on it and to know what sites they are looking at. It is a good thing

> to watch out for your brothers and help your parents at the same time. But, it would be nice to have them know how to use the modern technology."

Several female students echoed this sentiment of caring for younger siblings. One student wrote, you have to be the stepmother when your mom is not home especially if there is a baby in your family. You have to watch him and to take care of him carefully.

Female students also photographed and discussed images related to weddings and marriage and stressed the value of marriage and having children in their culture with an emphasis on household related chores mentioned earlier. One student commented that, "One of the most important responsibility for the married woman is preparing the food for her husband and cleaning the house." In contrast, one student noted that young girls should only think about their schoolwork and their plans for the future. They are too young and irresponsible to get married and have children, she commented. She offered advice to others and said, "We invite people from all over the world to speak up and raise their voice to prevent this phenomenon from controlling our society. All we need is awareness campaign against marrying too young and let it start in our village."

A female student juxtaposed images of a petite, underweight woman next to a larger, overweight woman and reflected on her views of marriage. She said:

> When women are single, they take more care of their self to look younger and healthier. Once they get married they tend to go with the foods that their husband or children like, rather than eating what they prefer. Also, many of women end up eating foods that are left out at the end of the day, thinking it will go to waste.

Environment

Students photographed environmental images from their villages such as dilapidated neighborhoods and buildings and argued for a cleaner and safer environment. One student noted that, "the sides of the streets and sidewalks are full of garbage. A person who has something to throw away doesn't throw it in the bin. The street becomes a place for dumps not for the cars." The trash in our communities is not healthy and may cause pollution and diseases, said another student.

Several students photographed children playing in empty fields with construction supplies and tools and photographed children playing in the street. One student stated, "we need parks and safe places in our villages for children to be children without harm."

Another student photographed a bus stop in her village with no seats or shelter to comfort and protect passengers from the sun and elements. She noted that, "passengers stand in the heat for hours waiting for the bus. When the bus finally arrives, there are cars parked on the side of street so there`s no place for the bus to stop. This often causes a traffic jam."

Students also photographed road conditions within and around their villages. One student commented that, "our villages are so small and the roads are narrow and often neglected by officials. Some streets have potholes that remain unfilled. Other neighborhoods have no traffic signs for those who are crossing the street. In addition, there are no sidewalks especially for the children in order to walk safely without any danger."

Although not part of this photovoice study, a student enrolled in my course was inspired by the photovoice methodology and introduced it to a classroom teacher of the junior high school where she was a substitute teacher. Together my student and the classroom teacher taught a lesson on the environment and used photovoice with students to document their views on the environment. Students photographed similar images as participants of this

study such as trash, neighborhood pollution, and lack of recycling. They discussed and wrote narratives on the effects these items have on the environment and displayed their work in the lobby of the school. I visited the exhibit with three of my students from the college and met the junior high school students who participated in the project.

Discussion

The purpose of this study was to allow Palestinian, primarily Muslim, college students to document, reflect, and critique, through photography and storytelling (photovoice), their everyday realities as Arab citizens living and studying in Israel.

Results from this study address social, economic, political, and cultural issues related to being a Palestinian living and studying in Israel rather than issues directly related to teacher preparation. As seen in this study, students are deeply concerned about land, the infrastructure of their villages and college, the environment, and their future. As one male student shared, "I need to build a house and get married. I want my child to open his room window and see a tree in our garden not the neighbors' laundry hung on a rope… As a young male who is about to build a house I ask, where to go and how to improvise?"

Roy (2004) argues the crux of the problem between Palestinians and Israelis is occupation and Israel's continued control of Palestinian lands and resources. The fragmentation of Palestinian land into geographically noncontiguous areas, with exit and entry tightly monitored and controlled by Israel, has had a devastating impact on the economy and society. Further, the destruction of Palestinian homes, businesses, buildings, agricultural land, and crops alienates the Palestinian worker from his/her source of livelihood and further weakens the possibility of living a normal life (Roy, 2004).

It is interesting to note that female students spoke about gender roles inside the house rather than the occupation of land outside of the house. Results from this study speak to traditional gender roles in Arab communities and support Nasser's (2002) claim that the traditional Palestinian societies lend disproportionate weight to the role of the male and underestimates the influence of the female. Alayan and Yair (2010, p. 834) report that many Palestinian women in Israel are pressed to be constantly aware of the collective meaning of their actions; they are often expected to weigh collective interests more heavily than their personal needs; and many are expected to censor their individual interests and aspirations when the latter conflicts with those of *Hamulah*, the extended family (Rapoport, Lomski-Feder, & Masalha, 1989). Further research is needed on female Palestinians' desires, interests, and aspirations to own land themselves and whether or not their desires are suppressed due to social pressures and cultural norms.

Researchers have noted that Palestinian families support the studies of females on the condition that they vow to study for a profession that will expand the family income and guarantee a local job, one that can be easily supervised by the *Hamulah* (Alayan & Yair, 2010). As such, females choose majors like education and nursing that are provided locally (Herzog & Bader-Araf, 2000). The impact of the *Hamulah* on females of this study who chose education as a major is unknown. More research is needed in this area. Future research should also investigate the impact of the *Hamulah* on male students and their desire to become teachers.

Researchers have also concluded that some Palestinian female students adopt feminist perspectives even against the resentment of elders and their extended families (Sa'ar, 2007). Many Palestinian females in Israel have taken steps towards celebrating their femininity opting for gender equalization (Erdreich & Rapoport, 2006). There was insignificant evidence of opting for gender equalization in this study by the single female student who spoke out

against marrying too young. I wonder if other female students of this study felt the same way and were fearful of sharing their views publically.

As seen in this study, photovoice can be a powerful key to cultural survival. It allows stories to be told without verbally speaking the message (Markus, 2012). Witherell and Noddings (1991) stress that storytelling can be a therapeutic endeavor and an emancipatory act. For disenfranchised populations whose voices and language have historically been oppressed and denied, photovoice can send a vital message to others (Markus, 2012). When people learn to analyze critically social structures and discover their capacity to effect change through engaged citizenship, oppressive sociocultural influences are no longer internalized to the same degree (Cammarota & Fine, 2008).

Though photovoice ultimately should connect participants with policy makers to influence and enact change, the display of participants' photographs and stories on the wiki site and an open-campus presentation of the study's results, which I facilitated before my return to the United States, provided an opportunity to share participants' experiences, concerns, and challenges with college administrators, faculty, staff, family, and other students. Due to time constraints, participants of this study and I did not identity policy makers in the community or state level to address the issues raised by participants. It is recommended that future researchers identify policy makers at the onset of their studies who have the authority to enact change and implement policy revisions or write new policies. Working closely with such individuals has the potential to strengthen the transformative goal of photovoice.

Students stated they enjoyed the use of photovoice as a teaching strategy. This was evident with the student who was a substitute teacher at a junior high school and implemented a photovoice project on the environment. Students of this study were able to make practical connections with photovoice as future English teachers. Students recommended using photovoice to study social issues that stem from literature and recommended using photovoice with elders and parents to examine generational differences among Palestinians. They also recommended that Jewish and Palestinians students participate in a photovoice study to understand and appreciate culture differences.

Photovoice can be used with an array of populations regardless of location and setting. Additional groups may include migrant workers, prison inmates, individuals with special needs, and international exchange students. Higher education faculty are encouraged to discuss photovoice in courses on critical pedagogy, multiculturalism, curriculum development, technology, research methods, the digital divide, inclusion, and social justice (Graziano & Litton, 2007).

The photographs produced and stories shared from this study should not be generalized to all Palestinian students attending Arab colleges or universities in Israel. A larger sample size is recommended with future studies. Educators should consider using the results of this study to enhance the national Palestinian curriculum in schools and communities across Israel. As studies have shown, exclusion of the minority from the process of decision-making about their curriculum is often an indication of their marginal social status. Lack of involvement of minority group educators in the process of decision-making leaves the curriculum subject to the mercy of the dominant group (Nasser & Nasser, 2008).

Conclusion

While Palestinians view education…as a source of empowerment, the dominant groups have utilized the education system as a mechanism of social control…that is, they never viewed education as a vehicle for development and social change for the minority (Al-

Haj, 1995). The use of photovoice in this study provided opportunities for participants to write, own, validate, and share their voices and personal narratives and create new ways of thinking. Participants of this study identified and critically reflected on their experiences, values, and areas of concern such as an improved campus climate and environmental issues. Markus (2012) reminds us that providing a venue for young people to share their views in a safe environment allows for powerful messages to emerge that can lead to social change.

There is a critical need to examine the conception and status of democracy in nation-states and deeply conflicted societies, in particular with reference to majority-minority relations (Lemish; 2003). Results from this study support Lemish's claim. Palestinians from this study living and studying in Israel wish to strengthen their identity, seek justice, tolerance, human rights and representation in all areas of the public sector. They wish to promote peace and development and education for democracy from themselves and future Palestinian generations. This study is only one step toward enhancing our knowledge and understanding of the Palestinian culture in Israel. This study provides direction for future studies in this area and offers researchers the possibility of using photovoice as a form of needs assessment and data collection. Freire (1970) reminds us that one of the loftiest objectives is human liberation. Liberation cannot take place without awareness, without a conception or reality that incorporates a critical view toward itself. The liberating activity of education can occur only if it is directed against the ruling culture and authority of the repressors. Liberating education operates exclusively through creating dialogue with those it seeks to educate (Abu-Rabia-Queder, 2008, pp. 396, 397).

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The Gender-Related Role of Teaching Profession in Turkey

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Abstract
Teaching is a professional job that requires expertise. The characteristics of the professionals can affect the quality of the profession. One of these characteristics is gender. In this study, the gender-related role of teaching profession in Turkey is examined. The analysis in a historical perspective of gender distributions of students who have teaching education and teachers employed in educational institutions and the gender debate in order to make teaching a profession are the subjects of this study. The basic data of the study is the official statistics and the literature on the profession with gender. Qualitative analysis performed on the data and change in the gender distribution of professionals, and the effects of this change on the reputation and the quality of the profession are evaluated in this study. Based on the findings of the study, it can be said that the teaching profession in Turkey tends to be a female profession and some of the teaching branches are associated with gender, and that this determines the status, reputation and effectiveness of teaching profession.

Keywords: Turkey, teaching profession, gender, teacher role, qualitative research

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Introduction

The quality of a school can be best measures by the quality of its teachers. For this reason, the most crucial element in education is teacher. There are many factors affecting the qualities of the teachers. One of them is gender. Whether the teachers are male or female may affect the importance and aspects of the profession.

Teaching is one of the oldest professions in Turkey where women also played role; it is also one of the first public professions as well (Kurnaz, 1997,p. 50). The first female teachers' school was opened in Turkey in 1870. The purpose was to train female teachers for the girls' schools that were introduced for the first time to the Turkish education system back then (İKMM, 1933). Previously, women did not serve as teachers in the public schools with the exception of "homeschooling for kids" (Akyüz, 2004).

It could be said that women's visibility and involvement in teaching profession has increased since 1870s. Female teachers were allowed to work at male schools as well since 1918 (Koçer, 1972,p. 124). Number of female teachers in different levels of education is increasing in Turkey.

The interest by women in teaching profession led to discussions as to whether it is actually a job that is best for women (Tan, 1995; İçli, 1997). The basic idea in this assumption is that teaching is appropriate for the role and status of women as spouse and mother; for this reason, women tend to become teachers.

Although some studies were done on training the teachers and their qualities, the direct role of gender in teaching profession was not analyzed so far (Öztürk, 2005; Uygun, 2007). It could be said that some accounts reviewed some issues pertinent to the lives and profession of women (Weiler, 1994). In reaction to the research findings that women tend to become teachers because it is seen a part-time job and a low-status profession, feminist scholars offered alternative and critical studies (Gürses, 2003; Gök, 2005; Tan 2005). To this end, it could be said that the role of gender in picking the teaching profession in Turkey deserves further attention.

This study asks the following questions to investigate the role of gender in selecting teaching profession in Turkey with particular reference to the change in the number of teachers by gender and the female teachers:

- What are the reasons for the creation of institutions where female teachers are trained?
- What are the approaches that establish linkage between teaching profession and gender?
- How is the visibility of female teachers in the education institutions?

Relying on the research findings and the official statistics, this study attempts to define the role of gender in picking teaching profession in Turkey.

Findings

This part reviews the teachers' schools for women and the reasons for the creation of these schools; subsequently, the studies suggesting that teaching is a profession suitable for women are analyzed and the gender breakdown in the profession is considered.

Institutions where female teachers were trained

The training of the female teachers has become important in parallel to the education of girls. The opening of girls-only schools raised the need for female students (Akyüz, 2000; Özger, 2012). For this reason, female teachers were trained to serve in girls' schools. The first institution to train female teachers was Darülmuallimat (literally means house of female teachers) İKMM, 1933).

The 1968 Maarifi Umumiye Nizamnamesi (Directive on General Education) states that a girls' school (elementary school) and a female teachers' school (Darulmuallimat) would be opened in Istanbul for the first time (MUN: articles 68-78). This school was opened on 26 April 1870 in a ceremony in Istanbul where Minister of Education Saffet Pasha delivered an opening speech. 17 graduated from this school in 1873 and they started working in girls' elementary schools (İKMM, 1933).

Darülmuallimat has played an important role in the increase in the number of girls in schools by training female teachers (Öztürk, 2005). After the opening of this school, girls' elementary schools were also launched in different parts of the country because the idea that female teachers should serve in girls' schools was prevalent back then (Kurnaz, 1997,p. 44). The development of the institutions training female teachers by the types of the schools was also different.

The training of female teachers who would serve in preschool, primary and elementary schooling institutions was ensured by the creation and improvement of Darulmuallimat. Ana Muallime Sınıfı (Main Female Teacher Class) was founded in 1913 as part of the Darulmuallimat, followed by the establishment of Ana Muallime Mektebi (Main Female Teacher School) in 1915 which was closed in 1919. Another main school was opened in Ankara in 1927 and it was transferred to the Istanbul Girls' Teacher School in 1930 (İKMM, 1933). The practice by which the preschool teachers were trained in an institution offering exclusive training for women for the first time was based on the idea that preschool teaching was suitable for women.

The girls' teacher school, restructured in 1913 in the name of Darulmuallimatı Aliye (Supreme School of Female Teachers) to train teachers for elementary schools as well, was divided into three parts: iptidai (primary), ihzari (elementary) and ali (high) schools. The first trains teacgers for primary schools, the second for girls' teacher schools and the last for the high schools offering advanced education and curriculum (Akyüz, 2012) .

The first female teacher schools outside Istanbul were created in different cities by adding a few classrooms at girls' elementary schools. These were institutions which were training teachers for the girls' primary schools. Independent Girls' Teacher Schools were also opened in Izmir, Sivas and Erzurum (İKMM, 1933).

İnas Darulfunun (Girls' University) was opened in 1914 to offer higher education for girls. The first female students to enroll in this institution were Darulmuallimat graduates. Some of the graduates also served as teachers in high schools (Gelişli, 2004,p. 125).

After transition to republican regime in 1923, mixed education policy was introduced; however, both female and male teacher schools survived a long time. Male students were admitted in the girls' boarding schools whereas girls were admitted as daytime students in the male boarding schools. However, this distinction was removed in subsequent years. The village institutes were the first boarding teacher schools for both girls and boys (Uygun, 2007). Girls technical and art teacher schools were also offering education for girls only (Öztürk, 2005). However, opposite sex students were also admitted in these schools later.

In 2000s, it is no longer possible to say that there is separate training and education for girls and boys. The gender-based distinction in educating teachers disappeared over the time (Öztürk, 2005).

The idea of female-specific schools disappeared over the time; however, female teachers were seen as key figures holding crucial roles for Westernization and modernization in late Ottoman and early Republican periods (Tan, 1996; Kırkpınar, 1998). In late Ottoman period, teaching was the second most popular profession among women in public sphere after nursing (Özger, 2012,p. 425). We could say that women participated in social life in Republican Turkey as teachers (Doğramacı, 1997,p. 112). The main factor leading the women to become teachers is the idea of creating girls' schools and employing female teachers in these schools. Religious beliefs and cultural features are the main factors behind this idea. However, these factors have become less significant during the process of Westernization.

Gender and teaching profession

Teaching was seen as a profession that clerics would perform in the past (Öztürk, 2005,p. 1). Therefore, the members of this profession have generally been male. Women mostly performed as tutors in "homeschooling" (Öztürk, 2004). Women's becoming professional teachers was related to the opening of female-specific teaching schools. As noted earlier, such a school was first opened in 1870 and the first female teachers were appointed in 1873 (Keçeci Kurt, 2011).

The first teachers' school in Turkey is Darulmuallimin which was opened on 16 March 1848 (Öztürk, 2005). This school admitted males only. According to Selim Sabit Efendi, a graduate from this school (cited in Akyüz, 2000,p. 10), "primary school teachers should be women because kids grow up among the women since their birth; they are close to the kids; and women have greater passion for the kids than the men do. A male teacher may punish and beat a boy for nothing. A female teacher does not do this; they tend to raise the kids with leniency and passion." With these ideas, Selim Sabit Efendi became one of the first Turkish educators to raise a discussion on the role of gender in teaching profession.

Motherhood is the dominant role attributed to women in Ottoman society (Ahmet Rıza, 1324-1908). Namık Kemal, a late Ottoman period intellectual, defended education of girls; but he noted that they should be educated so that they would become a good wife and mother (Akyüz, 2012). He believed that the first educator of a child is his or her mother at home. Mother was seen as the first educator of the child; so it is meaningful to see that the role of education in early stages of the school years is attributed to motherhood as well. Because of the impact of this tendency, at the beginning, preschool teaching was viewed as a female profession in Turkey; as a result, Main Female Teacher School where only girls were admitted was opened (İKMM, 1933; Oktay, 1999). Currently, males are also admitted in the departments training preschool teachers (Oktay, 1999). However, no significant interest by men is observed in this field. The main reason for the lack of interest by men in this field is concern over job security.

According to the research findings, one of the reasons that preschool and primary school teaching is seen suitable for women is the cultural characteristics of the society (Kreiser, 2002). The families relate the appearance of their daugthers in public sphere to educating little kids which they feel close to. The best profession found suitable for the girls is service as housewife. If the girls are to work, the best option is viewed as their service as teachers. Even in a research done as late as 1973, one out of four mothers in rural areas wanted their daugthers to become teachers (Kırkpınar, 1998,p. 27). This has not changed much today. In addition to the cultural factors, the political approaches may also encourage the women to adopt teaching as profession.

After the announcement of republican regime, a new woman type was created. This style refers to a woman holding the patters and symbols of the new system and ideology. To train this woman, an important mission was attributed to female teachers. These teachers would serve as the models and carriers of this typology. The role of the women as mothers was considered by the founders of the republican regime important; in addition to this role, the women were also seen as educators. The female teachers were represented as prestigious and respected women in the print media (Gürses, 2003,p. 16-38). The woman image of the republican regime was defined in a controversial boundary between conventional and contemporary (Kadıoğlu, 1998,p. 89). During this process, teaching was referred to as suitable for women like nursing.

