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Body, Gender, and Sexualities Approaches in the Political-Pedagogical Project in a High School in Brazil

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Abstract

The aim of this text is to analyse how the themes of body, gender and sexuality have been positioned in the Political-Pedagogical Project, a document that provides guidelines for all educational actions in a school, in a public state school located in the city of Aracaju (SE). We have adopted a post-critical and post-structuralist perspective, problematizing the processes of signification and how they influence the knowledge production and social relations, from the authors' readings: Carvalho (2010), Foucault (1988), Louro (2010), Scott (1995), Butler (2010). Methodologically, we have developed a quantitative approach, from the documental analysis in a cultural and social perspective. We have verified that body, gender and sexuality themes are introduced superficially, causing to be linked to lack of familiarity, as well as to the absence of initial and continued education formation of the school agents.

Keywords: body, gender, political-pedagogical project, sexualities

1. Introduction

The deconstruction of concepts, which hierarchize relationships and keep socially discriminated groups aside, has been gaining relevance in several knowledge fields, mainly in Human Sciences, from a questioning and inclusion perspective that the studies of body, gender and sexuality are included. In the educational field, it is not different as the academic context allows the discussion on the school taken as a multicultural place, undoing the pattern format of education that has historically neutralized the difference.

The schooling daily routine is dynamic, fluid and with unexpected experiences, which insert themselves in the pedagogical practices through the "hidden" or "informal" curriculum, permeating several questions in the classes and school daily routine. The programs of school subjects and the organizational management itself, many times, have not been appropriate to those matters, despising them, even if in adverse situations they show up.

The introduction of themes such as culture, multiculturalism, body, gender and sexual diversity, inequality, equity, difference, social class and ethnical relations in the school formal curriculum, in the school management and in the Political-Pedagogical Project (PPP) in teaching institutions should develop a more tolerant pedagogical practice regarding to differences. As those aspects define the teaching process, schooling practices, teachers' roles and the educational role institutions develop, it has been necessary to expand the view on those themes or grant greater visibility to the aims and strategies to be achieved during the school year, especially the ones that are proposed in the PPP.

Considering it, it has been valid to question how the body, gender and sexuality approaches have been inserted in the Political-Pedagogical Project of a high school public institution. What are those themes' role in the objectives, aims and methodologies of the Political-Pedagogical Project? Such questionings have worked as a "conducting wire" to the analysis of the inclusion and the importance of discussing on those themes in the school during the whole teaching process, in other words, its transversely aspects in the Political-Pedagogical Project, in the school curriculum and in the teachers' pedagogical practices.

In this text, we bring some initial results of the research developed in the Graduate Program in Education of the Federal University of Sergipe, entitled "The inclusion of the gender perspective in the initial and continued formation of basic education teachers", funded by CAPES (Coordination for Improvement of Higher Education

Personnel). We have adopted, therefore, a post-critical and post-structuralism perspective, problematizing the signification processes and how they influence the knowledge production and the social relations from the reading of authors such as Carvalho (2010), Foucault (1988), Louro (2010), Scott (1995), and Butler (2010).

2. Method

The methodological premises are based on the qualitative approach, as it considers the necessity of a group of interpretative techniques to express the sense of social phenomena and the comprehension of the meanings of human actions and relations (Denzin, 2006). We have also considered that the qualitative research is closer to the perspectives of cultural studies analysis – gender images constitute as one of its analytical slope -, as well as gender studies have been inserted in the multiculturalism field, having as their main discussion agenda the ambiguity of identity/difference (Woodward, 2007; Hall, 2003). As a strategy of data collection, we have elected the documental analysis, aiming at producing knowledge related to the object, in a cultural and social perspective.

Initially, we have discussed on the approaches about body, gender and sexualities in the school and in the school curriculum. This research has been applied at a public school in Brazil called Colégio Estadual 17 de Março (March 17 State School). Later, we have presented the main results of the research with the analysis of the Political-Pedagogical Project, which is a document that must guide all the actions related to education that take place in or out the school's facilities. Its organization has to be the result of a collective project with the participation of all who are part of the school's community.

3. The Approaches about Body, Gender and Sexualities in the School

The characteristics attributed to men and women must be questioned and denaturalized as they are part of a historical process of construction. Gender studies arise as an analytical and political tool, which allows comprehending "the fundamentally social character of distinctions based on gender" (Scott, 1995, p. 72). We intend to problematize the ways through which the man/woman binary aspect, lined by the biological framework, has been built and scattered in social relations. The ways of representation of senses and meanings that we attribute to male and female roles and places have brought out the masculinities and femininities demarcated by heteronormativity. Ways of dressing, behaving, acting and thinking have been determined to men and women in a different way, as if gender would already grant power to men and submission to women. It is exactly some of these aspects and many others that gender studies have been questioning. Therefore,

> [...] that forces those who employ them to take into consideration the different societies and the different historical moments they have been dealing with. It moves away (or intends to do so) from the essentialist propositions about genders; the optics have been directed to a process, to a construction, and not to something that exists a priori. Concept starts to demand that one's thinks in a plural way, highlighting that projects and representations about both men and women are diverse. It has been observed that gender conceptions differ not only among societies or historical moments, but in the inner side of a certain society, when considering the miscellany of groups (ethnic, religious, racial, social class) that constitute it (Louro, 2010, p. 23).