Women who assumed jobs in public sphere in the Republican era were employed in low-status positions. However, thanks to the new policies in the republican regime, women had the right to take up any profession (Başbakanlık, 1998). But it is still possible to say that their involvement in different professions has never been adequate. Number of female students in education sector has been increasing. However, there are some researchers who argue that this is happening because women fill the void left by men in different sectors (İçli, 1997,p.237; Tan, 1995,p.110). According to these researchers, men prefer more prestigious and quality professions whereas women fill the void they left. Such arguments raise discussions on the image and prestige of the teaching profession.

Interest In Teaching Profession By Gender In Turkey

During the promulgation of the republican regime, number of primary school teachers in 1923 was 10,102. 1,081 were women and the remaining men. 378 female and 2,356 male teachers received professional training (Akyüz, 2012,p. 380). The number of teachers in official and private primary schools in 1933 was 15,123. 4,803 were women and 10,320 men. Number of primary school teachers in 1950s increased to 37,932; 10,390 were female and 27,542 male teachers. Number of teachers working in the primary schools dramatically increased in 1963; there were 76,634 teachers; 18,929 were women and 57,705 were man (DİE, 1966,p.16).

In 1983, number of teachers was 208,393; 86,232 were women and 122,161 were men. In 1993, number of teachers was 237,943; 102,391 were women and 135,552 were men (MEB Statistics). A review of these figures and developments show that number of female teachers has increased steadily over the time.

It could be said that number of female teachers has increased more visibly since 1980s. Training teachers was left to higher education institutions in 1982 (Öztürk, 2005). After this regulation, it could be said that girls picked teaching profession more eagerly. It is also possible to say that women express greater eagerness to become teachers in Turkey in 2000s. Reviews could be made by reference to some current data on this matter.

Gender breakdown in institutions offering professional education

In 1982, the institutions educating teachers were incorporated in the faculty of education. Preschool, primary and elementary school teachers were trained in faculties of education; there are also other similar options to become teachers including postgraduate certificate programs (YÖK, 1998). Table 1 provides the number of students at the faculties of education by gender (ÖSYM,2013).

Table 1 . Number of students at faculties of education by gender (2011-2012)

Field of study	**Number of male students**	**%**	**Number of female students**	**%**
Preschool teaching	2591	6.6	14439	93.4
Primary school teaching	13879	35.5	25175	64.5
Physics (elementary school)	1052	52.2	1153	47.8

A review of the data in Table 1 shows that number of female students is greater than number of male students in the primary school teaching category (ratio 65 pct). In preschool teaching category, a small number of male students seek degree. The reason for the male students' interest in this category is job security after graudation. Currently, preschool teachers have a greater chance of getting a job (İçli, 1997). It is estimated that male student admission in this field will grow because of further unemployment. It could be said that male domination is still the case in the field of high school teaching category.

Number of teachers in elementary schools by gender

The figures on the number of teachers employed in schools are provided in Table 2 (M.E.B, 2013). These figures are important as they show the difference between the employed and the candidate teachers. This difference may also give some opition on the tendency towards teaching profession based on gender identity.

Table 2. Number of teachers employed in official schools by gender (2011-2012)

Field of education	**Male**	**%**	**Female**	**%**
Preschool teaching	**3 073**	6.4	**44 639**	93.6
Primary school teaching	**113 776**	43.5	**147 721**	56.5
Elementary school teaching	**122 352**	48.7	**128 481**	51.3
High school teaching	**131 371**	50.2	**101 146**	49.8

A review of the figures in table 2 shows that preschool teaching is extremely popular among women (93.6 pct) while they are more eager than males to assume teaching positions in primary schools as well (56.5 pct). It could be said that ratio of female teachers dclines in high level education institutions. Ratio of women in elementary school teaching is 51.3 pct whereas ratio of women in high schools is 49.8 pct. These figures show that female visibility in all different categories has increased. However, the growing interest by men in preschool teaching profession should also be taken into consideration. A review of Table 1 and Table 2 shows that the ratio of men in preschool teaching increases whereas the ratio of women in other fields is expected to grow as well. There is a significant difference between the visibility of women in official public schools and their visibility in the private schools. The intensity of women teachers in all types of private education institutions is greater than the intensity of male teachers. It was argued based on the figures and data from 1991 that the employment of women in private schools could be attributed to concerns over having presentable employees. Table 3 gives figures on the number of teachers employed in private schools by gender (M.E.B., 2013)

Table 3. Number of teachers in private schools by gender (2011-2012)

Field of education	**Male**	**%**	**Female**	**%**
Preschool teaching	**547**	3.6	**14 674**	96.4
Primary school teaching	**5 161**	25.1	**15 385**	74.9
Elementary school teaching	**7 004**	37.1	**11 922**	62.9
High school teaching	**10 528**	47.1	**11 850**	52.9

A review of Tables 2 and 3 reveals that number of female teachers in private education institutions is greater than number of male teachers in all levels. Number of private education institutions started growing in Turkey after 1980 (İTO, 1999; Uygun, 2013). It is interesting to see that number of female teachers in private education sector is higher.

In terms of income level, there is no difference between male and female teachers in public schools. However, the case is different in private schools (Ateş, 2009). Even though there is no gender-related difference in these schools, it is evident that there are problems related to the amount of salaries the male and female teachers are entitled to (Eğitim Sen, 2005). Looked at this way, the intensification of female teachers receiving low amount of salaries in private school may be meaningful. This raises the argument that teaching was made a women ghetto given the attempts to turn the profession into a job which entails low amount of salaries (Gürses, 2003,p. 48). Given the economic and cultural as well as other factors over the time, it could be said that teaching has become more popular as a female-specific profession.

In addition to the teachers employed in primary and secondary schools, the number of faculty members in universities by gender may be important as well because faculty membership may be seen as a more prestigious profession. Table 4 provides figures and numbers of the faculty members working at the universities (TUİK, 2013).

Table 4. Number and figures of faculty members working at the universities by gender (2011-2012)

Academic title	Gender		Female ratio %
	Male	Female	
Professor Dr.	12054	4729	%28,17
Assoc. Prof. Dr.	6303	2954	% 31,91
Assist. Prof. Dr.	15777	8982	% 36,27
Lecturer	11643	7370	% 38,76
Tutor	3352	5197	% 60,79
Research Assistant	19137	18112	% 48,62

A review of Table 4 shows that ratio of women declines in the universities as the academic ranking increases. Ratio of female tutors is 60.79 pct whereas they constitute only 28.17 of the full professors. These figures show that women do not sufficiently represent

themselves in the education sector that requires higher academic ranking. According to Acar (1998: 318), the academic pyramid shows that women are intensified in certain fields. Statuses like lecturer and tutor are marginal posts in academic field. Those who are employed in these positions are supplemental staff; as a result, the presence of women in this area refers to a superficial participation of women in education sector.

What really matters in universities is professorship. The academic rankings in Turkey include assistant, associate and full professorships. Research assistantship is the initial step towards professorship. The ratio of women as research assistants (48.62 pct) is not a poor performance. Number of women in universities is growing every year. For instance, the ratio of female research assistants at the universities was 44.5 pct in 2004-2005 academic year whereas ratio of female assistant and associate professors was 30 pct and ratio of female full professors was 26.5 pct (YÖK, 2005,p. 4).

The status of women in the same profession in other countries was also analyzed to better understand the tendency towards teaching profession in Turkey. Table 5 provides figures on the number of female teachers in some countries. Teachers are not the only employees in education field. Civil servants and secretaries as well as other similar figures can be included in this category. Most of these figures are also women (OECD, 2013).

Table 5. Number of female teachers in some countries (2011-2012)

Countries	**Female ratio**
Germany	%64.4
France	%65.8
England	%67
Portugal	%70.4
New Zealand	%69.6
US	%69
Russia	%75
Brazil	%74.6
Turkey	%50.3
OECD average	%66.6

A review of Table 5 reveals that the ratio of female teachers in OECD and other countries is higher than the ratio of female teachers in Turkey. However, it is also seen that Turkey exceeds the 50.3 pct of the threshold. A review of the figures on the institutions training teachers in Table 1 reveals that Turkey may catch the world average shortly.

A review of the figures in the first four tables suggests that women's participation and involvement in the teaching profession is on the rise. This rise is visible not only in primary and secondary school education but also in higher education. If this is the case with the teaching profession, what is the case with other professions? The answer to this question provides some hints on the prestige and status of the teaching profession. Table 6 provides ratio of women in some professions in the public field(TUIK,2013).

Table 6. Number of staff in different professions in public offices by gender (2011-2012)

Professions	**Male**	**Female**	**Ratio of women**
Minister	24	1	%4
Member in Central Bank General Assembly	7	-	-
Judge	5332	2794	%34
Member of Parliament	469	79	%14.4
High level civil servant	4489	494	%10.5
Police officer	225082	13165	%5.6
Rektor (University President)	153	9	%5.6

If we look at the figures on Table 6, we could say that independently of the status of the profession, women tend to participate in some professions more eagerly. As noted in Table 6, 5.6 pct of the police officers are women whereas 34 pct of the judges are female.

Figures in Table 6 also show that ratio of women participation in some professions is low. The fact that this ratio is low in some prestigious positions could be seen meaningful because women tend to assume roles in public offices where they could play their traditional roles more easily. It should be noted that this is also the role the society attributes to women (İçli, 1997).

Based on these findings, it could be said that rather than the prestige and status of the profession, the characteristics of the profession, the working conditions as well as economic, social and cultural factors play role in the selection of teaching profession by women. If all these are considered properly, it could be concluded that teaching profession, seen as close to the motherhood role of the women and a part-time job, is also regarded as an ideal profession for women in the society (Tan, 1995; İçli, 1997; Gürses, 2003; Eğitim Sen, 2005).

The tendencies over the past and the most recent statistical information show that the traditional roles regarding profession are still influential in Turkey. But women consider the main characteristics of the profession when they choose their career path; in their choice, they want to make sure that their work will not undermine their role as wife and mother.

Even though women's role and participation in some prestigious professions has increased in the republican era; however, they have always lagged behind men. It could be said that the women's tendency towards business life and professional choices is independent from the professional status. If these figures are considered, it is hard to argue that they have any positive or negative impact on the prestige and status of the profession. However, it should also be noted that women are intensified in the low-status professions. The primary reason for this is the traditional role the society attributes to the women. Teaching is seen as one of the best professions suitable for this role. This tendency in Turkey holds similarities to the process modern countries are going through (Matthews, 2002,p. 51; Weiler, 1994; Harrigan, 1998). Teachers are seen as cheap labor; as a result, roles of motherhood and

spouse appear to be the main factors for growing tendency towards teaching profession among women.

The relationship between teaching profession and gender is also verified by research findings as well (Ottekin Demirbolat, 2006,s.1076). It is observed that gender is important in picking teaching as profession. İçli (1997,p. 262) also found that women pick teaching as their profession because they see it suitable for their lifestyle. 88.2 pct of female teachers are happy with their work and profession; and %75.7 stated that they would prefer this job again if an option is offered to them. Based on these findings, it could be said that the suitability of teaching profession for the traditional social role is the main factor for its popularity among women.

More girls now attend schools; this is a lead factor for the growing number of female teachers. Interestingly, greater number of female students attracted more girls into the schools. Since 19th century, teaching profession has become more popular for women (Gelişli, 2004). However, the perception and belief that teaching becomes a profession where the women fills the void left by men who pick other professions undermines the prestige and status of the profession. In the education management, seen a more prestigious field, it is observed that women are underrepresented and that they remain cool to assuming executive positions (Tan, 1996; Günbayı, 2005). Considering the social role attributed to women and the status and prestige of the current teachers, it could be said that the tendency of women towards teaching causes a negative perception. This perception is based on the assumption that teaching is a part-time and simple job that is extremely suitable for women. The poor involvement of women in union activities also shows that they actually internalize this perception (Türkoğlu, 1999).

Conclusion

Women have effectively joined the teaching profession as a result of cultural, social, economic and political factors since the opening of the first female teachers' school in Turkey. The education of the girls led to discussion on training female teachers as well in the society. With the modernization process, women started working in not only girls-specific schools but also mixed and male-specific schools as well. The role the society has been attributing to the women over the last 150 years has become influential in this tendency.

Because they are associated with motherhood and spouse roles in the society, women tend to become teachers. These roles are inherently traditional. However, these roles have been redefined during the process of modernization. The role of motherhood of women was underlined in the republican era as well; but they were also seen as model and educators. Because of this, women visibility in teaching profession has increased over the time. The growing number of female teachers leads to the perception that teaching is a female profession. And this perception and belief raises discussion and debates on the status and prestige of teaching profession.

Today, teaching is seen as a profession with low status and prestige. The tendency of women towards this profession is mostly viewed as them filling the void left the men. Therefore, this means that eventually, teaching is considered a low-status job. It is hard to estimate the impact of greater women involvement in the profession on its prestige and status by relying on the findings of this research. To do this, there is need for separate studies that would focus on the role of female teachers in the overall outlook and standing of the profession.

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Impact of Model-Based Teaching on Argumentation Skills

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Abstract
The purpose of this study was to examine effects of model-based teaching on students' argumentation skills. Experimental design guided to the research. The participants of the study were pre-service physics teachers. The argumentative intervention lasted seven weeks. Data for this research were collected via video recordings and written arguments. Results show that construction of concrete models and using them in their discussions and explanations provide learners with more quality (accurate, consistent, appropriate, and relevant) arguments. In addition, models' quality affects the number of claims, evidences and reasoning that are produced during argumentation. The closer learners' models are to the real situations, the more argument components they generate.

Keywords*:* Model-based teaching, argumentation, pre-service teachers

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Introduction

Current research indicates that learning how to engage in productive scientific argumentation to propose and justify an explanation through argument is difficult for students (Sampson & Clark, 2008). Although students must be willing to engage in argumentation, they also must have the skills necessary to do so (Nussbaum, Sinatra & Poliquin, 2008). However, instruction in argumentation has not typically been a part of traditional science instruction (Duschl & Osborne, 2002). In other words, schools do not make an effort to foster students' argumentation skills (Newton, Driver, & Osborne, 1999). Students are rarely asked to take positions and to develop arguments to justify those positions (Zohar & Nemet, 2002).

Various studies aimed to stimulate argumentation and used some strategies to increase the quality of students' arguments. Some of those strategies were scaffolding (Bell, 2002; Cho & Jonassen, 2002; Nussbaum & Kardash, 2005; Sandoval & Millwood, 2005; Yeh, 1998), writing (Voss & Means, 1991), utilizing video coaches (Crossa, Taasoobshirazib, Hendricksc & Hickeya, 2008), and using authentic problems (Jiménez-Aleixandre, Pereiro-Muñoz & Aznar Cuadrado, 1998; Patronis, Potari, & Spiliotopoulou, 1999). The purpose of this study was to examine the effects of model-based teaching on students' argumentation skills.

Background

Argument and Argumentation

Zohar and Nemet (2002) state that an argument consists of either assertions or conclusions and of their justifications, or of reasons or supports. Thus, argumentation is held to be a reasoning strategy and, thus, comes under the reasoning domains of informal logic and critical thinking (Jiménez-Aleixandre, Rodríguez & Duschl, 2000).

Scientists, the public and students need argumentation for different purposes. Scientists engage in argumentation to develop and improve scientific knowledge (Erduran, Simon & Osborne, 2004; Kitcher, 1988; von Aufschnaiter, Erduran, Osborne & Simon, 2008). The public has to use argumentation to evaluate information deriving from different sources and to assess the validity and reliability of evidence (Simon, Osborne & Erduran, 2003; von Aufschnaiter et al., 2008). And finally, students need argumentation to learn science by articulating reasons behind their views and presenting alternative ideas to or claims about others' views (Newton et al., 1999; von Aufschnaiter et al., 2008).

Models and Modeling

A model can be taken to be a representation of an idea, object, event, process, or system (Gilbert & Boulter, 2003). Models can have different types of modes: visual, verbal, gestural, mathematical, and concrete (Boulter & Buckley, 2000). Modeling includes construction, use, evaluation, and revision (Schwarz et al., 2009). Because modeling is an important constructivist teaching strategy, it is important to explore the ways students construct, manipulate, and interpret the scientific models in school science lessons (Harrison & Treagust, 2000).

Model-Based Teaching and Learning

Model-based learning focuses on each individual's construction of mental models of the phenomena under study (Boulter, Buckley, & Walkington, 2001). It involves the formation, testing and subsequent reinforcement, revision, or rejection of mental models of some phenomenon (Buckley, 2000). Model formation is the construction of a model of some

phenomenon by integrating pieces of information about the structure, function/behavior, and causal mechanism of the phenomenon, mapping from analogous systems or through induction (Gobert & Buckley, 2000).

When model-based learning is embedded in a particular context, factors in model-based teaching come into play (Buckley, 2000). Model-based teaching focuses on the patterns of participation, persuasion and model-building in the learning environment during which individuals construct their understanding of some phenomenon (Boulter, Buckley & Walkington, 2001).

Theoretical Framework

In order to involve with scientific argumentation and produce quality arguments, students need to learn more about the types of claims that scientists make, how scientists advance them, what kinds of evidence are needed to warrant one idea over another, and how that evidence can be gathered and interpreted in terms of community standards (Kelly & Chen, 1999; Osborne, 2002; Sampson & Clark, 2008). Since models are essential as both content products of science (Gilbert & Osborne, 1980) and in the process of coming to understand the world scientifically (Boulter, 2000; Crawford & Cullin, 2003; Harrison & Treagust, 2000; Viennot, 2001), it is argued that modeling can be a useful tool to facilitate argumentation skills.

Argumentation is a form of discourse, includes critical thinking and a reasoning process (Author, 2012). Willard (1989) states that

> Argumentation's epistemic interests inhere in a concern for the social constitution of knowledge, its analytical interests reside in a concern for the coherence, structure, processes, and environments of reasoning and utterance, and its critical interests reside in a concern for the conditions and possibilities for shared discourse (p. 11).

Model-based teaching covers all the aspects of argumentation mentioned above. Put differently, the elements of model-based teaching involve students in critical use of representations in problem solving, promote classroom discourse for reasoning with models and representations, and encourage students to think with chains or networks of causal relationships that are larger than a single A causes B relation (Clement, 2000; Kindfield 1993; Mandinach 1989, Marsh, Willimont & Boulter 1999). Hence, this study suggests model-based teaching as an environment that provides an opportunity for students to engage in argumentative discourse around a scientific phenomenon, form a reasoned argument, and assess evidence and claims critically.

The Practice Framework proposed by Passmore, Stewart and Cartier (2009) supports our rationale about fostering argumentation with the help of modeling. According to Passmore and Svoboda (2012), embedded within the Practice Framework there are at least four points at which curriculum and instruction can be arranged to promote argumentation. That is, argumentation (1) may be fostered when students are engaged in determining what to investigate or when they try to bound the problem in some way, (2) may occur as students wrestle with issues associated with research or investigative design, (3) may happen when students are attempting to use a model to explain a phenomenon, and (4) is a natural outcome when students are confronted with judging between models or ideas. Therefore, it can be said that the act of modeling in science is inherently an argumentative one (Passmore & Svoboda (2012).

Literature Review

Even though the theoretical underpinning for implementing model-based teaching to improve argumentation skills, research investigating the outcome is very rare. Only two studies were come across by reviewing the literature; however, they were not examining the effects of modeling on argumentation. Buty and Mortimer (2008) presented that teaching activities explicitly based on modeling processes favored the emergence of dialogic discourse in the physics classroom. Aduriz-Bravo (2011) found that pre-service science teachers chose to use theoretical models from science as a key component of their arguments in order to increase their argumentation skills. Consequently, we need research that explicitly explores the role of model-based teaching in supporting scientific argumentation (Passmore & Svoboda, 2012).

Methodology

True-experimental design using qualitative data was carried out for this study (Krathwohl, 1997). Control and experimental classes' argumentations were compared to measure the impact of implementation of model-based teaching on argumentation. The experimental class was randomly selected by drawing lots.

Participants and Settings

Participants in this study were pre-service teachers recruited from a physics teacher education program having two phases. The physics teacher education program lasts five years and is structured similarly to the Holmes model. According to this model, pre-service physics teachers must take a sequence of undergraduate physics courses for three and a half years during the first phase of the program. Then, they spend one and a half year taking pedagogy courses and completing their practicum experiences in local schools to develop their pedagogical content knowledge during the second phase. Consequently, pre-service teachers have two roles (i.e., learners and teachers). As learners, they try to construct scientific understanding of concepts while as teachers they try to develop teaching strategies to facilitate learning. The participants consisted of 24 pre-service physics teachers, 14 of whom were females. Their ages ranged from 20 to 22. They were in their fourth year.

The study took place in a methods course. The Instructional Methods in Physics is one of the main courses of the physics teacher education program where pre-service teachers meet five hours a week and have opportunities to build theories of physics teaching and learning, do teaching activities, examine their own teaching, observe and examine peer teaching, and experience different teaching and learning approaches. The course professor, who is also the first author of the study, taught the course. The participants took the course as two equal classes. One was the control class and the other one was the experimental class.

Intervention

Before starting to the argumentative intervention, the participants in both classes discussed about definitions as well as theoretical foundations of argumentation and components of an argument. They were also engaged in different argumentation contexts before the intervention in order to be familiar with various forms of argumentation. This initial process lasted one and a half hour per week in five consecutive weeks.

During the first step of the initial process, the participants were asked to define argumentation. After the participants shared their understanding of argumentation with the course professor, the course professor exposed them to various definitions of argumentation and explained the theoretical foundations of argumentation. In the second step, the professor

made various components of an argument explicit to the participants through examples. After she explained Toulmin's (1958) argumentation framework, she distributed letters including the communications between Newton and Hook about their arguments of physics to the participants. She then asked the participants to identify the components (i.e., claim, data, warrant, qualifier, and rebuttal) of each scientist's argument and to assess their plausibility and validity. The participants completed this assignment in groups of three**.** In the third step, the professor specifically explained the potential role that the argumentation could play in bringing about conceptual change in students' learning of science concepts. The participants also discussed how a teacher's and students' roles change during argumentation-based teaching. During the final step, the participants involved with different argumentation contexts.

In one of these argumentations, the course professor showed a video of wing-suit athletes. Then, she engaged them in argumentation around four problems related to the topic of dynamics. The first problem was related to the initial velocity of the athletes. The participants' arguments focused on the question of "Does starting with an initial velocity help the sportsmen fly faster?" The second problem was about the forces exerted on the sportsmen during their movements. The participants argued over whether the net force was constant or not. The participants also argued about how the athletes could determine their directions and how they could get on the ground. After the participants discussed solutions of these four problems presented to them, the professor engaged them in a whole class argumentation for each problem. One week after, the professor challenged the participants to participate in argumentation by using concept cartoons related to the topic of electromagnetic waves. This argumentation took place in a structured whole class discussion format where they wrote their ideas and reasoning in their worksheets. The participants also engaged in a whole class argumentation related to the matching theories of optics.

The argumentative intervention lasted seven weeks. Both classes engaged in argumentations but the experimental class argued through model-based teaching sequences. The subjects of the argumentations were related to the Moon and various lunar phenomena some of which were about the moon phases, seeing the same face of the Moon, daytime moon, lunar eclipse, rise and set times of the Moon, and location of the full moon.

The participants in both classes were assigned for Moon observations and Moon records prior to the intervention to recognize the phenomena discussed during the argumentations and to have some observational data. Since keeping written records allows students to test their theories and build new ones based on nature and aids them learn the content (Sadler, Haller & Garfield, 2000), the participants were asked to keep their observational records such as date, angle, time, and Moon's shape in a journal. As a result, they had five-week observational data in their journals before starting to argue about lunar phenomena.

The participants in both classes engaged in argumentations as groups first, and then whole-class discussions were carried out. The member number in each group was three. The group members remained unchanged through the intervention in order to keep the factor of group dynamics constant. Additionally, the participants were required to write their initial ideas as well as their changed ideas with their reasons into the worksheets individually during both the group work and the whole class discussion.

Boulter et al. (2001) reveal that model-building sequences begin with students expressing initial models. Then, students face challenges to their existing models in the field along with the need to negotiate new group models, and finally, they report models in their presentations and endure more challenges (Boulter, Buckley & Walkington, 2001). These sequences were provided in the modeling context of the intervention in the experimental

class. Therefore, the pre-service teachers in the experimental class were asked to construct a simple model before coming to the class to discuss moon events by using it. As a result, at the first week of the intervention, they came to the class with their initial models. Suzuki (2003) assumed two barriers for studying the Moon: to visualize the relationship among the Sun, Earth, and Moon in three dimensions, and to realize from where observers view the Moon in three dimensions. In order to remove these barriers, the pre-service teachers were asked to construct three-dimensional models at the end of the project. While the groups in the experimental class were arguing about moon events, they also discussed and decided about how their model would be better. Thus, the participants in the experimental class argued by using their models, found the strengths and weaknesses as their models were used to explain the phenomena and revised their models throughout the intervention. Examples including the differences in the control and experimental classes from the first and the third argumentations are given in Appendix. The counter claims in the argumentations were created by using pre-service physics conceptions about the Moon and lunar phenomena determined by Author (2007).

Data Collection and Analysis

Both classes were videotaped during their involvements with the argumentations. Data for this research were collected via the video recordings and the written arguments. Comparisons were made within as well as between the classes' first-week argumentation and the last-week argumentation for this research. The first-week argumentation was related to moonrise, moonset, and seeing the same face of the Moon and the last-week argumentation was about appearance of the Earth from the Moon.

The participants' scientific argumentations were analyzed by using the combinational framework constructed by the authors based on McNeill (2006)'s and Sampson (2007)'s works. Toulmin's (1958) framework was not used because accuracy in other words compatibility with scientific knowledge in the participants' arguments was assessed. The combinational framework consisted of the following argument components: claim, evident, and reasoning. The names of the components belong to McNeill. Sampson used explanation instead of claim. A scoring rubric was developed and each component was evaluated from zero to four. Claims were evaluated according to their internal consistency, completeness, and accuracy. Evidences were evaluated in terms of their relevancy with the claims, accuracy, and appropriateness. Criteria used in evaluation of reasoning were relationship between the claim and the evidence, explanation made for why the evidence supported the claim, and existence of an argument component (i.e., warrant, backing or a qualifier). Some of the criteria in the rubric were taken from McNeill's work while some of them were received from Sampson's work since none of them seemed to cover all the aspects of the arguments in the Moon argumentations. For instance, Sampson emphasized the relevancy with the claims whereas McNeill gave importance on accuracy (scientifically correctness) when an evidence came into play. On the other hand, both of them used appropriateness (gathering by using a scientific method) as a criterion for evidence. As a result, the rubric for evaluation of evidence contained all the three criteria (i.e., relevancy with the claim, accuracy, and appropriateness) (see Figure 1).

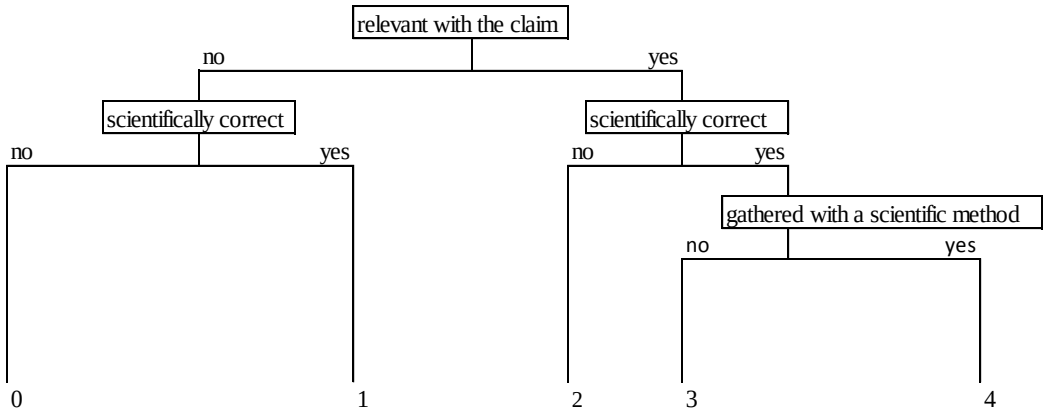

Figure 1: The rubric for evaluation of evidence.

Each participant's number of arguments that s/he produced was found. Additionally, each participant's argumentation score was calculated by summing of the points given to his/her claims, evidence, and reasoning. In order to determine quality of the argumentation, the participants' argumentation scores were summed.

The participants' argument components were coded by two researchers separately, and then compared. The agreement between the coders was 89 %. The reliability measured by Cohen's κ was 0.77. There seems to be general agreement that Cohen's κ value should be at least 0.60 or 0.70 (Wood, 2007). Consequently, the coding done for the participants' argumentation had adequate reliability. The authors re-coded the argument components that they could not have agreement on and the final coding scheme was constructed by reaching consensus.

Results and Discussion

The four groups from the experimental class were named as Group A, Group B, Group C and Group D. The four groups from the control class were named as Group E, Group F, Group G and Group H. Table 1 shows the participants' argumentation scores and the number of argument components they generated. For example, while Student 1 in Group A got 17 as argumentation score and produced six argument components during the first week, she got 31 as argumentation score and created 10 argument components at the end. Student 13 in Group E received 11 as argumentation scores and generated five argument components before the intervention while she received 16 as argumentation scores and created seven argument components after the intervention. In general, the participants did not have much difficulty in engaging argumentation and generating argument components from the beginning to the end. Their observational data might help them in this involvement. Students' observational drawing may be an important part of challenging student's argumentation.

Table 1. *The participants' argumentation scores and their numbers of argument components.*

Class	Group	1. Week				7. Week		
		Students	**Argumentation Score**	**Number of Argument Components**		**Students**	**Argumentation Score**	**Number of Argument Components**
Experimental Class	Group A	1	17	6	Group A	1	31	10
		2	15	8		2	32	11
		3	13	7		3	23	12
		Group's Total	45	21		Group's Total	96	33
	Group B	4	26	12	Group B	4	38	12
		5	10	7		5	22	7
		6	25	9		6	19	7
		Group's Total	61	28		Group's Total	79	26
	Group C	7	3	2	Group C	7	12	4
		8	24	8		8	22	6
		9	28	11		9	41	13
		Group's Total	55	22		Group's Total	75	23
	Group D	10	22	10	Group D	10	29	12
		11	23	12		11	39	14
		12	20	11		12	37	13
		Group's Total	65	33		Group's Total	105	39
		Class's Total	**226**	**104**		**Class's Total**	**355**	**121**
Control Class	Group E	13	11	5	Group E	13	16	7
		14	10	4		14	16	6
		15	6	3		15	8	3
		Group's Total	27	12		Group's Total	40	16
	Group F	16	16	8	Group F	16	25	10
		17	21	9		17	23	9
		18	9	4		18	13	5
		Group's Total	46	21		Group's Total	61	24
	Group G	19	15	6	Group G	19	25	9
		20	14	9		20	18	9
		21	9	5		21	17	7
		Group's Total	35	20		Group's Total	60	25
	Group H	22	15	8	Group H	22	20	9
		23	23	11		23	25	12
		24	18	10		24	26	11
		Group's Total	56	29		Group's Total	71	32
		Class's Total	**164**	**82**		**Class's Total**	**232**	**97**

At the first week of the intervention, the experimental class produced more arguments (104) than the control class produced (82). Likewise, the experimental class's total argumentation score (226) was higher than the control class's total score (164) at the beginning. The reason for this finding might be the experimental class's initial models which created more argumentative environment.

Findings were similar at the end. That is, the experimental class's total number of arguments (121) and argumentation score (355) were both higher than the control class's total number of arguments (97) and argumentation score (232) at the last week of the argumentative intervention. These findings indicate that in virtually all aspects of modeling,

an individual is engaged in sense-making, articulating, and persuasive acts (Berland & Reiser, 2009).

As far as the control class is concerned, their total argumentation score increased from 164 to 232 from the first week to the last week. Similarly, the number of arguments they generated in total improved from 82 to 97 from the first week to the last week. This finding is expected because research shows that both quantity of arguments and argumentation quality develop as the participants involve with argumentation more and spend more time in arguing (Author, 2012). However, the participants who constructed three-dimensional models and used their models while arguing raised their number of arguments in 16.3 % ratio while the participants in the control class raised their number of arguments in 14.1 %. Whereas the participants engaging in model-building sequence improved their quality of argumentation in 57 %, the participants arguing without models improved their quality of argumentation in 41.5 %. There is a possibility that the control class might get bored of arguing about the Moon events for seven-week long while the experimental class did not lose their interest in argumentation sequences due to their involvement with their models. The model provides an important anchor to which argumentation can be attached and made productive (Passmore & Svoboda, 2012).

According to Table 1, the highest increase occurred in Group A in terms of both argumentation score and the number of arguments they produced from the first week through the last week. The reason for this increase might be their concrete model which represented the real situations quite well. Their final model consisted of a light source representing the Sun, a globe, and a table tennis ball representing the Moon. The Moon and the Earth could rotate from west to east. The Moon could revolve around the Earth from west to east and the Moon–Earth system could revolve around the Sun with the help of the wheels. Group A connected the Moon to the Earth with a small angle.

Although Group B increased their argumentation scores, in other words the quality of their arguments, they decreased the number of arguments that they generated from the first week through the last week. Their premature models might cause this result because they could not discuss how astronaut would see the Earth from the Moon by using their models. The final model constructed by Group B was made up of a tennis ball representing the Sun, eight different phases of the Moon made from black and white play dohs and a table-tennis ball representing the Earth. These findings support the idea belongs to Garcia-Mila and Andersen (2008) that arguments are indicators for or against the fitting of a model according to its logical coherence or in comparison to empirical data. The better a model represents the focused aspects of reality, the better arguments for its appropriateness can be found (Garcia-Mila & Andersen, 2008).

Conclusions and Implication of the Study

This study was conducted to find if there is any relationship between model-based teaching and argumentation. The following conclusions can be drawn from the results: First, construction of concrete models and using them in their discussions and explanations provide learners with more quality (accurate, consistent, appropriate, and relevant) argumentations. Second, model-based teaching help learners increase the number of arguments they create.
Last, models' quality affects the number of claims, evidences and reasoning that are produced during argumentation. The closer learners' models are to the real situations, the more argument components they generate.

The conclusions present here carry implications for curriculum developers and teacher education. Model-based teaching would be introduced and disseminated through pre-

service science teacher education. This study has implication by indicating the relationship between modeling and argumentative discourse.

The second, third, fourth and fifth argumentations will be examined in the further studies. In this way, the interplay between modeling and argumentation would be established strongly. Moreover, this relationship would be discussed in terms of the content of argumentation.

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Appendix-A

First Argumentation: Seeing the Same Phase of the Moon

Robert has been observing the Moon for ten days and concluded that we always see the same face of the Moon from the Earth.

A) Please explain the reason of his conclusion by using the claims below. You can use a different claim other than the givens below.

a) The Moon does not rotate on its axis.
b) Both the Moon and the Earth rotate on their axes in the same period.
c) The Moon rotates once on its axis at the same rate it revolves once around the Earth.
d) Because Robert observed the Moon from the same location in the Earth, he made a mistake in his conclusion.
e) Because Robert observed the Moon everyday at the same time, he made a mistake in his conclusion.
f) The Moon rotates on its axis from South to North.

B) Justify your explanation (individually).

C) Use your initial model for your explanation. You may need to revise your initial model [only in the experimental class].

D) Discuss your explanation with your friends by providing your justification (as group).

E) Use your model in your explanation [only in the experimental class].

F) Finalize your group's explanation.

G) Decide on a model as a group [only in the experimental class].

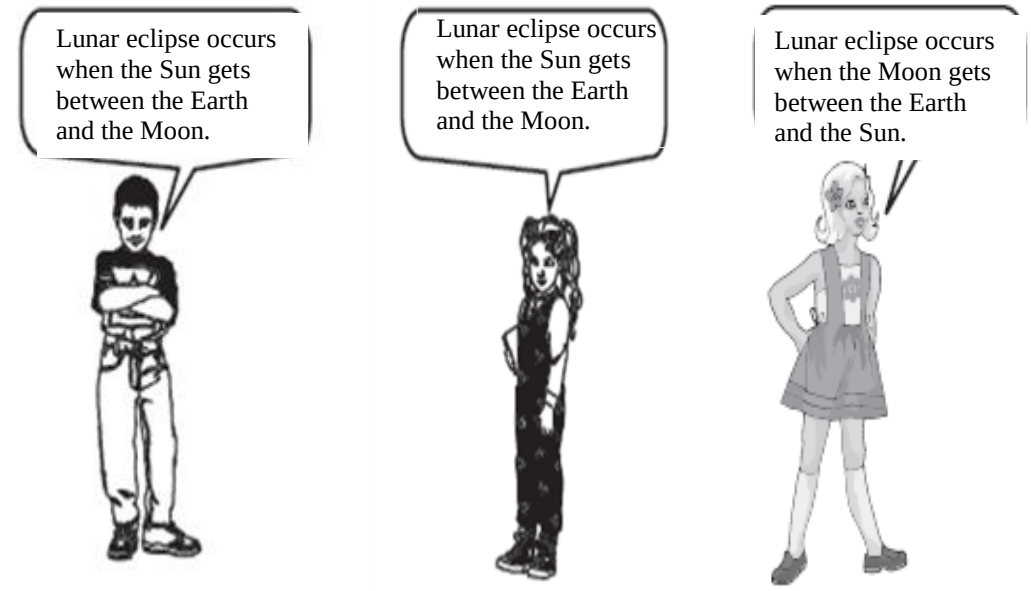
H) If your initial opinion changed, please write why your opinion changed.