Such perspective gives rise to the necessity of noticing the cultural construction of gender demystifying the male power that changed the female into the second gender, placing the woman in a condition of being submissive, restricting her to the private space. To Louro (2010), we have to abandon the gender essentialist speeches, primarily linked to the dichotomist aspect sex/gender, in order to think of it from the idea of culture. The meanings we have about men and women should be modified by the social relations demarcated by time and space. This way, as we talk about gender we have to take into consideration the fluidity of representations and meanings that men and women attribute to their bodies, their desires and their sexuality. In this historically uneven scenery, gender studies and their intersections with studies about body, sexualities, religion and ethnic-racial and generational studies have contributed to the reduction of power asymmetry and to the increase of equity.

> Gender is a category architected from cultural, social and psychological constructions and not biologically defined, it is a category of analysis. Studying gender categories means to think of how they have been structured, to examine it means to establish an either social or symbolic relation. While analyzing gender inequalities, we cannot abstract class, ethnicity and race inequalities which make even more dramatic the individuals' experiences and, more specifically, the women's ones (Cruz, 2014, p. 10).

These discussions imply to detect that gender studies not only include female submission, they allow to comprehend all the experiences individuals are subjected to and to question inequalities in the relations, no

matter if they are concrete or symbolic. They still allow comprehending historical aspects, which are imbricated in such relation, undoing a view that neutralizes differences, by silencing those speeches that are aside from what has been instituted as universal patterns. During the process of construction of gender, relations have been established through a pole of power in which the male pattern is a "universal pattern" (Bourdieu, 1999, p. 17), placing men in a privileged place on the social relations during the exercise of power.

> The exercise of power is not only a relation between individual or collective "couples"; it is a way of action over others. Which means, since now, that there is nothing called Power, the power that would exist universally, in a massive or diffuse way, either concentrated or distributed. There is only the power they exercise over "each other". The power only exists in an act, however, since it has been registered in a field of dispersed possibilities, leaning on permanent structures. That also means that power is not a kind of acceptance. Power itself is not renunciation to a freedom. Transfer of detained rights in order to someone represents you? (Which does not prevent acceptance to be a condition to the existence or maintenance of a relation of power; the relation of power might be the effect of a permanent or previous acceptance, but not by the nature the manifestation of a consensus (Foulcault, 1988, p. 14).

Power relations permeate the whole normative scheme of a speech which aims at hierarchizing, subordinating and excluding. They have been gaining much more room through the instruments that are represented in politics, religion, sciences and several institutions, controlling populations in a wider and wider way, disseminating a relation of proximity to the instituted standard. This way, aiming at deconstructing such standards, cultural studies contribute with new ways of thinking of the subject, understanding how the production of culture and the dominant systems give a meaning to the subjective experiences and everyday life.

Being the school a socialization place, an instrument of power, it has been a tool to the maintenance of ideologies. Bourdieu (1999) affirms that the curriculum is based on the dominant culture. It is necessary to comprehend how dominant ideologies have been inserted in the curriculum along history, how people used to notice each other and how they used to build their fixed identities of subordination and they did not use to question their room, as "[…] it is through the link among knowledge, identity and power that themes such as race and ethnic group get their room in the curricular territory" (Silva, 1999, p. 107). In this sense, subjects are, therefore, the result of a cultural and social process that school produces and reproduces continuously. The post-critical studies have questioned the ideological power of school, contesting the idea of fixed identities, showing how the individuals in late modernity present their fluid and defragmented identities. The identity fully unified, complete, safe and coherent is fantasy. Instead, as signification and cultural representation systems multiply we have been confronted by a disconcerting and changing multiplicity of possible identities, with each one of those we could identify - at least temporarily (Hall, 2003, p. 13).

The inclusion of these themes in school through multiculturalism allows the deconstruction of the trend to homogenization, to standards, emphasizing the recognition of difference, in a process of permanent confrontation and not hiding the other. That is why it is important to recognize multiple identities, which are inserted in the school, allowing the dialogue and empathy with the other who collaborates and interferes in such exchange of knowledge and in our identities constructions. In this regard, the ongoing speech allows demystifying the solid notion of a unique way of masculinity and femininity, which perpetuates a standard of behavior according to the gender, instituted by society. Therefore, cultural studies on the gender perspective carry the function to make us notice "[…] the cultural production processes also from the (current and historical) participation of groups that, socially marginalized, have not been recognized by their contributions to modern culture" (Adelman, 2006, p. 1). Recently, groups have been presenting in an acting and contesting way in speeches.