I) Explain your final explanation to other groups (by using your model [only in the experimental class]) (whole class discussion).

Appendix-B

Third Argumentation: Lunar Eclipse

Three friends' thoughts about how lunar eclipse occurs are as follows:



A) Who do you think is correct about how lunar eclipse occurs? Is John, Jasmine or Daphne? Why? (individually).

B) Discuss your opinion with your friends by providing your reasons (as group).

C) Use your model in your discussion [only in the experimental class].

D) Can your model help you to explain how lunar eclipse occurs? If not, how can you revise your model [only in the experimental class]?

E) Make your group's decision.

F) If your initial opinion changed, please write why your opinion changed.

G) Explain your final decision to other groups (by using your model [only in the experimental class]) (whole class discussion).

Metamorphosis: A collaborative leadership model to promote educational change

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Abstract
A school that holds as a central belief that knowledge is individually and socially constructed by learners who are active observers of the world, active questioners, agile problem posers and critical and creative problem solvers must evolve leadership models and organizational patterns that mirror this model of genuine and meaningful learning as they promote and enhance it. Institutional change can **and must** take place at various levels. It can take place at the level of curriculum, adoption of new programs, and implementation of new strategies and methodologies. However, sustainable change must also take place at a deeper level, in which the very core of the institution's being is affected, and in which members adopt new ways of thinking, behaving, creating knowledge, **and interacting with each other,** not only as means to an end, but as the best possible ways of achieving the goals and objectives of the institution in harmony with professional goals meaningful to each member. The authors refer to this kind of change as institutional ***metamorphosis,*** a radical transformation of an institution's structure and function, preserving the institution's DNA of fundamental beliefs, values and principles. They propose that leading this kind of change demands a radically new leadership structure, which embodies (and reflects) the deepest values about the nature of teaching and learning and meaningful relationships that the institution holds. They name this model the ***Morfosis Paradigm***, explain its structure and conclude that when the model works, all levels of the organization reflect the same core principles about what meaningful relationships are that promote real learning and growth

Keywords: Change, Fractal, Leadership, Meta/Morphosis, Schools

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Introduction

A fractal is a rough or fragmented geometric space that can be split into parts, -or neighborhoods -- each of which is (at least approximately) a reduced-size copy of the whole. The property is called self-similarity.[1] Visualize the structure of a bunch of broccoli or a head of cauliflower and you'll get the idea.

The image of the fractal provides a helpful metaphor for envisioning the culture of a healthy school, in which each "neighborhood" of the institution (leadership, institutional dynamics, the teaching and learning experience, operational patterns) is "self-similar" and reflective of the other and of the whole, in that they embody and express the fundamental values and beliefs of the learning community. We are proponents of a leadership approach that sees the school as a professional learning community and that models and promotes in every "neighborhood" of the institution a harmonious, meaningful and holistic approach to teaching and learning that puts the student at the center of his/her own learning and at the center of all institutional decision-making.

A school that holds as a central belief that knowledge is individually and socially constructed by learners who are active observers of the world, active questioners, agile problem posers and critical and creative problem solvers must evolve leadership models and organizational patterns that mirror this model of genuine and meaningful learning as they promote and enhance it.

Metamorphosis: The educational experience

Every academic leader brings to an institution a philosophy of education, shaped by his/her fundamental principles and values, the foundation upon which he/she imagines, builds, articulates and implements an authentic and galvanizing vision of the future in line with the school's communally defined mission. Given the complexity and flux of the contemporary world, education is inevitably in a continuous state of change: the only unknown parameters are its pace, magnitude, and depth. As a consequence, as Elmore[2] (p. 6) accurately notes, successful school reform must grow "from the inside out," and the process of bringing change must be ***holistic.***

Institutional change can **and must** take place at various levels. It can take place at the level of curriculum, adoption of new programs, and implementation of new strategies and methodologies. However, sustainable change must also take place at a deeper level, in which the very core of the institution's being is affected, and in which members adopt new ways of thinking, behaving, creating knowledge, **and interacting with each other,** not only as means to an end, but as the best possible ways of achieving the goals and objectives of the institution in harmony with professional goals meaningful to each member.

Change at this level affects the roots of the organization, its very culture. By culture we refer to the system of adhered-to and shared values, beliefs, practices and traditions within an institution that guide or influence the behavior of its members. Simply put, culture is *"the way we do things in the institution and why we do them this way."* A school's culture informs all aspects of school life, from the execution of strategy, to the way community members accept and implement new practices in making the institutional vision a reality, to the way all individuals within the school speak to and interact with each other. Institutional culture is

[1] Mandelbrot, B.B. (1982). *The Fractal Geometry of Nature*. W.H. Freeman and Company
[2] Drago-Severson, E. Leading adult learning: Supporting adult development in our schools. Thousand Oaks, CA: Corwin/Sage Press, 2009.

tacit and experienced in varied ways. Some expressions of the institution's culture are quite visible; others lie below the surface and are somewhat difficult to unearth. A solid understanding of the culture into which change is to be introduced will provide a sound foundation for planning how to implement change. It is a fundamental first responsibility of a leader to observe and understand his/her school's culture at this deep level, to identify its weaknesses, but equally important, to understand its strengths and, to use Sara Lawrence Lightfoot's phrase, "its sources of goodness."[3]

Change that takes place at this level is sustainable across situations and not vulnerable to the passage of time, but paradoxically it embodies the promise and possibility of continuous change within it. Change of this type is **diachronic** (from the Greek, "transcending time") and transformative. The authors refer to this kind of change as institutional ***metamorphosis,*** a radical transformation of an institution's structure and function, preserving the institution's DNA of fundamental beliefs, values and principles. Here the metaphor of the butterfly emerging from its chrysalis may prove a helpful image for understanding the nature of this process.

While every leader may expect to encounter resistance to change from the many constituencies of an institution, he/she can anticipate an even stronger resistance during an institutional metamorphosis. As Shulman, et. al. point out, "while there have been changes in the economy, changes in relation to technological advances, and changes in market competition, all of which affect education, what remains the same is the resistance to change often encountered in institutions."[4] When one moves beyond economic imperatives and defines the role of a school as preparing global citizens who are prepared to serve humanity, the stakes are higher, the implications more profound and the possibilities for encountering resistance are multiplied; even when change is perceived as moving an institution towards growth and improvement. [5].

In *Embracing Change* (2006), Tony Buzan explains this pattern of resistance:

> [W]hen our familiar world becomes no longer familiar, as a result of unexpected or enforced change, it is natural to retreat initially into a negative response as a way of attempting to regain control. Sometimes we stay there – for too long. 'Familiarity and Risk Avoidance' may appear to equal 'Comfort and Security' initially, but in time may also come to equal 'No Growth and Stagnation"[6] p. 65

For some, change can be a seductive, exhilarating, rewarding process, despite any uncertainty and anxiety it may provoke. In this way, meaningful change mirrors the process of genuine learning, which involves confronting the unknown and creating new knowledge and embracing new paradigms. For others – as it can be for learners on the cusp of a new discovery -- it can be a tremendous source of anxiety, distress and overwhelming fear of the unknown.[7]

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[3] Lawrence-Lightfoot, Sara***, The Good High School,*** Basic Books, 1983.

[4] Shulman, B.H., & H. Mosak. ***Manual for Lifestyle Assessment****,* New York: Brunner-Routledge, 1998, p.

[5] Gialamas, S. and Pelonis, P (2009), "Connecting with College Education: A Holistic Approach", ***International School Journal,*** Spring/Autumn, Vol. 11(2), pp. 22-23.

[6] Buzan, Tony. ***Embracing Change,*** *BBC ACTIVE, England*

Caine, R.N. and Caine, G. (1997), 'Understanding Why Education Must Change', New Horizons for Learning.

[7] Pelonis, Peggy. ***Υπάρχω Αλλάζω (Living Changing),*** Isoropon Publications, Athens, Greece, 2006.

Metamorphosis is total transformation and a movement toward the unfamiliar and unpredictable. Resulting new ways of being may involve immersion in new rules, new conditions, and unknown territory: a process that requires diachronic and continuous learning. During genuine metamorphosis, it is not unusual for members of an institution to challenge the validity of all previous accomplishments, practices and thinking processes. Departing from the safe and the familiar often occasions feelings of loss, as "all people and all systems seek a balance, a homeostatic pattern of parts of transactions that allow people and systems to function in familiar ways."[8] It means letting go of notions such as, *"I can do it, because I have been doing it for so long and the old way of doing things has always worked well."* It means moving to an unknown and unfamiliar realm and being able to say, *"I must now learn anew and begin from the beginning," i*n order to become a productive member of the new environment. We are not unmindful that such a shift in perspective can be the source of tremendous stress and are aware that "the process of moving from one model of schooling to another that is as yet unknown is causing chaos and confusion as well as immense opportunity and new possibilities."[9]

So, a primary role of the educational leader (and also of the teacher in the classroom) is to inspire individuals in the learning community to embrace change and to mitigate their fears by creating a professional community in which risk taking is permitted and encouraged, and which allows for failure --which is seen as integral to the learning process -- building an organizational structure and ethos that supports this kind of work at every level of the school organization. We propose that nothing less than creating a model of leadership in a school that truly mirrors the beliefs about the teaching and learning process that we hold can foster the change we seek. Such an endeavour, of course, raises a whole set of questions about new models of accountability, as leadership gives over authority to match the level of responsibility it wants individuals (in the organization and in the classroom) to assume. This model of leadership also acknowledges that there may not be a place in the organization for those unwilling to assume such levels of responsibility and authority. The goal then is to exercise the kind of leadership that helps the members of the school community to experiment with these ideas and to test them in practice, to create a school that is a professional learning laboratory.

Morfosis *(Μορφωση)* Paradigm

Educating the whole person is a central tenet of the American philosophy of education. Teaching and learning take place, not only in the classroom, but during activities, assemblies, community service work, group projects, sports activities, and through the hundreds of formal and informal encounters that take place between members of a learning community each day.

The study of literature, mathematics, science, languages, the arts, history, social sciences, technology and physical education is the foundation of a well-rounded education, but a *holistic, meaningful and harmonious* approach to learning – what the Classical Greeks called *morfosis* -- takes into account *all* of the opportunities for learning that present themselves. Such an approach is also *student-centered and inquiry-based*. Teachers take into account the needs, interests, aptitudes, dreams and aspirations of students; and design

[8] Satir, V., & Bitter, J.R. (2000). The Therapist and Family Therapy: Satir's Human Validation Process Model. In A.M. Horne (Ed), ***Family Counseling and Therapy*** (3rd ed.) Itasca, IL:F.E. Peacock, pp. 62-101.

[9] Caine, R.N. and Caine, G. (1997), 'Understanding Why Education Must Change', New Horizons for Learning. Available at: http://www.newhorizons.org/trans/caine_change.htm (last accessed July 05, 2010).

invitations to learning that promote *active learning* and *independent, critical and creative thinking*, so that students will be prepared to apply their knowledge and problem-solving skills across disciplines and in new situations. Learning, viewed in this way, is a life-long process of *making sense* of one's experience of the world by making connections to what one already knows and challenging oneself and asking questions to build *new* knowledge and understanding.

This vision of holistic learning builds on the classical definition of liberal education. In a sense what we are proposing is creating a leadership design that embodies classical notions of liberal education: that puts these notions into practice as a way of organizing the leadership strands of a school. Let us suggest yet another useful metaphor: a model of leadership as a parallel series of extended Socratic dialogues among the various layers of the school community. The leader then (of the institution/of the individual school/of the department or division/of the faculty group/of the classroom/of the learning group in the classroom: here again we draw on the notion of self-similarity) takes on the Socratic role of *daring* inquiry by posing questions that demand reflection and re-evaluation and reconstruction of understandings. In this sense, leaders (like teachers in their classrooms) are truly researchers/learners, probing to understand others' understandings and creating scaffolds on which others can expand and create new knowledge and understandings.

The Morfosis Paradigm: Educational processes

"The holistic education movement does not have a single source, a predominant proponent, or a definite form of expression. Consequently, it is difficult to define holistic education explicitly. However, there are a number of values and perceptions that most schools claiming to be holistic would embrace."[10]. It has antecedents in the Classical Greek notion of the well-rounded individual, the Renaissance idea of the "universal (wo)man", Dewey's theories of experiential learning and the expansive nature of the International Baccalaureate profile of the student learner.

The Morfosis Educational paradigm, then, refers to learning that is holistic, meaningful and harmonious. Based on the tenet that the student is the at the center of the institution and aiming to educate future citizens able to cope with the multiple demands of a society in constant flux, the paradigm firstly recognizes that "the development of trusting relationships between school personnel and students will go some way toward ensuring that young people will seek the support and information that is necessary for making decisions about their school and other choices."[11] The goal of leadership in such a model is to foster agreeable partnerships for decision making, recognizing that the nature of the partnerships will change as the journey of institutional transformation matures. In such a case, organizational flexibility is a necessity, recognizing that both leaders and followers will grow and change as a consequence of the process as the leader moves from being an instigator of change to a facilitator of continuous change.

The authors recommend that a similar process of relationship building take place not only within the institution, but that the establishment of working relationships and networks between schools and other agencies within the local community should be a high priority.[12] These institutions may include colleges and universities and local community organizations.

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[10] *From* ***The Third Annual Conference on Education, Spirituality and the Whole Child*** at the Roehampton Institute, London; exploring the question, "Whose values are shaping education?" http://www.pdfio.com/k-811252.html

[11] Australian Centre for Equity through Education Australian Youth Research Centre, ***A Report on the Perspectives of Young People,*** 2001, p. 48 http://www.dest.gov.au/archive/schools/publications/2001/

[12] Australian Centre for Equity through Education Australian Youth Research Centre, ***A Report on the Perspectives of Young People,*** 2001.

Such local partnerships offer the institution the opportunity to model the values of civic responsibility it seeks to embed in its daily operations, by establishing, mentoring or motivating educational and service programs in the local community and by opening its doors to community agencies to expand opportunities for educating its students.

A ***holistic*** approach to education, then, successfully combines academic, emotional, physical, intellectual and ethical components of learning to provide students with the tools to become healthy and balanced individuals who can successfully cope with the changes that the university experience and life beyond will bring. Furthermore, a ***meaningful*** education unfolds within a framework of principles and values, and leads learners to define and achieve their personal, academic and professional goals. Learning is meaningful when it is connected to that which is most important in our lives; when it speaks to our dreams, strengths, desires and talents; when it leads us to fall *in love with life and learning;* when it helps us to discover the gifts we can offer in service to the communities to which we belong. Finally, a h***armonious*** approach to education ensures that all dimensions of the learning experience *cohere*. Principles, values and practices must be consistent and mutually reinforcing in order for the learning experience to truly promote the classical ideal of living a full life with *ethos.*

The Morfosis Paradigm: Beliefs

Adherence to a foundation of core beliefs shapes all actions and institutional decision-making. Such fundamental beliefs include:

- Holistic, meaningful and harmonious student learning necessitates a genuine partnership between the student, the school, and the family
- Institutional decisions must be made in the best interest of students first and foremost and then in the interest of all stakeholders.
- All students can succeed and acquire the skills and knowledge necessary to become life-long learners with ethos.
- Achieving excellence must be built upon each student's unique talents and abilities. (*ACS Athens School Plan*, adopted 2008)

The Morfosis Paradigm: Outcomes

The Morfosis paradigm shapes young people who will be:

creative and critical thinkers;

life-long learners;

capable of utilizing sound scientific and mathematical aptitudes;

skilful in expressing selves clearly: orally and in writing in more than one language, and through the arts;

knowledgeable of other cultures;

appreciative of the value of the study of the past;

masters of the tools of technology;

inspired to maintain physical and emotional well being;

responsible and productive citizens;

effective leaders.

(*ACS Athens Curriculum Framework Document*, developed by ACS Athens faculty, 1994)

The Morfosis Paradigm: Leadership

The ability to lead a dynamic 21st century institution, in which learning is diachronic, requires a leader well versed in Morfosis. While leadership is traditionally defined as the continuous act of influencing self and others to accomplish personal and professional as well as common goals, Morfosis leadership is a particular type of leadership comprised of two essential components: the establishment of an *Authentic Leadership Identity* (PLI) and the creation of a *Collective Leadership-Partnership Approach* (CPA).

1. Authentic Leadership Identity

To define the special characteristics of *Morphosis Leadership,* we turn again to Socrates, by way of Adler, and apply a central tenet of Socratic philosophy – that living a life of meaning begins with the quest to "know oneself." In our conception, the process of adopting this leadership model can be expressed in the following formula:

Authentic Leadership Identity = Life Experiences + Individual Characteristics+ Personal Leadership Identity

(ALI = LE + IC + PLI)

Life Experiences and Individual Characteristics

The process of understanding where we come from and how life has affected and shaped our personalities, life choices and approaches to living is important in developing and defining a leadership identity. We are not separate from our experiences, and our experiences and perceived view of the world will, to a great degree, define our leadership approach. As Adler has noted (in Mosak and Maniacci, 1999), there is a

> subjective, unarticulated set of guidelines individuals develop and use to move them through life and toward their goals. They develop through the interactions children have with their significant others, peers, and social world; through their experience of culture and community; through their biological growth and dysfunction; and, perhaps most significantly, through their perceptions and choices. It is both conscious and non-conscious, in that it exists on what current theorists call a tacit-implicit level as well as explicit, verbal level. [13] p.47

Adler refers to these developments as one's style of life, which involves myriad concepts, including:

> individuality and individual forms of creativity, ways in which we solve life's problems, our own attitudes towards life, ways in which we compensate for inferiorities, what life means to us, our entire unitary personality, our goals and means of achieving them, opinions we have of ourselves and others, ways in which we fulfil

[13] Mozak, H.H., & Maniacci, M.P., ***A Primer of Adlerian Psychology***. New York : Brunner-Routledge (Taylor & Francis Group), 1999.

> our strivings for superiority and social interest, and expressions of our entire personality. [14] p.57

We are suggesting then that knowing oneself, at this level, is a necessary first step in creating the vision of the institution and defining its philosophy of education, but it is also the fuel that will guide decision making, establish relationships and ensure that the institution is a healthy, thriving entity within the community, capable of moulding healthy individuals who will become tomorrow's leaders, global citizens with a commitment to serving humanity.