The constructions mentioned so far reflect in a meaningful way on the subject's bodies, because it is on them that representations find materiality. Normative descriptions naturalized and legitimated by Biology demarcate space on the individuals through their bodies, gaining represent ability and sense. When these standards flee from the established rule, they are immediately questioned. In this sense, "the individual builds the evidence of their behaviour as a man or a woman, not always are aware of that, as they have acquired the principle of such behaviours along their childhood, through socialization, and their confirmation depends on the ordinary game of existence (Le Breton, 2014, p. 19).

We can state as an example of "female nature" the woman's body, which is seen as fragile and holder of sensibility that, for instance, categorize and base maternity, placing the woman aside. Thus, it could be stated: "[…] male's look and speech sexualize the woman's body. Maternal instinct and love become mechanisms of controlling female sexuality" (Araujo, 2009, p. 113). The notions of man and woman that we individualize are

not essences, they are transmitted, they are constructions of intelligibility of the body through the social aspect as they are polarities that have been instituted. It has been noticed, through the historical context, that this is nothing about a natural matter, but something socially instituted, in which to men, the power of reason has been designated and, to women, the reproduction instinct, established through their body. Having said that, it has been evident:

> The ways of being and having been in the world that became hegemonic concern to the ways bodies, genders and sexualities have been thought of and produced, reduced to fragmented, imprisoned and binary dimensions. Generalized and naturalized, heterosexuality, inserted in the body, has become reference everywhere and to everybody, as Guacira Louro has stated since 1999. This way of sexuality has invaded school texts and pedagogical procedures which aimed at educating boys and girls, and still remain in them in this very beginning of the XXI century (Silva, 2014, p. 67).

Such discussion leads us to think about the body as a social-cultural construction, by considering masculinities and femininities and other several ways related to biological bodies, whereas the body cannot be thought decontextualized from gender.

> These days, as it has been formerly, Biology is a political chapter. Sex, as well as body, is a crystallization of social meanings, including in its description that it would not be able to escape from categories of sense and values. The body does not determine identity anymore, it is at its service (Le Breton, 2014, p. 32).

Through this context it has been arisen the challenge of articulating the ordinary with the plural, equality with difference, promoting discussions on how prejudice is produced, which might be the school's expression towards the diversity of identities, sexual and gender differences of the individuals involved in school relations, emphasizing also their intersections with matters of social class and race.

> Several social problems occur from sexism, heterosexism and gender inequity, associated to other inequalities, and they reflect on school: discrimination and violence, teenage pregnancy, women's, domestic and remunerated work exploration/devaluation, including the teaching work, paternity omission and the deriving mothers' overload. And the school take part in that either direct or indirectly, in action or omission, in the construction of those problems and inequalities, giving inequal treatment to students and legitimating prejudicious world's and subject's view (Carvalho, 2010, p. 79).

The school daily routine influences, it is an opinion leader and it is discursive. Therefore, there is the need to insert in the teaching and learning processes practices that project a school curriculum that is according to the contemporary world, which is more and more heterogeneous. Having this in mind,

> The schooling institution is a privileged site of socialization, where it is given special attention to the way subjects, in social relations, crossed by different speeches, symbols, representations and practices, constructing their identifications, (re)constructing their social places, their dispositions, their ways of being and having been in the world (Dias, 2014, pp. 64-65).

It has been said, therefore, that educative processes are related to socialization, and it is vital to the comprehension of gender analysis in the schooling institution, aiming at contributing to non-sexist behavior and practices as well as the acceptance of diversity and tolerance towards the other. Considering it, the school will be contributing to the questioning of the established rule, breaking a patriarchal history, which has consolidated for a long time an androcentric and racist school curriculum. Not opting for such alternative means that the school keeps the dominant order and neutralizes subordinate behaviors.

> That does not mean that we have adopted a naive, utopian or reductionist attitude concerning educational institutions, as we comprehend that those do not hold the power of eliminating sexist practices, however, they might assume a critical, attentive and problematized attitude concerning its practices and components (Oliveira, Ramos & Silva, 2011, p. 102).

The inclusion of themes in schools has not been restricting the power of modifying the social order historically established, but as a proper place to problematize those matters, give them visibility and question attitudes that legitimate binary standards towards a sexist and prejudiced logic. Besides being a practice that must be present in everyday practice, those themes must be in the Political-Pedagogical Project, in the School Curriculum, in the Course Plans, as a register of practice, also as a goal to be followed.

4. Body, Gender and Sexuality in the School Curriculum

It is possible to reflect on how the body, gender and sexuality studies have been so imbricated and present in the school context, even in a hidden way, and not having gained the relevance they should have. The school daily

routine has been marked by instruments that mold and legitimate the pedagogical practice, which control and segregate subjects, but at the same time, might be questioning and liberating.

By analyzing the Political-Pedagogical Project as an integrator element between theory and practice, subject and object, knowledge and reality, its social relevance and pertinence to the schooling institution is much important to dialogue with the assumptions of a changing and critical education, as there should be the inclusion of gender perspective in its methodology.

The Political-Pedagogical Project has arisen in a historical context of transition, after two decades of military dictatorship in Brazil (1964-1985), which had controlled all instances of public institutions, including the school. By the time it was over, the democratization movement in the country brought a great challenge that was to propose to break down the barriers delimitated by the Interventionist State from the previous political regime. One of those barriers was the democratic management of public education.

Only later, in 1996, with the National Education Guidelines and Framework Law - Law 9.394 of December 20, 1996 (Brazil, 1996), all teaching institutions have been given the task to elaborate and put into practice their own pedagogical proposals. For that that matter, it should be guaranteed that every schooling community participated in the process, giving "voice" to all sectors that compose the school so that they would create an active and practical tool.

> Democratic management must be impregnated of a certain atmosphere that everyone breathe in the school's facilities, in circulating information, in sharing the work, in establishing the school calendar, in distributing the classes, in the process of elaboration or creation of new courses or new school subjects, in creating working groups, in training human resources etc. Democratic management means, therefore, attitude and method. Democratic management is necessary, but not sufficient. We need democratic methods that support the effective exercise of democracy. It is also a learning process, it demands time, attention and work (Gadotti & Romão, 1997, p. 36).

This new pattern created to improve the school quality brought to it those who have been previously excluded from the public teaching system. Diversity started to compose its premises and soon occurred the necessity of adjusting it to reality. Aiming at referencing schools, the federal government has instituted the National Curricular Parameters – PCNs (Brazil, 1997), bringing, besides the content of compulsory subjects, the transversal themes that permeate the school daily routine and that are responsible for the construction of a critical and active citizen in society.

Besides giving some thoughts about the historical process and questioning the constructions previously mentioned, the value of the difference and the respect to the several ways of manifestation of identities are perspectives adopted by the gender studies. Being the school considered as a primary former of critical individuals who can be able to respect the difference, it becomes an important place to talk about and spread the concept of gender.

Even with the changes the Federal Constitution of 1988 (Brazil, 1988) offered in defense of rights - according to the subsection V of the 3rd article, which says: "[…] without prejudice of origin, race, sex, color, age any other way of discrimination" (Brazil, 1988) - the notion of gender is still poorly defined in the educational field. Sometime later, in 2000, Brazil signed the "Jomtien Declaration", a document elaborated in the World Conference on Education for All (Unesco, 1990), from which, among the eight goals established to the improvement of life conditions by the United Nations, it was highlighted the need for the equality promotion among genders and women's empowerment.

That has been a continuous challenge to be faced by the schooling institution that proposes to take responsibility on the construction of a location that supports diversity and also holds the need of prioritizing equality of conditions, respect among all individuals, considering the main documents that guide and legitimate the teaching and the human rights protection. As highlighted by Viana and Unbehaum "[…] the elaboration of the PCNs, between 1995 and 1997, has aimed at guiding the basic and secondary education all over the national territory, representing an important step in the inclusion of gender perspective in education" (Viana & Unbehaum, 2006, p. 416).

Thinking about significant aspects related to gender in the Political-Pedagogical Project is a way to overcome the silence imposed for so much time over school. The National Curricular Parameters (Brazil, 1997) is a legitimate support that the teachers have to deal with that matter in their practice. Therefore, bringing the themes of sexuality, body and gender to a document that aims at guiding their practice is a lot important to facilitate even more their inclusion in the pedagogical context in the school.

5. Results: A Look at the Inner Side of School

This research has been applied at a public school in Brazil called Colégio Estadual 17 de Março (March 17 State School). The starting point to this research was to present the proposal to the directory board of the school, by describing how the research would be carried out and how it would contribute to the school. The directory board seemed accessible and indicated the legal paths that would allow us to proceed with it, so a request letter to access the document–the PPP–with the research description was written and handed in. This way, we have presented the main questions that guided the research conduction: Does the methodology described in the Political-Pedagogical Project contemplate the studies of body, gender and sexuality? How are these themes addressed in the document? How does the school notice and understand diversity?

The Political-Pedagogical Project refers to the years 2014 to 2016 and had been elaborated after changes made by the directory board, in January 2014. After that it was approved by the schooling community, keeping the criteria of participation of all. Highlighted in the inside cover a statement by Paulo Freire was registered:

> Planning the practice means having a clear idea of the goals we want to achieve with it. It means knowing the conditions under which we will act, the tools and the means that we have. Planning the practice also means to know who we can count on to execute it (Freire, apud Sergipe, Colégio Estadual 17 de Março, 2014, p. 2).

The illustrative sentence in the Project reveals the core of the schooling document as a proposal of action. Right after the identification of the school, of the directory board and of the teaching staff during the presentation, the institution revealed their conception of a PPP:

> The Political-Pedagogical Project represents the school's administrative, financial and pedagogical organization which guides its pedagogical activities as to give a course towards the resolution of its educational, infrastructure, human and material resources problems, pursuing an improvement in the teaching-learning process (Sergipe, Colégio Estadual 17 de Março, 2014, p. 7).