Personal Leadership Identity

Within this personality framework, we must identify clearly our principles and values, knowing very well which are absolutely non-negotiable. Once defined, these are the fixed guides that point us in the direction of achieving our vision. By principles, we refer to specific ways of behaving; a general way of conducting ourselves. Values are best described by Eyre and Eyre (1993) as "the standards of our actions and the attitudes of our hearts and minds that shape who we are, how we live, and how we treat other people." [15] (p.15)

Next, we must also clearly define our professional goals through a similar process of self-reflection and revision: where do we want life to take us, and how can we participate in this co-creative process? These are the questions a leader must continuously ask in order to revise, fine-tune and refine his/her leadership approach. Finally, as the last step in establishing a leadership identity, the leader must clearly identify his/her personal goals, adopting a holistic approach to life and leadership by ensuring that personal and professional goals align and do not conflict with or undermine one another.

Thus, rather than promote the adoption of a particular "leadership style," we suggest that in order to identify one's leadership approach the leader delves deeply into uncovering the style that has evolved from his/her personal characteristics and experiences, as well as from the meaning he/she has attributed to them. Only then can he/she understand the personal blueprint he/she has designed for approaching life and become comfortable within a leadership style that has evolved from the sum of who he/she is.

In the process of defining his/her authentic leadership identity, the leader models the process of growth and development through which he/she guides the institution he/she leads. The process becomes both and individual and an institutional imperative, and the process of becoming a school leader defined by the Morfosis paradigm gains validity because it is reflective of the process of teaching and learning that we seek to foster. Once again, the metaphor of the fractal and its central principle of self-similarity, with which this discussion began, provide us with a helpful image for understanding this approach.

2. Creating a Collective Leadership- Partnership Approach

Previously, we have discussed the centrality of developing agreeable partnerships across the institution as an important responsibility of the leader. We believe that the leader must begin this process by implementing a leadership - partnership approach with his or her leadership team, whom the leader has identified as belonging to the group of "early

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[14] Lundin, Robert W. ***Alfred Adler's. Basic Concepts and Implications***, 1989. Accelerated Development inc. Levittown, PA

[15] Eyre, Linda and Rich, ***Teaching your Children Values,*** 1993. Simon and Shuster, New York, New York, p. 15.

adapters,"[16], open to the possibilities of radical change. Establishing such a leadership partnership is itself a journey of self- and group exploration, growth and development that includes the following stages:

- Establishing a partnership based on common principles and values, and complimentary personal and professional goals in life;
- Distributing authority and decision making;
- Outlining clearly the type, magnitude and areas of authority;
- Supporting and encouraging team members in using their decision making authority;
- Reflecting continuously on the partnership in order to adjust the distribution of ownership of decision making;
- Motivating members of the leadership team to reproduce this model in their work with members of their own teams;
- Fostering the same model of collaborative leadership in the classroom to empower students to pursue the kind of learning necessary to develop the intellectual, social and moral autonomy we have defined as essential 21st century human skills.

Partnerships and collaborations ensure that there are checks and balances, that other individuals participate in the decision making process and that there is a comprehensive support system in place to ensure that the institution thrives and functions at the highest possible level of achievement. They also create a greater pool of knowledge, experience, expertise, questions, ways of knowing and approaches to problem solving that make the sum greater than the individual parts. It is crucial that all members of the leadership partnership share a belief in the institutional vision and are committed to striving towards reaching common goals.

To assure the most meaningful and far-reaching collaboration, the team members must also share, for the most part, similar principles and values. Each member must also engage in the process of identifying and clarifying his/her own personal and professional goals to ensure that these do not conflict with one another or with the institutional goals. This educational team consists of various leaders within the institution, each with clearly exhibited expertise in his/her area of operations and each with a clearly defined scope of authority, including the school's principals and directors of special programs (at ACS Athens these include Student Affairs, Learning Enhancement Programs, Athletics, Innovation and Creativity, International Baccalaureate and Advanced Placement, Finance, Human Resources and Admissions, Communications and Technology). Authority and decision-making are distributed among the team members, not necessarily equally or in a fixed way at all times. Authority and decision making, while for the most part well defined, will entail a degree of flexibility according to the changing needs of the institution, current circumstances and to individual capabilities of the team members.

The leader provides opportunities for members to exercise their authority and ensures their success by offering support and encouragement at all times. Finally, the leader and team members reflect on the partnership continuously in order to make adjustments as necessary to accommodate the range of institutional needs. As this process evolves, the role of the institutional leader also evolves. The leader who began as the chief director and instigator of change and decision-making becomes instead a mentor to the members of the team (individually and collectively) and a facilitator of their work as they engage in the process of institutional transformation.

[16] Gialamas, S. and Pelonis, P., "Connecting with College Education: A Holistic Approach", ***International School Journal***, Spring/Autumn 2009, Vol. 11(2), pp. 22-23.

Conclusion

Morfosis leadership assumes a holistic, meaningful and harmonious approach to leading (and learning). It places human beings at the core of the institution and takes care to help members identify personal and professional goals in order to align these, where possible, with the institutional vision. Morfosis leadership requires team members to work collaboratively, among themselves, as well as with the institutional leader and with their own working teams in order to ensure that the institution remains on its trajectory as defined by its mission and the leadership vision. The interaction of team members as equals when undertaking projects ensures that there are checks and balances built into the process of achieving goals as well as safeguards against making grave mistakes. Mutual support among team members ensures that energy levels remain high and performance optimal. The replication of this approach in the work of team leaders with the members of their own teams assures that the transformation penetrates all "neighborhoods" in the institution.

In the end, when the model works, all levels of the organization reflect the same core principles about what meaningful relationships are that promote real learning and growth. We can't educate future leaders if the model of leadership we are promoting is not embedded in every level of institutional practice. Thus, a working meeting of school leaders, or a faculty meeting, or a department meeting shouldn't look much different from the kind of classroom learning environment that we want to promote.

We have come full circle to the metaphor of the fractal with which we began.

Thus, Morfosis leadership is a special kind of leadership *approach*, which transforms institutional thinking and its methods of teaching and learning in dynamic ways. Leading institutions toward this type of transformation goes beyond the changes often required with the implementation of new programs or with the coming of new administrators; it underscores change at the cellular level of the institution, where every cell (individual) adopts and integrates the change, transforming the very core of the institution. Outwardly, the outcome may have little in common with the beginning phase, yet the process is one of continuous development, evolution and modification. Much like a butterfly evolving from its chrysalis -- which shares the DNA of the caterpillar it was -- the institution, grounded in fundamental principles and values, is transformed and ready to fly toward desired directions.

In this sense, metamorphosis has been accomplished.

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Pre-service Teachers' Beliefs about Using Vee Diagrams as a Report Schema in Science Education Laboratories

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Abstract
The purpose of this study is to investigate pre-service teachers' beliefs and thoughts about using Vee Diagrams or Vee Maps in science education laboratories. The study's sample consists of 54 students (42 girls and 12 boys) from the elementary school education department in the science education division of Çanakkale Onsekiz Mart University in Turkey. Data were collected from the study "Beliefs scale for the Use of Vee Diagrams of pre-service teachers" consisting of 20 Likert-type questions,and "Open-ended Questionnaire about the Use of Vee Diagram in science education laboratories," which includes 10 open-ended questions. First, the students were taught about Vee maps and diagrams for one week, and then some students volunteered for the scale, questionnaire and interview-application. Data were obtained for the quantitative and qualitative parts of the study. A-mixed methods design was used. Results indicate that pre-service teachers have positive beliefs towards the use of Vee diagrams in science education laboratories and there is a cross-relation between their beliefs and correct drawings for Vee diagrams.

Keywords: Attitudes**,** beliefs, pre-service teachers, science education laboratories, thoughts, Vee-diagrams

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Introduction

Science education has developed rapidly over the last century. Many new scientific innovations have emerged, and more are emerging every day. After the last five decades, we the educators and our students need so much subject matter knowledge instead meaningful learning. Especially at the laboratories, students need to acquire basic proficiency in the scientific process. Laboratories must be equipped with new tools in order to become better places of meaningful learning. In this respect, the factors that negatively affect students' learning must be eliminated by educators. In common new science education horizons got new tools for achievement at laboratories as concept maps and Vee diagrams.

From approximately the middle of the nineteenth century until today, science has gradually found a more secure place in school curriculums, and new ideas about science education have emerged for science teachers and educators. After some implications, the goals of science education are identified by the associations. As the literature reviews we can give main subject names as follows;

1- Basic science-oriented studies
2- Educational methods for science teaching
3- Reorganization of science education issues with the scientific development
4- Curriculum reforms over the decades
5- New horizons for today's science education and future progress
6- New and effective tools for meaningful learning in science education laboratories.

The history of science is not just a collection of books and articles waiting to be pulled off the shelf and plugged in the curriculum. Over the last 50 years, the history of science has transformed from a subject studied seriously by only a few scholars (though widely used in science teaching) into a well-established academic discipline somewhat isolated from scientific community (Brush, 1989). Consequently, we have developed a huge amount of content over the last two decades in the discipline of science education. Accordingly, science education laboratories must also provide meaningful learning of subject knowledge. After educators had explored the importance of tools for the laboratory, literature came out on the tool called "Gowin's Vee" in 1977.

Literature changes from decade to decade, but students' and teachers' beliefs and attitudes have become important for the science education literature. Pajares (1992) claimed that "the difficulty in studying teachers' beliefs has been caused by definitional problems, poor conceptualizations and differing understandings of beliefs and belief structures." His article aimed to examine the meaning that prominent researchers have given to beliefs, and how this meaning differs from that of knowledge. His research provides a definition of belief that is consistent with the best work in this area, explores the nature of belief structures as outlined by key researchers, and offers a synthesis of findings about the nature of beliefs. It has been long understood that some beliefs are more important than others to individuals, and the more important the belief is, the more difficult it is to change. It is also generally understood that if a central belief is changed, other beliefs within the person's belief system are affected. It has been argued that beliefs which are linked closely to their ego (i.e., sense of self) are more important than any others (Rokeach, 1968, pp. 3-4). Beliefs about teaching are very classic and therefore highly resistant to change. Literature about the beliefs of teacher support that both teacher attitudes and beliefs drive classroom actions (Nespor, 1987; Richardson, 1996).

Over the years, educational researchers have explored a variety of constructs pertaining to teachers in order to help improve the structure and impact of teacher education programs. Areas of study include teacher practices, teacher attitudes, teacher knowledge, and

teacher beliefs (Luft, & Roehrig, 2007). Those who have written about beliefs acknowledge their unique composition and cognitive affiliation (e.g., Fang, 1996; Fishbein & Ajzen, 1975; Pajares, 1992; Richardson, 1996). To these researchers, beliefs are clearly personal constructions, entities belonging to an individual. Yet, additional descriptions reveal varied notions of beliefs. For instance, Fishbein and Ajzen suggest that "a belief links an object to some attribute - the object of a belief may be a person, a group of people, an institution, a behavior, a policy, an event, etc. and the associated attribute may be an object, trail property, quality, characteristic, outcome or event (p. 12)." Nespor (1987), on the other hand, describes beliefs as episodic, highly personalized, and containing affective and evaluative components.

Chrobak (2001) agrees that meaningful learning must be the most important priority for teachers. His study attempts to analyze the possible contributions of metacognition and makes some progress towards the elaboration of a scientific instructional model based on theories of human learning and their application to the classroom experience. As he mentioned, numerous metacognitive tools have been developed that draw upon human learning theories; however, the effective use of these tools is not fully understood by most educators. The study's objective was to gather valid arguments confirming the benefits of the use of metacognitive tools (e.g., concept maps and the Gowin´s Vee) for the achievement of students´ meaningful learning.

Cobern (1991) described a worldview as "the foundational belief, i.e., presuppositions, about the world that support both common sense and scientific theories" (p. 7). The personal experiences of teachers help form their educational worldviews, intellectual and educational dispositions, beliefs about self in relation to others, understanding of the relationship between schooling and society, and other forms of personal, familiar and cultural understandings. Ethnic, racial, and social backgrounds, along with gender, geographic location and religious affiliations, affect how individuals learn to teach as well as their actual teaching (Richardson, 1996). If we know how to change beliefs, and it is ethically appropriate to change the beliefs of teacher candidates when and if certain conditions were met, then the next question becomes "Which beliefs do we want to teach?" For example, we could ask candidates to respond to the following beliefs on a Likert-type scale, from strongly agree to strongly disagree (Raths, 2001). So, this research used a Likert-scaled beliefs questionnaire for questions on Vee diagrams.

Theoretical science knowledge must be accomplished through daily experience, and science laboratories can be used effectively toward this purpose. Laboratory concept and design is important for science education and science lessons. Vee diagramming is well suited for the teaching of concepts in laboratories. It has been found to be beneficial to the teaching and learning process in the following ways (Novak & Gowin, 1984; Wandersee, 1990).

- Vee diagramming helps learners to do better on tests requiring problem-solving skills, and their performance increases with time as they get more experienced in using Vee diagrams (Novak & Gowin, 1984; Wandersee, 1990).
- Since laboratory courses require preparation, they require students to do research, and they also provide a standard as an experiment report (Nakiboğlu & Meriç, 2000).
- Applying these two tools (i.e., concept maps and Gowin's Vee) helps all students in their task of learning how to learn (metacognition) and overcoming the epistemological ruptures students may have (Chrobak, 2001).
- One effective way to supply meaningful learning is to use concept mapping and Vee diagrams together (Özsoy, 2004).
- V-diagram-enhanced laboratory applications were found to have more positive effects on students' achievement and retention levels when compared to teaching carried out through laboratory method (Evren & Sülün, 2010) .

- The student groups that have been taught through the use of concept maps and V-diagrams are more successful than those who have been taught by the lecture method. Furthermore, misconceptions and incomplete knowledge were not found in the group that used concept maps and V-diagrams (Bahar & Özatlı, 2010).
- Vee maps provide a framework that allows learners to conceptualize their previous knowledge as they develop meaningful learning, utilizing the Vee map to guide their thinking throughout the process of experimentation. Previous research has shown that the use of Vee maps as a formative assessment tool positively affects students' content knowledge (Thoron & Myers, 2011).

Educators have some misconceptions about teaching in laboratories. They commonly believe that students learn only after acquiring theoretical knowledge, and then can manage to understand all levels of the experiments; however, in the real classical laboratory method, students are given only experiment manuals that provide descriptions of all the steps. Students don't have to think about the process, they only repeat the standard information and replicate the process. Thus, they are unable to experience meaningful learning of the science content. As the article stated, pre-existing knowledge, in the form of naive theories, is a pervasive feature of children's early understanding of science (Pine, Messer, & St. John, 2001).

When children experience formal science knowledge, usually in the second grade, the topics that teacher choose are unfamiliar to them. Our national curriculum has primary school children study experimental and investigative science, which deals with life processes and living things, materials and their properties and physical processes. Lessons are likely to be based around the concepts that the children have previously experienced in some form in their daily lives.

Much school learning consists of rote memorization of facts with little emphasis on meaningful interpretations. For example, students are often asked to solve scientific problems and conduct laboratory experiments by rote rather than in a meaningful way (Novak, 1988, 1990).

Piaget, too, claimed that cognitive conflict would create disequilibrium and that, with maturation, misconceptions would fall by the wayside (Piaget, 1977). It seems that an important role of an elementary school teacher when teaching science is to aid students' ability to reflect upon what they know about a given topic and make available strategies that will enhance their conceptual understanding of text and science experiments (Alvarez & Risko, 2007). The literature describes both primary and preservice teachers' conclusions and beliefs about the importance of laboratory and useful tools for science education.

Thus, this study aims to gain into the beliefs about using Vee diagrams in science laboratory education. How do the diagrams affect meaningful learning and retention of knowledge? What are the students' beliefs about the usefulness of Vee diagrams in comparison to classical lab reports? Many current characterizations of the process of conceptual change focus on the conflict between two sets of knowledge, where the child's misconceptions are finally abandoned in favor of the teacher's more correct conceptualizations (Posner, Strike, Hewson & Hewson, 1982). And as the literature points out, Vee diagrams could affect concept learning and conceptualization in the teaching process.

Laboratory instruction is essential to science education (Roth, 1990). One common laboratory instruction tool is the classical written lab report. Traditional reports provide a context through the details of the title, purpose, steps required, data collected, findings, and concluding questions. The grades for traditional lab reports assess the students' ability to follow directions, collect data, and provide correct answers to questions. An evaluation tool

for new directed laboratories is needed. One teaching tool that is both teacher- and student-friendly is the Vee map or V-diagram, first developed by Gowin in 1977.

Transforming laboratories into meaningful learning environments is extremely important for science education. V-diagrams are one of the important tools in science education, as the literature review shows. The main subjects of my study are why the V-diagrams are such important tools for laboratory learning, how they integrate theoretical knowledge with laboratory observations, and how the V-diagrams prepared. One of the most important findings of cognitive/developmental research is that a student does not come to the science learning task as a 'tabula rasa' but has acquired rich knowledge about the physical world based on their everyday experiences (Vosniadou & Ionnides, 1998). So, the knowledge they have gained before the laboratory and experiments is vital for educators to know about. The Vee map is the main tool for finding out what theoretical knowledge students' already have. The V-diagram has two sides. The left side is the conceptual part, and the right side is the methodological part. The conceptual part is important before the laboratory, and the students' must research the main concepts and experience some meaningful learning before this step. Thus, the Vee map can be utilized as a useful tool for all educators in science education field.

Scientists have been discussing constructivist educational theory since the early 1980s (e.g., Gowin, 1981; Novak & Gowin, 1984; Novak, 1984, 1998, 2002). The Vee diagram was devised in the early 1980s by Cornell biology professor D.G. Gowin. He was concerned about the gap between his students' ability to undertake laboratory experiments and their awareness of what they were doing, especially in relation to the experiment's theoretical underpinning (Fox, 2007).

Passmore (1996:19) conducted a literature review about Vee diagrams (e.g., Novak, 1984, 1990a; Novak & Gowin, 1984; Barba & Rubba, 1992; Wandersee, Mintzes, & Novak, 1994; Rorh, 1990; Roth and Roychoudhury, 1993; Narode, Heiman, Lochhead, & Slomianko, 1987) and abstracted the specialties of the heuristic at the continued part. The Vee heuristic represents a constructivist tool for building knowledge structures. The Vee relates the knowledge developed, or discovered, from procedural activities in laboratory to the concepts and theoretical ideas that guide scientific inquiry. The Vee helps the learner to "see" the interplay between the structural knowledge (schemata) that they possess as they go into the laboratory, the methodological (procedural) knowledge they develop during the laboratory, and the conceptual (declarative) knowledge they produce from the investigatory processes. The Vee heuristic encourages meaningful learning as the learner constructs new cognitive structures and concept maps based on this interplay among structural, methodological, and conceptual types of knowledge. The Vee heuristic was developed by Gowin (1981) to help students understand the structure of knowledge (e.g., relational networks, hierarchies, combinations) and the process of knowledge construction. Gowin's fundamental assumption is that knowledge is not absolute, but rather depends upon the concepts, theories, and methodologies by which we view the world. To learn meaningfully, individuals must choose to relate new knowledge to relevant concepts and propositions they already know (Alvarez & Risko, 2007).