It was stated that the PPP was supposed to guide the school taking into consideration aspects that involve physical structure, providing quality education, ludic and technological resources, materials that assist the teacher in the classroom, financial sources to maintain its functioning. It is important to mention that, besides guiding the organizational, administrative and financial aspects; it is also pedagogical, guiding the teaching and learning process. That is why it is important to include in its perspective conditions that consider in the proposed practices actions which must face a speech that hierarchize and marginalize the individuals involved in the process, recognizing the school as a place of democratic experiences where everyone has a voice, undoing the stereotypes which permeate the pedagogical practice.

In the topic Theoretical Aspectss, the principles on which the pedagogical work would be based, were described, from which we can highlight: "Encouraging students to think and freely express themselves, preserving the defenses of public interest" (Sergipe. Colégio Estadual 17 de Março, 2014, p. 8). Even bringing the subjectivity of freedom to the students' expression, it has been noticed that there is a limit when, after the comma, it brings the word "preserving"; it is, then, convenient to question: What it this public interest? What about the cultural standard? Are these the speeches that society brings silence?

It is known that speeches constitute the individuals, producing "[...] places from where individuals can place themselves [...]" (Woodward, 2000, p17) and the ways they should behave according to the standards instituted in a biological way. The school reflects and reproduces that in its speech, normalizing the bodies from this sexist determination. According to Reis and Paraíso, "[...] in this production of the subject's positions through the speeches, some have been constituted as normal and intelligible and others have not […] from culturally established standards" (Reis & Paraíso, 2014, pp. 239-240).

It is important to mention how the school defines its general objective: "[...] to provide changes in the School in order to no longer be bureaucrat, and having as its goal their students' learning, developing in them their critical, participative and creative spirit, making them active citizens in their environment" (Sergipe. Colégio Estadual 17 de Março, 2014, p. 10). Such conception reflects that the institution notices the student as active and not only as a simple content receiver. It perception is positive, as students themselves have the possibility to question transgressive practices that school might exercise, before a cultural construction to which it is submitted as an ideological body of the state in the reproduction of ideas that may not make plurality possible. The school reinforces its intention through goals and presents it priority: "[...] to promote changes through lectures, meetings, discussions and research" (Sergipe. Colégio Estadual 17 de Março, 2014, p. 10). This idea is reinforced when it can be read in the document that,

> In the present reality, where people are used to living in misery and social exclusion, it is the school's role to form opinion leaders, citizens of the third millennium to seek ways of building a society for all, where exclusion and inequality are replaced by justice and equal opportunities (Sergipe. Colégio Estadual 17 de Março, 2014, p 7).

Even if the school shows it is open in attitude, in general, in some institutions there is still an exclusion process that although it can be considered a socialization place, actions are predetermined by the schooling routine, in which male and female characteristics are highlighted.

> Although it has been realized the socialization work developed in the schooling institutions routine, this has been constituted as a process of 'indoctrination' of place/time thought to attend male and female characteristics of the individuals who perform the schooling everyday routine. Ways of body behaviors, disciplinary contents, curricula and languages in the school practices allow a certain control in the schooling process, mentioned as natural ones (Dias, 2014, p. 65).

Gender studies have also put pressure on the school to assume it position as a collective place, its characteristic of being a public site of impingement of social problems, of sheltering vulnerable and marginalized individuals, having the opportunity to promote respect to diversity.

The highlight made by the school in its PPP mentioned before might indicate an advance, even in a superficial way, favoring the deepening of a confrontation policy, by considering gender, sexual identities and minorities approaches towards the "opportunities of equality" in a way the institution sees itself as an appropriate site to this action happens. For that reason, it is such a present and necessary discussion in the schooling context, considering the several ways the school acts to the formation of individuals, as a creator of knowledge and soon as a place of meaningful experiences.

The socioeconomic context the school is placed in, despite being characterized in the document as "relatively good", has revealed that the attendance is directed to needy students who come from neighbor communities. It is a challenge to the institution, therefore, to reinsert those individuals in the society, modifying their reality, understanding education as modifier of an excluding reality in which groups are segmented according to their social classes. The main limitations stated are students' family experiences that according to the document live only on one minimum wage even with a big family. Not to mention that most kids are supported and taken care by their grandparents. Parents, besides not being literate, work the whole day, making it difficult to follow their children's development in school. In this sense, the school tries to mediate conflicts aiming at changing the family absence status.

The reality in which the school has been inserted allows much more, in terms of what can be made, in its practice, as well as in the document that guides it, which highlights actions as gender equality and the inclusion of the diversity perspective are contemplated. All aspects involved in such reality comprehend how the hierarchization of social relations happens in our society: through power relations, promoting discussions based on experiences, rousing discussions, promoting education in human rights and the valuation of diversity.