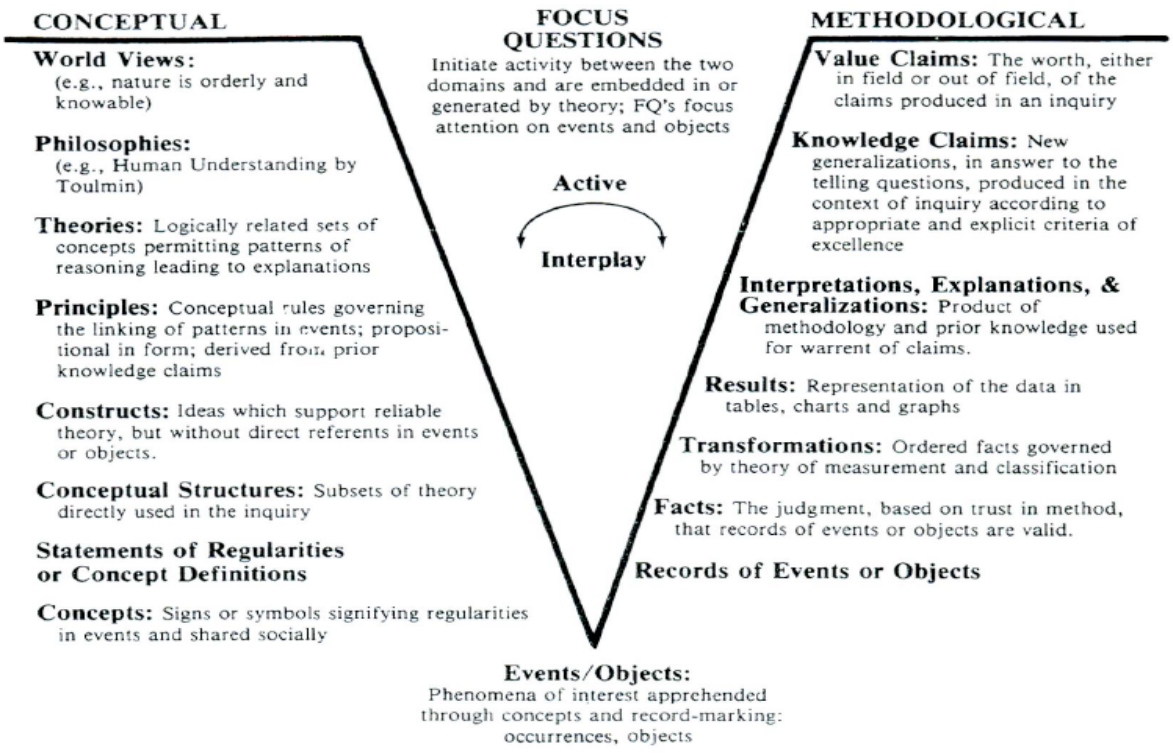
Thus, the concept of the V-diagram was developed to gain insight into the cognitive states of students during laboratory works and to eliminate the difficulties they face. Gowin built the concept of the V-diagram on five basic questions (Q5 technique) that can be used to exhibit a state or information (Evren & Sülün, 2010).

These questions are as follows (Alvarez & Risko, 2007):

1. What is the telling question? What does is it about?

2. What concepts are needed to ask the question?
3. What methods/procedures are useful in answering the question(s)?
4. What answers are produced?
5. What value do these claims have?

The purpose of these questions is to guide students in organizing the components of the V-diagram within the context of the study. The V-diagram can help with thinking or working on any study, experiment or situation. V-diagrams could be used as a beginning tool before the laboratory, and they can be a used as an exam format after the laboratory has ended. V-diagrams again can be useful to abstract lessons from a unit after the teacher has taught the lessons, and many different formats can be added with different articles from the literature. So, Gowin's Vee is essential for science education laboratories. We must again explore the V-diagram for new challenges with conceptualizations of new subject knowledge for laboratory basics in science education. Also, Vee diagrams can help prevent misconceptions in science education laboratories. Below, the format of a V-map is shown from the literature. This is the format first developed by Gowin in 1977 and later modified by Thiessen (1993), Meriç&Nakiboğlu (2000), Luft et al, (2001), and Afamasaga-Fuata (2004).



As explained by Ayranci (1986), a Vee diagram consists of three main parts. Drawing a large V is first step. Then, you place the focus question in the middle. The focus question is a bridge between the methodological part and the conceptual part. On the left is the conceptual. In the middle is the focus question, which is written before the lesson. And on the right is the methodological part, which is filled in after the lesson and experiments.

The V diagram I used in this study was constructed by analyzing various V-diagrams in the literature. The literature review on the use of V-diagrams in an article by Afamasaga-Fuata'i (2004) is given as follows. Studies have been conducted in the use of c-maps/v-diagrams as meta-cognitive assessment tools of students' conceptual understanding over time in the sciences (Novak & Cañas, 2006; Brown, 2000; Mintzes, Wandersee & Novak, 2000; Afamasaga-Fuata'i, 1999), and as organizational tools for interview data (Novak & Gowin,

1984). They have also been used as good communication tools (Freeman & Jessup, 2004) and analytical tools to unpack students'/participants' perceptions (Pittman, 2002; Swarthout, 2001) and epistemological beliefs (Chang, 1994).

My aim is to investigate the effects of V-diagrams in science education laboratories as well as the beliefs of preservice teachers on for usefulness of Vee diagrams. To determine the beliefs and thoughts of my students, open-ended questions were used. After the study, it was found that V-diagrams had different effects on the beliefs of science teacher candidates; however, more of the students found Vee map to be essential in science education laboratories. Open-ended questions gave me more detailed answers about the preservice teachers' thoughts – most of them found Vs-diagram very useful in their laboratories as a report tool for experiments.

Method

Data for the study were obtained from 54 students (42 girls and 12 boys) students enrolled in the elementary school education department in the science education division of Çanakkale Onsekiz Mart University in Turkey. The participants took General Chemistry, Physics and Biology Laboratories and were still taking science education laboratories lessons in the fall and spring semesters of 2012–2013. Some students already gained experience with Vee diagrams from their laboratory lesson in the previous year. We had used the Vee report format for some experiments before.

The beliefs scale toward the use of Vee diagrams aimed to determine students' beliefs about Vee diagrams in laboratory use. A 20-item scale was developed by the author and administered to the students at the end of the semester. The reliability of the beliefs scale was shown to be 0.750 by SPSS 21. Statements representing positive beliefs toward the Vee diagram were rated, as follows.

- 5 points were assigned to "strongly agree"
- 4 to "agree"
- 3 to "undecided"
- 2 to "disagree"
- 1 to "strongly disagree"

The data for the main concept of the study assesses beliefs about the importance of V-diagramming. For affirmative results "strongly agree" and "agree" responses and "strongly disagree" and "disagree" responses were combined together. An open-ended questionnaire compromised of 10 questions about the use of Vee diagrams was developed in advance by considering the relevant literature (Nakiboğlu, and Meriç, 2000; Ramahlape, 2004; Demirtaş, 2006; Keles,and Özsoy, 2009). In a 45 minute period students answered the following:

1. What are the differences between the classical laboratory reports and Vee diagrams in terms of planning, practice, learning, evaluating?
2. What are your duties before, at lab time and after the laboratory process, when Vee diagram format is being used?
3. What aspects of Vee diagrams are attractive in your opinion?
4. What aspects of Vee diagramming do you dislike when using it in the laboratory process?
5. What do you think about the benefits of Gowin's Vee?
6. Would you chose to use Vee diagrams in schools, if you were given a chance? Why?

7. Did you gain any new skills during the new laboratory process? Do you think Vee maps your classmates' to gain new skills?
8. Do you think that Vee diagrams contribute to meaningful learning in science laboratories?
9. What difficulties do you encounter when preparing the Gowin's Vee?
10. What properties of Vee diagrams help you to understand the experiments and their subject matter?

My research was performed with my students in our science education laboratory lessons. The participants attended laboratory, for 16 weeks, and a total of 64 lessons. In the first week, I divided the students into groups of three. The pre-service teachers learned about Vee maps and how to bring about appropriate Vee's from the literature and by giving presentations to the group. After these presentations, the groups were provided theoretical knowledge, materials; and gathered data and were asked to prepare an example Vee diagram containing information about the experiment.

In the second week, pre-service teachers presented the Vee diagrams that they had prepared to their classmates. Groups the deficiencies in each others' studies. After presentations, groups were shown an ideal Vee diagram of the experiment, which had been prepared by the researcher and were asked to compare it with their diagrams and eradicate any deficiencies. In this study, I chose the Vee diagram format that, was modified by Afamasaga-Fuata'i (1998).

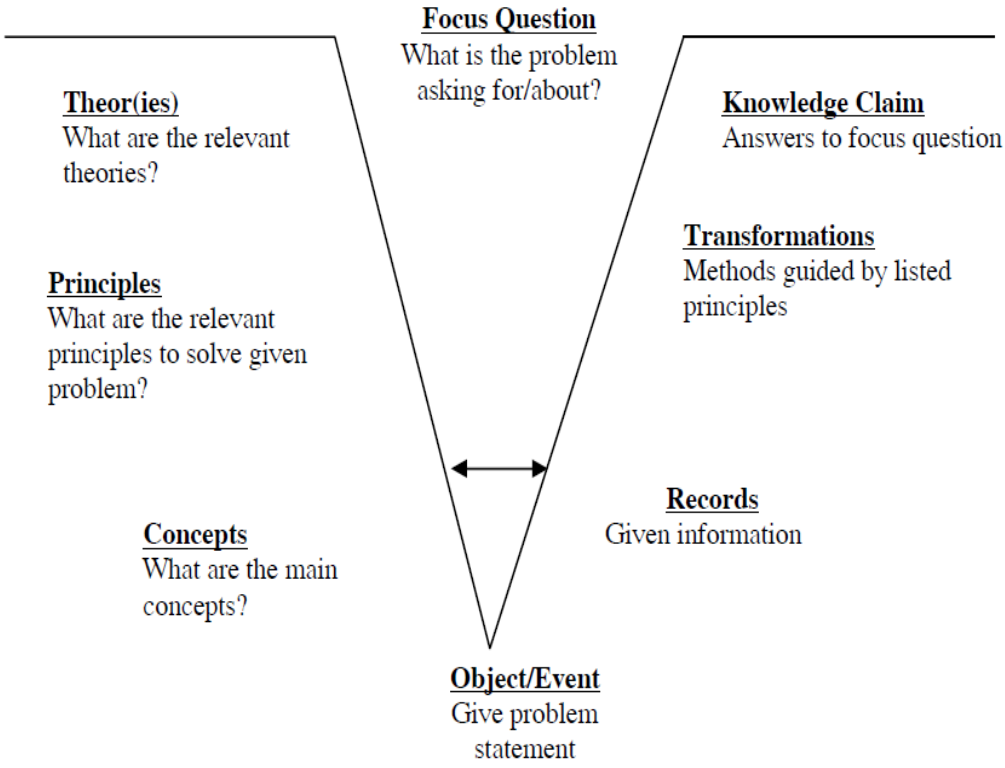


Figure 1 Afamasaga-Fuata'i (2004) modified from Novak & Gowin, 1984).

Every week in the lessons pre-service teachers studied subject information about the experiments. Before coming to the lab they used the research to complete first part of the V-diagram first part (i.e the conceptual part). To complete that side, they chose a personalized focus question. After making a concept list that includes vocabulary relevant to the questions, the conceptual part is finished. In the objects/events section, participants designed a procedure

to examine the focus question. Afterwards, concepts and objects/events, theories and principles were concluded. Thus, they all had an extensive knowledge about the topic before the laboratory. In the laboratory, participants conducted the experiments with their group mates. They planned the experiments by themselves. I acted as a guide throughout the semester and at the lessons. After completing the experiment, my students recorded the data at the section and prepared charts, graphs, and tables in the proper field. Participants completed the Vee diagram by reporting their conclusions and answers to their focus questions in the knowledge claim section. I graded the V-diagrams for their motivation to other weeks and different experiments.

Analysis

After the statistical analysis the frequency distribution of students' responses to the beliefs' scale was explored and interpreted. Scores were analyzed using SPSS 21. Also the answers were categorized based on key ideas that had been extracted from the questionnaire.

While analyzing qualitative and quantitative data a mixed-method design was used. The mixed method design; is a term that is applied when research strategies are used at normally described as a part of that design. For instance, in quantitative inquiry, it may be the incorporation of an observational component (a non-numerical fieldwork) or supplementary open-ended questions at the end of a Likert scale; in qualitative inquiry it may involve the incorporation of strategies from ethnography to add a cultural dimension or the addition of quantitative measures. (Tashakkori, A. and Teddlie, C., 2010).

Categories were determined for 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 in order to a list of concepts from 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, and 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.

Table 1: Examples of pre-service teachers' answers to the questions for open - ended questionnaire categories formed and code samples

Question	Question / Included subject	Category / Code	Frequency
1	Planning importance	1/1	18
	Practice importance	1/2	20
	Learning importance	1/3	12
	Evaluating importance	1/4	4
2	Research	2/1	15
	Data collection	2/2	15
	Taking responsibility	2/3	14
	Documentation of all process	2/4	10
3	V schema format	3/1	7
	Focus question effectiveness	3/2	32
	Methodological part preparation	3/3	15
4	Preparing time	4/1	20
	Requires most attention	4/2	24
	Boring	4/3	10
5	Wide perspective vision to process	5/1	19

	Organized and planned documentation Seeking all the process at one diagram	5/2 5/3	15 20
6	Exactly yes Undecided No	6/1 6/2 6/3	42 6 6
7	Comprehension facility New thinking skills Communication skills Research experience	7/1 7/2 7/3 7/4	27 8 3 16
8	Understanding the experiment and subject effective Meaningful learning experience Understand all process fluently	8/1 8/2 8/3	17 23 14
9	Takes a lot of time Not proper for simple experiments Limitation of one page	9/1 9/2 9/3	33 10 11
10	Understanding Subject and experiment after the process Contribution to meaningful learning and research skills An alternative way for science education laboratories abstractions	10/1 10/2 10/3	11 31 12

The data collected from the application is a document consist of 162 pages. The data content analyzed as codes and frequencies. 33 different codes determined and the codes generally compatible with the quantitative data obtained from scale. Consequently ; the categories and codes abstracted as three general group names; as **Vee supporters**, **undecided group** and **non believers group** for the results.

Results

First, using of SPSS 21, the reliability of the beliefs scale was shown as to be 0.750. Total scores obtained from the beliefs scale were determined, and it was concluded that the highest total points were 94, which is the most positive indicator. The minimum point on the scale was 44. So, the indicator of the most negative attitude was 44 for this study. All of the "undecided" replies were rated, and we obtained the neutral situation point of 60. In other words, a score over 60 represents a positive attitude and under 60 represents a negative attitude. Therefore, 42 pre-service teachers (77.7%) who had more than 60 points showed a positive attitude, while 12 pre-service teachers (22.3%) showed a negative attitude toward using Vee diagrams in science education laboratories. After examining attitudes, I assessed the perceptions of pre-service science teachers about the use of Vee diagram in the laboratory by questionnaire. A total of 18 students had received laboratory lessons from the researcher in the previous semester, so they were familiar with Vee diagrams. The other 36 students had never used Vee diagrams before this study.

According to t test results comparing groups by gender in regard to the attitude scores after the application, there was no statistically significant difference between the two groups ($p > .05$). So preparing Vee diagrams for science education laboratory doesn't effected by the gender

Gender	N	M	SD	DF	t	p
Girl	42	78,76	13,066	52	4,999	0,469
Boy	12	57,33	13,20			

According to t test results to comparing groups by Vee diagramming experience, there was a statistically significant difference between the two groups (p > .05). As mentioned by this result experience of Vee drawing gives confidence to students for new applications.

Vee map experience	N	M	SD	DF	T	p
Experienced	36	83,02	6,85	52	10,199	,000
Not experienced	18	55,94	12,73			

Teacher candidates' answers can be qualitatively analyzed as follows. The responses vary among three different categories. First, the questionnaire answers were categorized. Those who had high scores on the attitude scale were considered to be VEE supporters (34 students, 63%). Their attitude scores were higher than the arithmetical mean of the total scores (73,96-74) and between 74 and 94. The students who got scores between 60 and 74 were categorized as the undecided group (8 students, 14.81-15%). And the last group did not believe in the use of Vee diagrams, rating below the score of 60 (12 students, 22%).

	VEE supporters	Undecided group	Non believers
Points	74 – 94	60 – 74	44 – 60
Frequency	34	8	12
Percentage / %	63	15	22

The replies of pre-service teachers who answered the open-ended questions were similar with some of the attitude scale sentences. Some views determined from pre-service teachers answers are given below;

Beliefs chosen by **Vee supporters group** were as follows;

- Vee diagrams really help to abstract the knowledge before and after the laboratory period.
- Vee diagrams help us to test our subject matter knowledge and gain meaningful knowledge till the conceptualization of the tool.
- I think this new tool drives pre-service students to research new knowledge, and serves as an experiment report to help construct new information.
- V-diagrams provide a new and improved way for laboratory applications, and have positive effects on the students' achievement as an alternative to classical lab reports.
- V-diagrams are a useful tool as a new exam format for science education laboratories, such as the quizzes that we had after the laboratories each week.
- I believe that I gained a new ability to retain knowledge of the theoretical details as during the laboratory work and after the process.
- Vee diagrams helped us to link new concepts while learning during the experiment process.
- V-diagrams or maps really taught me the basic concepts for science education. I realized that, over course of the semester, I had developed many misconceptions about the theoretical knowledge involved in the experiments.
- Vee maps are new formatted schemas for new experiment applications. In the classical format, we only abstract the experiments applications list and write down the basic results.

- I think that I will use the V-diagram when I apply experiments in my school because the tool really provides all the details for the students before, during and after the application. While abstracting all of the knowledge, it allows you to write down the procedure and results in just one page in some instances.

Beliefs of **Undecided group** were a mixture of positive and negative ideas;

- Over the course of the semester, I realized that classical lab reports are very easy, but I think it's enough for short experiments. long experiments, however, may require Vee maps.
- The V-diagramming method is a new schema for science education literature, so we can't be sure that it is a useful tool for our standard laboratories process.
- Observations cannot be listed in the V-diagram, but a lot of details can; this may confuses the students as I lived till semester for the experiments.
- I am really not sure that abstracted format of the Vee could list enough information for some experiments' subject knowledge such as biology-oriented experiments or maybe chemistry, for example.