Concerning the Strategic View, the school has highlighted participation, equality, transparence, integration in its mission and future view. Herein we highlighted the notion of equality stating that "[...] we are all equal, there is no distinction of this or that, no matter of education level or job position one holds" (Sergipe. Colégio Estadual 17 de Março, 2014, p. 16). It is possible to recognize a reductionist view of equality, concerning the subjectivity that the pedagogical work is in the promotion of equality and as the public school being a place where the minorities pass by their everyday lives and who are weakened by their conditions. The School Atmosphere also deserves relevance, as it is stated not to be found in the school "[...] discrimination of color, race, religion, social class etc., being all treated with equality" (Sergipe. Colégio Estadual 17 de Março, 2014, p. 16).

From the moment a school allows such discussions, those representations are problematized, as in the school's document this concern is already inserted, that means the school may have started to work on those matters. Besides, it has been noticed that gender and sexual identities discriminations have not been contemplated at the moment the school states that in the schooling daily routine no discrimination cases has been identified. That might reveal that school agents are not familiar with the themes object of this article.

In another piece of the document, entitled "Effectiveness in the Teaching-Learning Process", it has been stated that the curriculum is organized and articulated with the National Curricular Parameters (1997), it has not been mentioned at any time the transversal themes, and the body, gender and sexualities discussions are absent from the document just mentioned. That might reveal the lack of qualification of those involved in the construction of the Political-Pedagogical Project, before a discriminator education that has not contemplated the gender, body

and sexuality speech, what may become object of study in a future research.

6. Discussion

From the analysis of the document–PPP of Colégio Estadual 17 de Março–it has been revealed that gender, body and sexuality constructions are superficial in such an important document to the school, which shows that there is much to advance on the guidance of practices that give importance to a formation to diversity.

It is necessary that the school curriculum highlight and grant visibility to gender equity, to those groups socially marginalized and to women, through the insertion of such aspects in the objectives that conduct and guide the pedagogical actions taken to form citizens who are aware of the ideas related to an education in sexuality and gender. Some governmental actions have been calling attention of school staff to this necessity, aiming at stimulating the implementation of those documents, training the professionals that will provide opportunities to discuss sexuality and gender in the school's facilities. Even though it is a great challenge to introduce those themes in the school, it is necessary to review the need of dissemination of information and education, as a subjective right of the human being, so that an attitude of respect to diversity might be developed.

The school should not coadunate with the perpetuation of constructions that standardize hierarchies based on stereotyped conceptions on the male and female binarism, but should enable an open and empathetic approach, questioning universalism in an intercultural optic. And that must be in the documents which legitimates its practice: the PPP.

This research is limited, at first, to a documental analysis, but it has been noticed that the Political-Pedagogical Project takes a big step by bringing the perspective of difference, to accept the others the way they are. However, it is also necessary to bear in mind that inside the school, relations are relations of power, consequently relations between teachers and students e the other relations, which involve the school, tend to reproduce situations and experiences of prejudice, discriminations and hierarchies that come from the relations out of the schooling environment. It means that the experiences of school, family and professional agents tend to influence the students' representations.

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Competition on the Georgia Education Marketplace

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Abstract

Georgia implemented a nationwide, full scale school voucher program in 2005. The new voucher plan was designed with the intent to provide equitable distribution and efficient utilization of financial and human resources. By introducing the voucher scheme, the government hoped to promote competition among public as well as private schools to push them operate in a cost-effective way and consequently improve education quality. This study tries to identify the effect of increased competition on the quality of education as perceived by school principals and teachers in Georgia. More specifically, we study to identify if the voucher model, as a result of increased competition, has created an environment that is supportive to students in improving their academic performance. Our results suggest that school principals and teachers do not view competition as a force or stimulation towards better quality teaching and improved students' academic achievement.

Keywords: school competition, education voucher, school privatization, Georgia, school choice

1. Introduction

Financing public schools by vouchers or, the introduction of other forms of market solution to education have been proposed in the search for more efficient and equitable ways for allocating and distributing public resources (Levin & Belfield, 2005). Although vouchers may take many different forms by design and scale, the central idea is that governments expand the choice of parents by providing them with publicly funded grants and scholarships that can be applied and redeemed at any public or private school approved by the government. Voucher supporters argue that a choice system introduces a competitive pressure and creates strong incentives for schools to operate in a cost-effective manner to outperform other schools in order to obtain and retain students (Levin & Belfield, 2005). Conversely, voucher opponents argue that a public-school system is necessary to avoid segregation and foster an educated society. To date, evidence on the effectiveness of school vouchers is mixed and inconclusive. Often, debates over vouchers are guided by political and ideological preferences rather than presenting convincing empirical evidence (Levin & Belfield, 2005).