The beliefs of the **Non-believers group** contained some negative ideas, as follows:

- I couldn't mention basic differences with this tool. Some of the parts are like the classical reports, but some parts are new. I'm not sure that it is useful.
- V-diagramming is a new method. It must abstract the process. But I think lab reports must be long documents for science education field laboratories.
- The classical report method has been used for a long time, so it is so hard to change. I think the classical report is good for experimental documents.
- I think Vee diagramming is difficult in the preparation stage, and time-consuming for me and my group. At the end, some results or knowledge couldn't be mentioned in any parts of the diagram.

Conclusion

This study was conducted to determine pre-service science teachers' attitudes and beliefs toward the usage of Vee diagrams in science education laboratories at the third class. Novice learners had General Chemistry, Physics and Biology labs in the first and second years. My study aimed to contribute to the literature on Gowin's Vee as an application for science education laboratories in science teacher education programs. The results show that most students have a positive attitude towards the Vee tool as an alternative to classical reports. Some students show negative attitude, but their Vee schemas and diagrams are not adequate for the application. Furthermore, the teacher candidates in this category were also unable to construct good reports. The students mention that it Vee diagrams are difficult to prepare and take a lot of time. Most teacher candidates had never used Vee diagrams before prior to this semester; in their other laboratory lessons, they had only used classical report formats. Their negative attitudes may have been influenced by this factor. Some students had experience in using Vee maps, because we had a laboratory lesson last year together using the Vee map schema for reports in some experiments. They were able to draw appropriate examples.

The most important results of my study have some implications for V-diagramming literature.

- For example, some students thought that this new tool leads to research everyone for the new knowledge and provides a useful experiment report to construct new information on new subjects.
- In contrast, some students' found the Vee format difficult for short experiments and basic subject applications.
- Most students who had a positive attitude mentioned that V-diagramming had more benefits than classic reports.
- V-diagramming helps students to abstract the procedure, research the information they need, and draw conclusions about the focus question.
- Consequently, knowledge claims provide to repeat all our information before the experimental process. In the transformations part, we can learn new ideas and concepts with both their relations. Some of these sentences match with the literature.

These important sentences or beliefs emphasize the importance of the current study. Instead of making an important contribution to the literature, my study supports the findings of the benefits of Vee diagramming, as shown below:

- Vee diagrams are informative, useful and facilitative for the students' conceptual understanding (Ramahlape, 2004);
- The Vee tool is helpful for conceptual learning and understanding (Nakiboğlu & Meriç, 2000);
- Vee diagrams led students to conduct research before the laboratory application (Roth & Browen, 1993; Atılboz & Yakışan, 2003); and
- V-diagrams could be used as pedagogical tools to organize and order teaching and learning activities using the results from the content (Afamasaga-Fuata'i & Cambridege, 2007).

Consequently, the findings of the research point to the following conclusions. The use of Vee diagrams, Vee maps or Gowin's Vee in science education laboratories will provide benefits to students by helping them to learn the content meaningfully; using this tool, students, novice teachers and teacher candidates can overcome the problems of rote learning. Vee diagrams organize theoretical knowledge and the experimental application process in a correlated way. Vee diagrams should be suggested to educators in science education laboratories lessons in universities and elementary education departments. In Turkey, we have science education laboratories lessons called 'Science application', 'Science teaching' and 'Science education' for the preschool level; in Classroom Teacher, Science Teacher and Preschool Teacher education departments. The usage of Vee diagrams must be expanded for these lessons, especially at the university level, to contribute to the science education literature.

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The Affective Domain of Assessment in Colleges and Universities: Issues and Implications

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Abstract
A comprehensive Assessment is indispensable for effective guidance, appropriate placement of students and relevant educational development. This paper attempts an examination of issues concerning the affective domain of assessment as an integral part of general assessment and draws out the implications of these issues. The paper also discusses the significance and the need for consistent affective assessment and the modality of using the data obtained through affective assessment to provide holistic educational experience to students. Among other things, it is suggested that students and educators be made to realize the value of affective attributes. To do this successfully, these attributes are to be clearly and specifically developed, taught and assessed in their own rights as opposed to their being simply integrated in cognitive tasks.

Keywords: Assessment, cognitive, affective, administrators, educators, learners

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Introduction

Education is the strategic development of human capital and it contributes in no small measure to development at national and international levels. Education however is useful only when the objectives and content of the enterprise are tailored towards the needs of the people to be served. Furthermore, in order to guarantee the usefulness of education, it has to be comprehensive in nature and it must have integrated into it, a holistic assessment measure.(Idowu&Esere 2009). One of the cardinal responsibilities of a school is the certification of individual students registered therein. This certification responsibility makes assessment indispensable. Ogunleye (2002)describes assessment as a means whereby the teacher obtains information about knowledge gains, behavioral changes and other aspects of the development of learners.It was at the 1948 conference of the American Psychological Association that a call was made to develop educational taxonomies or classification schemes of the learning domains (Bloom, Engelhart,Furst, Hill, &Krathwohl, 1956). These classification systems were intended to function as communication tools and standardized structures by which educators could better establish curricula and initiate research on learning (Menix, 1996). The first and most influential of these taxonomies covered the cognitive domain and was introduced in 1956. Over the intervening years, Bloom's Taxonomy for the cognitive domain (Bloom et al 1956) has been the subject of much research. To this day, it continues to exert significant influence on curricular development and assessment practices worldwide.

Additional taxonomies were developed in the psychomotor and affective domains of learning in subsequent years but their international acceptance and usage have been relatively low. Comparatively few professors are aware of or focus upon the affective domain of learning taxonomy (Krathwohl, Bloom, &Masia, 1964). Similarly, Oakland (1997) observed that during its 110-year history, Academic and Research Psychologists have devoted a lot of attention to cognitive qualities. Emphasis on empirical research which explores and defines theories and concepts of intelligence, achievement, and cognitive aspects of neuropsychology generally have out-weighted similar activities focusing on affective qualities. In the same vein, Saxon and Calderwood (2008) observe that practically all assessment done in the United States colleges and universities is cognitive. Popham (2011) also observes that for centuries, educators have known about the three domains of learner behavior; the cognitive, affective, and psychomotor domains. Citing Unites State of America as an example, Popham highlights the fact that as part of a heavy emphasis on accountability and reform, attention has been on the cognitive domain almost exclusively. According to him, most classroom teachers do not devote their attention directly to their students' affective constructs, and even greater number of teachers fails to assess them. Bad as the situation is in the United States concerning the usage of the affective taxonomy of learning, the situation does not fair better in developing countries as one would expect. For example, a study conducted by Idowu and Esere on assessment in Nigerian Schools in 2009 shows among other things that 95% of the respondents do not factor affective and psychomotor measure into the overall performance of their students while 10% of the respondents claimed ignorance and incompetence in the use of non-test devices.

Despite the fact that educational evaluators (Iyewarun, 1986; Okon, 1986; Miller, Frank, Franks & Getto, 1989; Obe, 1986) have prescribed a departure from this trend of neglecting affective assessment to make room for a comprehensive picture of the development of learners in the school system, no significant change has taken place even in the 21st century. This is attested to by many authors who continue to deplore the tendency for affective outcomes to carry little or no weight in summative assessment(see for example Howe, 2003, Maas Weigert, 2006, and Popham 2011) As a step towards ensuring that the benefits of affective taxonomy of learning and affective assessment do not continue to elude learners and also that the system of incomplete educational experience does not continue

unabated, attempt is made in this paper to discuss the implications of continued downplay of the affective taxonomy of learning and affective assessment. One opines that this will further sensitize all and sundry to the havoc that is being done by the continued aversion to affective domain of assessment and the need to put in place a very urgent remedy. In setting the background therefore, attempt is also made to clarify the purpose of affective education and its origin, highlight the taxonomy of affective qualities, examine the issues inherent in affective domain of learning taxonomy and affective Assessment. With these in the background, effort is made in discussing the modalities of making the best use of affective taxonomy of learning and affective assessment.

Concept Clarification

Birbeck and Andre (2009) rightly point out that the affective domain is a vague concept that could relate to at least three different aspects of teaching and learning. According to them, the affective domain firstly could be about the teacher's approach to teaching in terms of philosophy and what this communicates to the student. In this case, the affective domain relates to the way in which the teacher interacts with students to establish a relationship. Secondly, the affective domain could be about stirring up the affective attributes of students as a deliberate form of engagement. The essence of such a method could be to show disapproval or annoyance at an act of injustice and by so doing, some students may be encouraged to take a greater level of participation. With the first and second perspective of affective domain, the onus is on the teacher to establish the learning environment. It is expected that students will respond positively or otherwise. However, they do not initiate. Thirdly, the affective domain could be about learners being engaged with the development and understanding of their own motivations, attitudes, values and feelings with respect to behavior as a citizen and a professional. The discussion in this paper is based on the third perspective.

The Source of Affective Learning

Affective learning characterizes the emotional area of learning reflected by beliefs, values, interests, and behaviors of learners (Krathwohl et al, 1964; Smith & Ragan, 1999; Gronlund & Brookhart, 2009). Affective learning is concerned with how learners feel while they are learning, as well as with how learning experiences are internalized so they can guide the learner's attitudes, opinions, and behavior in the future (Miller 2005).

There are two main schools of thought concerning affective education. The first school of thought maintains that the content of affect (values, morals and ethics) is found in sources external to human experience. This idea has its source in the philosophy of Realism and Idealism as well as in Religion. According to this school of thought, beliefs; values are to be found in divine inspiration and the wisdom of the elders over the years. For example individuals of the Christian persuasion accepts God's commandment by faith, reason being that the source is seen as supernatural and that God is sovereign. Other injunctions that have been in operation for years are also accepted based on culture as lay down by the elders. In the field of education therefore, when beliefs are identified, it is expected that these beliefs be inculcated in the learners and the learners' be made to comply. This is an absolutist affective education and it works through indoctrination. The second school of thought maintains that the content of affect should be derived mainly from the analysis of human experience. This view has its source in the philosophy of Pragmatism enunciated by Dewey (1939). According to this school of thought, values are developed as the individual or group goes througha process in stages. These stages as put forward by Dewey for the individual or group are:

1. Interact with the environment

2. Reflective thinking on the meaning of the interaction

3. Based on the reflective thought, formulate values or beliefs

4. Based on reflective thinking, apply the formulated values to new situations

As reflective thinking continues concerning the new situation, the original values or beliefs will either be reconfirmed or changed. This school of thought does not envision a society of entirely autonomous values (Raths, 1975) but emphasis the capacity of human beings to engage in meaningful reflective thinking. Within the context of the school system this view leads to developmental affective education. What the school does therefore when operating on the basis of this view is to guide learners to come up with values or beliefs through reflective thinking and also encourage learners to embrace values that are fundamental such as the right to human dignity. This conception of affective education has a lot in common with telenomic position put forward by Phenix (1969) with his emphasis being on the need for schools to promote a lifelong enquiry for values through critical thinking. Similarly, Raths values education (1978) and Kohlberg's moral education (1978) can be traced to this conception of affective education.

Apart from the absolutist and the Pragmatic views, another conception that one cannot ignore in any discussion of affective education has to do with the psychological theories of Carl Rogers, Abraham Maslow, Earl Kelley and Arthur Combs (1962). These emphasize the cardinal role of personality and perception in learning. They recommend that priority attention be given to self concept, interpersonal relations and the discovery of personal meaning in the curriculum. Within the school system, this view is generally known as humanistic education. The work of Raths (1972) on emotional needs and that of Combs (1972) on value development reveals a similarity between developmental education and humanistic education. A major difference however is that Dewey and the members of his school of thought place emphasis on social development whereas the humanistic psychologist place emphasis on personal growth. Developmental affective education therefore is based on the works of John Dewey and that of the humanistic psychologist.

Taxonomy of Affective Qualities

Krathwohl et al (1964) proposed a five level taxonomy of the affective domains arranged in a hierarchy according to complexity.

The first level of the affective taxonomy is referred to as "receiving". At this level, the learner is aware of the topic, stimuli, event or issue and is willing and ready to learn about it or respond to it. It follows therefore that in order to progress in the taxonomy; a learner must be aware of and attend to the issue or event in question. Where the learner fails to receive information, progress on affective hierarchy becomes stocked. A common example of this level of affective learning is class attendance and concentration during lectures at school. During the process of "receiving" the learner comes across new ideas and makes effort to understand them.

The Second level, "responding" ranges from compliance by voluntary response to having a sense of satisfaction in doing what is required. For example, a learner obeys class rules and regulations, complies with teacher's instructions and participates in class activities as required.

The third level is referred to as "Valuing". At this level the learner voluntarily manifests behaviors that are consistent with certain beliefs. For example, when a learner demonstrates kind gestures towards others, comes punctually to school, does and submits assignment as and when due. Students demonstrate "valuing" when they consistently prioritize time effectively to meet academic obligations and when they, for example, practice

the safe handling of equipment and materials in a laboratory science course throughout a semester (Gronlund & Brookhart, 2009).

At the fourth level of the taxonomy; "Organization" the learner organizes a set of values into a value system (i.e. the learners general set of values) that are used to respond to diverse situations. Gronlund (1991) confirms the increasing complexity of this form of learning in his observation that: "as affective outcomes move from simple to complex, they become increasingly internalized and integrated with behaviors……. to form complex value systems and behavior patterns" (p.55)

The fifth level and which is the highest level in the hierarchy of affective taxonomy is "characterization by a value or value set" and this occurs when a student's behavior is consistent and predictable as if it has been adopted as a life style (Gronlund, 1991, p. 34). In other words, the student has internalized the values to the extent that they characterize him or her.

Affective Learning & Assessment: The Issues and Their Implications.

Though in existence for long, affective learning taxonomy has neither been recognized nor used in curriculum development to the same degree as the cognitive taxonomy. There are numerous factors that contribute to higher education's collective aversion to the affective domain (Pierre & Oughton, 2007). A school of thought opines that affective learning is a byproduct of cognitive learning and for this reason it is argued that affective learning outcomes do not need to be indicated, taught, or assessed separately. Furthermore it is maintained that there are in fact, close parallels between Bloom's taxonomy for the cognitive domain and Krathwohl's taxonomy for the affective domain (Smith & Regan, 1999) and because of this, special attention should not be give to the affective domain. Further challenges in affective learning and assessment is said to arise from difficulties in precisely stating desired affective learning outcomes because they involve opinions, beliefs, and attitudes (Bloom et al 1956; Smith and Regan, 1999).

Yet another school of thought that seeks to explain the lack of attention given to the affective domain maintains that the cognitive domain is intuitive in that it seems to make sense at the University to concentrate on the body of knowledge, makes sense for students to develop problem solving skills and to critically question science and society and makes sense to have graduates who have the capacity to develop creative response to difficult and complex problems (Krathwohl et al, 1964; Pierre & Oughton, 2007). It is also argued that the cognitive domain is relatively easy to assess and to apply sound assessment practices like moderation to ensure some level of objectivity and fairness (Pierre & Oughton, 2007). On the other hand the affective domain is said to be contentious raising all manner of fundamental challenges and questions that go to the very heart of the purpose of education at a tertiary level and asks hard questions about social and cultural power in education, such as:

- How does one judge intrinsic qualities such as values, motivation, feelings and attitudes?
- Is higher education an appropriate place to develop qualities such as hard work or having a goal?
- If so how should they be assessed?
- What will be used as a standard upon which one judges?
- How does one ensure any sense of validity and transparency?

- How can one tell if students are authentically displaying these intrinsic traits and not just "playing the game"? (Birbeck.&Andre 2009)

Again, and in a sense most pervasively, affective learning in schools has suffered from neglect, wherein faculty have failed to identify and describe their legitimate aims for students' affective learning (Colby & Sullivan, 2009; Pierre & Oughton, 2007; Shephard, 2008). Shephard further submits that some individuals avoid specifying student affective learning outcomes because they are afraid of being accused of indoctrination or brainwashing.

Plausible as these arguments may be or seem to be, one opines that they do not justify the apathy concerning affective domain of assessment and affective education in schools. According to Stiggins (2005, p.199 – 200), "motivation and desire represents the very foundation of learning. If students do not want to learn, there will be no learning. Desire and motivation are not academic achievement characteristics, they are affective characteristics". This being the case, the only avenue of working on learners' desire and motivation has long remained unattended to. Nolting (2007) points out that performance in mathematics has almost as much to do with students' attitudes and beliefs as it has to do with their mathematical knowledge. Mathematics and the sciences have for many years been seen as dreaded areas by many students and the situation is still the same. More often than not, the blame is on the "innocent" students while not many are ready to admit the fact that the curriculum is lopsided and the students' negative attitude could also be due to this. The lack of necessary attention being given to "desire and motivation" in schools through the promotion and assessment of affective characteristics has cause a lot of problems especially in the field of science and mathematics. With the increasing import of technology in the 21st century, the need to give affective characteristics and their assessment the rightful place can no longer be over emphasized.

At all levels of the school system there is the possibility for the level of interest in learning and the desire to excel academically to diminish over time. While this is a common occurrence, a good number of learners do drop out of school for inability to see the relevance in the school curriculum. Among those who succeeded in pulling through school programs some do end up totally disengaged from the educational process for the same reason. This is also an attendant effect of the absence of regular teaching and assessing of affective characteristics embedded in the curriculum. Such teaching and assessment if put in place would enable educators to keep regular watch on students' beliefs concerning their ability to meet educational objectives and standards as well as the students' attitudes concerning the relevance and importance of the content they are learning. Affective construct therefore puts the educator in a good position to identify on time students with the likelihood of dropping out of the system. Since not much use is being made of the affective construct, a lot of casualties continued to be recorded by way of learners dropping out of school or losing interest after completing a segment of the educational system successfully.

Popham, (2011, p.233) argues that the reason such affective variables such as students' attitudes, interest and values are important is because they typically influence future behavior. He highlights further that it is necessary to promote positive attitudes towards learning because students who have positive attitudes towards learning today will be inclined to pursue learning in the future. It follows therefore that where the machinery through which the affective status of learners can be assessed are not put in place it becomes practically impossible to know how students are predisposed to behave in subsequent years. This is the prevailing scenario within the school system and the implication is that those who would have been helped while still within the system lost the opportunity because there was no way of knowing their affective status which would have paved the way for such students to benefit from affective education.

Ideally, education is to prepare the learner for citizenship and citizenship precludes an individual who is not jut able to read, write, carry out mathematical operations, think critically, be an effective employee or employer but also possess a general sense of social responsibility. However, for many years now, looking at those graduating from school, a learner with pass marks in his or her subjects (courses/program of study) receives a certificate at the end of the course no matter how "unruly" he or she may be without any indication of the affective status. This is all because the affective traits do not have any place in students' certification. Apart from the certificate that shows academic attainment institutions do not keep nor issue any document that shows affective characteristics of students' and such document with institutional authentication is not required in the job market either. To some extent, the "moral problems" in the society can be traced to this. Relatively, learning is on the increase, more people are having access to education and the whole process is getting increasingly modernized by the day but paradoxically, morality is also fast disappearing and the society is increasingly becoming unsafe. Little wonder that cases of leaders of nations who are looting state treasuries and absconding are on the increase. Sit down tight leaders of nations are also multiplying. These are some of the cumulative effects of educational system that is devoid of attention to affective education and assessment. Reasons being that it is fraught with difficulties, therefore the exclusive focus on the cognitive domain.