Nevertheless, various targeted and open-ended voucher programs have been implemented across the world. New York City, Dayton (Ohio), and Washington, DC voucher programs, Milwaukee Parental Choice, and Florida Opportunity Scholarship represent voucher schemes that are limited to a certain group of population, designed with a specific purpose, mainly in targeting aid to low income families. Another type, nationwide voucher systems, has been introduced in Chile, New Zealand, and Sweden (Wolf et al., 2013; Epple et al., 2015; Myers et al., 2016). These full-scale schemes allow every student to use public vouchers at any public or private school approved by the government. Evidence concerning the effectiveness and equitability of both types (i.e., targeted and general plans) voucher models is mixed and not persuasive. Furthermore, there has been a "cream-skimming" and "peer effect" observed in the Chilean model, when better schools attracted and selected the best students coming from affluent families, while disadvantaging low SES students and perpetuating inequalities in the society (Hsier & Urqiola, 2003).

Despite the lack of evidence on effectiveness of various voucher models across the world, the Republic of Georgia implemented a nationwide voucher program in 2005 (PADECO, 2007; Herczynski & Durglishvili, 2011; Janashia, 2016). Similar to other countries, the new voucher plan was designed with the intent to provide equitable distribution and efficient utilization of financial and human resources (Simonia, 2007). By introducing the voucher model, the government hoped to promote competition among public as well as private schools to push schools to operate in a cost-effective way (Herczynski & Durglishvili, 2011).

Almost all voucher models are premised on the assumption that the expansion of school choice triggers competition among schools that in turn advances the quality of education, or equivalently, improves productive efficiency (Levin & Belfield, 2005). The ability to attend a school in neighboring districts with publicly funded vouchers enhances choice, and potentially imposes competitive pressures on other public schools (Hanushek & Rivkin, 2002). However, it is known that an education market functions "properly" and produces competitive pleasure when two fundamental conditions are met: first, parents have a set of choices among public and private schools within and outside a given district or region; and second: multiple suppliers, schools are present on the market (Levin & Belfield, 2005).

Most commonly, greater efficiency is defined as producing higher academic achievements (often as measured by test scores) at a lesser cost. However, in the Georgian context, it's very difficult to isolate and capture pure competition affects due to a number of amendments to the model since its inception. The voucher model, as a funding instrument, has been modified at least four times, each time integrating a new criterion for funding allocation to schools. Alternatively, it is possible to gouge whether the Georgian voucher model generates a competitive pressure based on the perception of school principals and teachers. Therefore, the focus of this paper is to assess how competitive pressure is reflected in the decisions of school teachers and principal and whether they perceive competition as a force for better educational outcomes.

This study examines the assumption that market competition improves the quality of education and students' academic performance. In doing so, the study strives to identify the effect of increased competition on the quality of education as perceived by school principals and teachers under the Georgian voucher scheme. Hence, the larger question is whether the Georgian school voucher improves the quality of education and students' academic performance as a result of increased competition. The specific questions that concern educational stakeholders and this study addresses are: do the Georgian voucher model generates competitive pressure? Do school principals view that competition improves the quality of teaching and students' academic performance? Similarly, do teachers perceive that the competition under the current voucher model improves the quality of teaching and academic performance?

The structure of this paper is as follows: the next section contains the definition of production efficiency and reviews some studies on various voucher models. Then it presents a brief review of the Georgian education system. It also describes the structure of the voucher model and discuses freedom of choice and regulations under the model. After that, the data, methods and instruments of data collection employed in the study are detailed and explained. Finally, the results section presents descriptive information and discusses the findings of the study.

2. School Choice and Competition

Arguments for increased choice and flexibility for parents and schools are based on the belief that competition increases productive efficiently. Productive efficiency in the education production function is commonly defined as increasing students' academic achievements and attainments with available, limited resources. That is the production of a certain level of education at the lowest possible cost (Levin & Belfield, 2005). Although evidence suggests that competition improves productive efficiency in general, evidence on the scale of improved quality education is mixed and unclear (Levin & Belfield, 2005).

The Milwaukee Parental Choice Program was the first voucher program in the United States, introduced in 1990 (Witte, 1998). The program intended to allow poor children to attend nonreligious private schools located in the city. In his non-experimental study, Witte (1998) randomly selected a sample of students from Milwaukee public schools and controlled for their prior academic achievements and background characteristics. Witte (1998) found no consistent differences in math and reading between the voucher and public school (comparison group) students. Using treatment and control groups – a random sample and a group of unsuccessful applicants–Rouse (1998) conducted multiple analyses and arrived at a different conclusion. She reported that attending a private school produced yearly math gains by 0.14 standard deviation, while the gains in reading were no significant.

The Cleveland voucher plan is another long-running voucher program in the United States. All students residing within the Cleveland Metropolitan School District are eligible to apply for the Cleveland Scholarship and Tutoring Program. At the same time, students are free to decide whether to go to a religiously affiliated or nonsectarian school. Rouse (1998) compared two groups: voucher recipient and non-recipient applicants and found a very small impact on the participant students' academic achievement. After three years, the gains of voucher students were negative and statistically significant. After five years, the gains of voucher recipients were lower in math but higher in reading compared to those of non-recipient students; also, results were not statistically significant (Rouse, 1998).