It is not uncommon in some societies for learners to go to school with pistols and colleagues and educators have been known to be victims of gun violence even at school. Similarly in some societies, suicide, rape, bullying, drugs and all kinds of atrocities are common features in many schools. For example, while commenting on the situation in the United States of America, Nooman & Vavra (2007) submit that crime in schools and colleges is one of the most troublesome social problems in the nation. Dicken (2007) also highlights the fact that the shootings at the University of Memphis and Delaware Sate, along with the arrests of gunmen on the campuses of the University of Wisconsin-Madison and at St John's University have reinforced the belief among all constituents involved in campus safety that more needs to be done to ensure the safety of all who live and work in these environments. In addition, Ghoneem(2012) submits that violence is a social phenomenon that cannot be accepted anywhere especially in Islamic societies; such as the Jordanian society. He however laments that violence has become a widespread phenomenon at universities. According to him, the concern about violence in universities escalated when in April 2010, a student at the Al Balqa Applied University was murdered by a fellow student at the university gate. In the same vein, Rotimi (2005) reports that cultism has become a major social problem both within and outside the Nigerian universities. He explains further that the emergence of secret cultism has been characterized by some bizarre and violent activities which include, physical torture as a means of initiating new members, maiming and killing of rival cult members and elimination of real and perceived enemies. With incessant secret cult activities, Rotimi submits that the centers of learning in Nigeria have become centers of violence. Furthermore, a study carried out by Atwoli et al (2011) among students in colleges and university campuses within Eldoret Municipality in Western Kenya shows that the prevalence of substance is high and causes significant physical and psychosocial problems in this population. Benneth et al (2007) also confirm the fact that since early 1990's there have been a number of important studies on the nature and practice of sexual harassment and sexual violence in higher education institutions in South Africa and neighboring countries. According to them, the picture painted by the researchers is one in which many forms of sexual abusive interactions could be found simultaneously within higher education institutions. A memory study by Chege (2006b) in which diary entries show Kenyan female university students documenting memories of sexual violation that left them feeling vulnerable, exposed and helpless attests to the level of sexual violence in Kenyan universities.

One of the diary entries reads:

> *Dear Diary… I was a first year in my second semester in Campus. I was going to pick my notes from a course-mate I had given during class time. It was around 7.30pm and I had gone to the boys' hostel. This was not late since people are allowed to go 6 visiting up to 10.00pm. I was going to the 3rd floor. Up the stairs it seemed a bit dark since some bulbs were not working. On approaching the 3rd floor, a jamaa (a guy) started going down the floor but he seemed to come right straight to me. I thought he was drunk; maybe he had missed his way. I paved way for him but, as I was doing that he got hold of my breasts and squeezed them, then planted his lips on my lips. I couldn't scream since his mouth was on mine. Finally he let me go and said he wished he had gone all the way… He said I wish "ningekumanga" that is he wished he had sex with me. I stood there confused whether to proceed or go back; since I was now afraid of my friend also. I run back down stairs and went to my room. I felt so stupid and fooled since I could not defend myself. I have met this guy even after this incidence and he always comes close to me and reminds me of that day on the stairs. This incidence made me defer from going to visit friends in boys' hostel (memories in student's diary - pseudonym Carol).*

Moreover, Krebs et al (2007) submit that sexual assault is clearly an issue in need of attention by the campus community in the United States of America given its high prevalence and adverse consequences. According to them one out of five undergraduate women experience an attempted or completed sexual assault since entering college. They point out that the majority of sexual assault occurs when women are incapacitated due to their use of substance, primarily alcohol. For many students in the United States of America, college offers an environment notorious for encouraging excessive drinking and experimenting with drugs (Krebs et al 2007).

Research data indicates that relationships in the classroom have direct effect on learning (Russel 2004) and if learners are to master skills, learning must take place. However if assessment and education in the affective domain through which the factors of relationships can be addressed is ignored, the cognitive area will be negatively affected. More specifically, violence against students may result in higher levels of absenteeism(Rigby & Slee, 1993), greater truancy(Green, 2006) and increased likelihood of drop out(Leach and Mitchell, 2006) which are described by Lewin (2007) as forms of silent exclusion from school, all of which contribute to less effective learning. Levels of absenteeism have also been shown to increase with the severity of victimization which in turn has been related to depression, anxiety, sadness, loneliness and general low self esteem (Rigby 2003).

The aforementioned research reports suggest that the three domains of cognitive, psychomotor and affective are tightly integrated aspects of human learning. Furthermore, the reports show how the educational experience of many have been and are being grossly hindered.

Griffith & Nguyen (2006) rightly liken the cognitive domain when focused upon alone in the curriculum at the expense of the affective domain to a skeleton without the skin. Strangely enough that is what the curriculum in colleges and universities have continued to be for years (Popham 2011). It is frightening to imagine the impact that such incomprehensive curriculum will have on the society in the distant future going by the negative consequences witnessed so far.

Olubor & Ogonor (2007) carried out a study that hinges on production theory. The crux of the theory is that in the school, if the change agents adequately process the inputs into the system, the desired output can be attained. In the school set up, the educators and pupils are both the inputs while the educators are also the main agents in the processing stage. The ability of the educators to successfully carry out the processing stage diligently, determines the expected output which in the study is the good citizen. They however submit

that citizenship education can best be taught in schools by using teaching methods in the affective domain. They correctly observe that this is the right approach to the acquisition of learning which has to do with values, beliefs, attitudes, social relations, emotional adjustments, habits and life styles. While a need and the pride of every nation is good citizens in increasing number, paradoxically the only viable means of attaining this; the teaching and assessing of affective characteristics is not receiving the necessary attention in schools. This explains why the cry for good citizenship in many nations is not bringing in the expected result and the bulk of the students that schools are turning out to lack desirable social attitudes.

Even with the focus on the cognitive domain, our schools are still producing many students that fall short in this area. The biggest critics of today's educational system are the business community and those who have graduated from school. Though they too passed through the system, they can now see that it is not actually giving those passing through it what it takes to actually perform excellently out there in the wider world. As Griffith & Nguyen (2006) point out, what good is the acquisition of a vast range of academic skills if we are unable to integrate them? They observe that students need to be able to communicate value, organize and characterize, to effectively utilize and make sense of what they have learnt. These however are affective characteristics. This being the case, it is extremely difficult, if not totally impossible to attain maximally in the cognitive domain unless the complementary skills in the affective domain are not only taught well but carefully developed and consistently assessed.

Sumsion & Goodfellow (2004) in their work mapping generic skills across a number of curriculums articulate their concerns with what they describe as "unproblematised accounts of the development of generic skills and qualities" (p330). They claim that the skills that one might develop in an environment such as in a higher education setting might not automatically transfer to other settings. Furthermore, they assert there is a difference between capacity and competence such that "—capacity extends beyond competence; it involves an ability and a willingness to apply understanding, knowledge and skills to unfamiliar contexts and unfamiliar problems (p.332). Precisely, the argument is that while cognitive skills may be developed well enough at university, unless the student has certain affective capabilities they are less likely to be able to use their cognitive skills and understanding across a range of environments. (Boud & Falchikov, 2006). Consequently, there must be an explicit relationship between cognitive learning, assessment and "capability" (Sumsion & Goodfellow, 2004). Crebert, Bates, Bell, Patrick and Cragnolini (2004) claim that a student's ability to integrate and demonstrate generic skills across contexts "Requires ethics, judgment and self confidence to take risks and a commitment to learn from experience" (p.148). "*The idea of skills, even generic skills is a cull de sac. In contrast, the way forward lies in construing and enacting pedagogy for human being. In other words, learningfor an unknown future has to be understood neither in terms of knowledge or skills but of human qualities and dispositions*". (Barnett, 2004, p.247). In 'Learning for an unknown future' Barnett (2004) states that a being capable of thriving with uncertainty needs dispositions; "Among such dispositions are carefulness, thoughtfulness, humility, criticality, receptiveness, resilience, courage and stillness" (p.258). The reality of the submissions of Crebert et al & Barnet can be seen in the common cases of graduates from school with certificates showing brilliant academic attainments but who cannot deliver in the society. Therefore we have many countries with engineers in various field of specialization yet the basic things like power, water, good roads cannot be guaranteed. This is not because funds were not provided but simply because "the professionals" just could not function on the field. Similarly, there are many countries with specialists in the various aspects of administration, yet nothing is working. Affective assessment data has the advantage of improving academic performance through its positive effect on instructional strategies; what to teach, the methodology to adopt in teaching it, when to teach, the objective of teaching, the audience and where the teaching is to take place. All these are critical and sensitive decisions.

The cognitive and the affective domains are interdependent. For this reason, focusing on cognitive constructs to the exclusion of affective construct can only unavoidably lead to an incomplete educational experience for the learners and this is the situation in colleges and universities. The resultant effect of this among other things is that we have students for example with an advanced knowledge of teaching and with great abilities but with little or no regard for teaching profession or the ethical standards that govern it and carrying along with them the notion that they are the awful lot. Similarly, in various professions, many have thrown ethical standard to the dogs. Educators can only foster the desired positive change in learners' dispositions, attitudes, values and ethical perspectives by obtaining necessary information through a diligent and consistent assessment of affective characteristics. Incidentally the affective domain has been left dormant for some time now. The essence of assessing dispositions is to ensure that the learners have positive productive attitudes, values, etc so that the educators can capitalize on these, work on them to bring about increased attainment on the part of the learners. Where the assessment reveals negative feelings, the onus is on the educators to labor for necessary educational experiences that will bring about the anticipated positive dispositions.

Krathwol, Bloom & Masia (1964, p.60) in their seminal work describe the affective domain by contrasting it with the cognitive domain thus: "In the cognitive domain we are concerned that the student shall be able to do the task when requested. In the affective domain we are more concerned that he does do it when it is appropriate after he has learned he can do it" Krathwohl's definition is shows that the emphasis in the affective domain is : "did you" or didn't you" when you knew how? . With this definition the problem of subjectivity is totally ruled out. Birbeck (2008) gives a practical application of Krathwohl's distinction when he writes:

> I *once taught ethics to fourth year education students. The final assessment asked the students to discuss their understanding of ethics and they were encouraged to use examples from their experiences on preceding practicum placements. One student wrote about how he came to believe that a student in his year two class had been sexually abused. He reported the matter to his mentor teacher and his ethical discussion in his essay centered on the fact that to his knowledge the teacher did not comply with South Australian law in terms of mandatory notification. What was not covered in the essay was that the student had completed his mandatory notification training and was under an equally compelling obligation as his mentor teacher to notify. Arguably, he had a higher obligation as it was his conviction of the abuse that raised the issue. ----He could have reported but he did not-----he has not demonstrated that he has the capacity to protect his students; an expectation placed on his profession by society, his employer and by his profession.*

Applying Krathowl's et al (1964) description enables one to judge an outcome in the affective domain without necessarily occupying the untenable position of judging another's attitude, values, feelings or motivations. The judgment is carried out by aligning the student's actions with what is expected by the particular profession in question. The crisis area in society these days is that the bulk of those leaving our schools have acquired so much knowledge but most of the time there is a "refusal" to do what is expected of their respective professions when it is appropriate after the individuals have learnt what do it. This is what the "abandoned" affective education and assessment should take care and this is a serious weakness in the curriculum of colleges and universities.

The Way Forward

Effort has been made in this paper to establish the fact that in schools, emphasis has been on instruction in the cognitive domain to the neglect of teaching and assessment in the

affective domain. As highlighted in the paper also, several reasons have been put forward to justify this neglect. For example, as mentioned earlier, it is argued that the cognitive domain is relatively easy to assess while the affective domain is said to be contentious. However, going by the implications of this continued neglect of teaching and assessment in the affective domain in favour of the cognitive domain as discussed in this paper, it can be put forward without contradiction that unless the necessary balance between the affective and the cognitive domains in schools is well restored and the move started without further delay in a significant way, time will doubly prove the educational experience in colleges and universities to be incomplete. Should this happen, then the implications that are emanating now as a result of the imbalance will only be a tip of the ice bag because by then the consequences would have become aggravated. The bottom line therefore is that the critical importance of affective assessment and affective education in "whole person development" can no longer be ignored in 21st century education.

If there will be appreciable result, then the modality of redressing the said imbalance between the cognitive and the affective domains in the curriculum must be comprehensive in nature and properly coordinated by relevant authorities'. There are pockets of efforts being made here and there but this is not enough. For example, Shephard (2008) points out that one area where affective outcomes are now openly and successfully being sought in some countries is health sciences. Doctors, nurses and related health professionals are trained to heal but their training also seeks to ensure that they display caring attitudes towards their patients (Shephard ,2008). This involves setting learning outcomes that include affective attributes and using learning and teaching activities that promote their attainment (Howe, 2003). Selection process are also tailored to eliminate those with embedded inappropriate attitude while educational processes are put in place to further enhance appropriate attitudes in those selected. A practice of this nature if incorporated into every other profession in a systematic and comprehensive way will be a means of giving affective education and assessment the deserving place.

Certain learning and teaching activities are most successful in encouraging learners to move through the affective domain's hierarchy (Shephard, 2008). For example in a general learning and teaching context- discussion, open debate, peer involvement, role playing, problem based learning, engaging with role models, simulations, games, group analysis of case studies, expert engagement, perspective sharing and reflection, appropriate use of multimedia to trigger responses – all provide the main stay of learning activities in those areas of higher education where affective outcomes are sought (Shephard, 2005, Howe, 2003). These activities, if well handled and integrated by educators will go a long way in fostering the teaching and assessing of affective characteristics.

Unlike during the Student Assessment Movement of the late 1970's & early 1980's, computerized, more recent, more valid and more reliable affective assessment instruments are now available for those who will avail themselves of the usage (Saxon & Calderwood, 2008). Some of the available affective assessment instruments according to Saxon & Calderwood are: Achievement Motivation Profile (AMP), BarOn Emotional Quotient Inventory (EQ-1), Beginning College Survey of Student Engagement (BCSSE), College Student Expectations Questionnaire (CSXO), College Student Needs Assessment Survey (CSNAS), Noncognitive Questionnaire (NCQ), Student Adaptation to College Questionnaire (SACQ), Perceptions, Expectations, Emotions and Knowledge about College (PEEK). Institutional decision makers as well as developmental educators however will have to keep pace with developments in the area of affective assessments so that they can be aware of the variety of affective assessment instrument that are currently available. With the availability of these affective instruments in different varieties now, the onus is on Institutional decision makers and developmental educators to also give attention to how these instruments can be used in the assessment process (Gerlaugh et al 2007).

Concerning the controversy over the form and content of affective education, the establishment of private schools based on any of the forms of absolutism or private schools based on developmentalist philosophy is an option on one hand. Individuals in the society who wish to attend private schools can make a choice. Those who embrace absolutist views have the legal right to establish and or patronize private schools where such views are expressed. Absolutists believe in the indoctrination and inculcation of their beliefs. Since the developmental version of affective education reflects the civil rights guaranteed in democratic societies, one expects that the public schools will embrace the developmental view of affective education and give opportunity to member of the public to benefit.

The measurement of important personal and social qualities, including affect, cannot occur directly. Unlike the measurement of height and weight, which involve the use of well calibrated and standardized tools that directly measure stable qualities, the measurement of temperament, personality, attitudes, feelings, emotions, and values may involve the use of tools that are not as well calibrated. However, methods have been devised to help overcome these and other potential difficulties associated with the assessment of affective qualities. Such methods include: The use of observations, interviews, self-report, naturalistic inquiries, questionnaires, surveys, and other forms of measures. Measurement generally is enhanced when information from various informed and knowledgeable sources is considered. For example, when working with adolescents, measurement of important affective traits may be enhanced by acquiring information directly from the target adolescents as well as from their parents and siblings, teachers, friends and other peers, together with others who are very close to them. The acquisition of information from other sources may be particularly beneficial when the traits being measured are displayed externally (as opposed to ones, like preferences, that are displayed internally), the qualities being assessed are less reliable (e.g. moods), and the psychometric properties of the measures are weak. The availability of information from various sources enables professionals to determine its completeness and consistency. Generally, information that is more complete as well as consistent is more valid and more reliable.

Furthermore, an accurate understanding of one important trait is enhanced by information about various other important traits. For example, an understanding of qualities associated with extroversion-introversion generally is enhanced by knowledge of a person's age, gender, intelligence, achievement, language, self concept, and other important qualities.

Though criticisms concerning affective education have always been laid at the doorstep of the school, total responsibility for affective education is not such that the school alone should be saddled with, neither will the effort of the school alone bring in a comprehensive and appreciable results should the school assume total responsibility. Parents, religious organizations, courts, youth organizations, the media, specialized government agencies and the entire society need to be brought on board because in the real sense, everybody is a stakeholder in education. Though the school should not go solo but it must take the lead. This will amount to a lot of work for teachers and educators. They must be sufficiently motivated to put in their very best. It is therefore important that this onerous responsibility be adequately compensated for in terms of commensurate remuneration.

Particularly, Institutional administrators, educator, assessment specialists will also need to come on board and ensure that regular conferences, workshops and in-service trainings are carried out in the area of affective characteristics and their assessment in schools with the outcome of such exercise strategically and wisely disseminated. The relevant authorities will also need to make available Research grants in the area of affective characteristics and their assessment in schools. To follow this up, Institutions and individuals are to be encouraged to apply for these grants and carry out in-depth research that will further address current and anticipated issues in the area of affective education and affective assessment. Some of the issues that the academia needs to focus upon for solution include:

- What methods of affective education would be legitimate to adopt in a situation where young learners do not have the capacity to think logically at higher cognitive levels?

- What happens if genuinely and carefully formulated values and actions go contrary to established school values and traditions?

- What public value may be promoted within the scope of the law such that the rights of the learners and the rights of the society will both be protected?

These and many other issues about affective education and affective assessment can definitely not be sorted out in one go. However the journey towards solution must start actively and in a coordinated and comprehensive way somewhere. If this is done, before long, the needed balance between affective and cognitive domains will be restored and educational experience will be complete and rewarding.

Conclusion

From the fore going, it is obvious that affective education and assessment are necessary conditions for effective education. If the necessary balance between the affective and the cognitive domains is well restored in all colleges and universities and kept effectively restored, there would be a dramatic difference in the quality of college and university graduates as their educational experience would be comprehensive. In the light of this there must be a quick end to being enamored only with knowledge acquisition. The impression that is long been given that cognitive thinking education is equal to academic courses devoid of affective education is not only misleading but counterproductive.

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Miscellany

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