A report from a relatively new DC Opportunity Scholarship Program revealed no compelling evidence that the participation in the program has led to significant gains in students' academic achievement (Wolf et al., 2008; Wolf et al, 2009, Wolf et al, 2013). The program was adopted by the Congress and allowed families to send their children to private schools with the federal funding. Wolf et al (2008) compared students who were awarded a scholarship to those who applied for a scholarship (control group) but failed to obtain one. After two years, the impacts were statistically insignificant ranging from -0.02 to 0.03 standard deviation in math and from 0.05 to 0.08 standard deviation in reading. After three years, the results have slightly changed, though became statistically significant in readings; for math the achievement remained almost at the same level (Wolf et al., 2009).

Results are mixed and non-conclusive from those studies that use different measures of competition as a predictor. Using data on student performance in mathematics across 173 Kentucky school districts and Herfindahl Index (HI) as a measure of competition Borland and Howson (1995) report a marginally significant (Note 1) relationship between academic achievements and competition. However, even though the result of this study was not highly significant, Couch and Shughart (1996) rebutted the findings and contended that mixing public and private schools together in the same HI index introduces a bias against finding a "competition effect". They argued that because of the American school district assignment policy to enroll a child in another public school requires parents to move their place of residence and therefore, switching from one public school to another is much more difficult and costly than switching from a public to a private school (Couch and Shughart, 1996).

Employing the Herfindahl Index and Grade Level Performance Assessments dataset Marlow (2002) examined the effects of competition on students' academic performance in California. Although he concluded that greater competition improves student performance, the result of the study is somewhat mixed. Specifically, he employed the seemingly unrelated regression model and estimated the effects of competition on students' academic achievement controlling for a series of educational inputs (spending, teacher/student ration etc.). The result showed that 10 out of 18 estimations were not statistically significant (Marlow, 2002). Moreover, when the estimates were significant, they were not consistent across the grades. For example, the results of the study suggested that a one standard deviation decrease in HI was associated with a somewhat substantive increase in eighth grade reading scores (Effect Size=0.41) while the effect for fourth grade reading scores was moderately weak (Effect Size=0.22). Similarly, the effects of competition were fluctuating across the grades on math and writing (Marlow, 2002).

Zanzig (1997) also examined the effect of competition on students' academic achievement in California, but he constructed the model in a somewhat different fashion. He combined two alternative measures of competition the Herfindahl Index and the number of school districts per county. Specifically, based on the Californian statewide dataset - "Iowa Tests of Educational Development" - he created competitive thresholds for counties to balance and control for the number of school districts within counties (Zanzig, 1997). Therefore, using variation of school districts he found that greater competition improves student achievement, and it takes four school districts to make a completely competitive education market. However, additional competition, or the presence of more than four districts generates no further achievement gains. Translating these findings into the effect size suggests that a one standard deviation increase in number of school districts in a county (where number of school districts is less than 4) is associated with about 0.12 standard deviations increase in 12^{th} grade test scores (Zanzig, 1997). Similarly, a one standard deviation decrease in IH is associated with somewhat strong increase in students' test scores.

Evidence for improved educational attainment (measured by drop-out and graduation rates) as a result of competition is also mixed and not conclusive. For instance, Marolow (1997) found that states with more districts and more schools had lower drop-out rates (Levin & Belfield, 2005). In regard with graduation rates, Dee (1998) concluded that private school student numbers increase graduation rates (Levin & Belfield, 2005), thus the higher enrollment in private schools the higher graduation rate across the districts. In contrast, using the same sample Sander (1999) found no statistically significant effect on graduation rate (Levin & Belfield, 2005).

Although evidence from the above reviewed voucher programs provides an essential implication to public policy, their scale and target is limited. It's important to consider evidence from studies assessing full-scale voucher schemes. In 1981, Chile introduced a nationwide school voucher program that allowed all students to use public voucher at any public or private school (McEwan & Carnoy, 2000). Researchers who studied the Chilean voucher plan have concluded that the students using the voucher at Catholic private schools have done better than the students at public or non-religious private schools (Zimmer & Bettinger, 2007). However, Catholic private schools were able to use more financial and other resources compared to public schools, and therefore their

results did not yield a higher level of productive efficiency (McEwan and Carnoy, 2000). In addition, no clear evidence has been revealed that the introduction of competition improved students' performance at the national level. Further, fifteen years of competition produced only modest gains among schools in Santiago, while negatively affected schools in the rest of the county (McEwan 2000, as cited in Ladd & Fisk 2003).

New Zealand's school choice system represents another example of full scale voucher models. In 1991, New Zealand eliminated geographical school enrollment zones and moved to a market-based system of education. Each school henceforth receives funding on a per-pupil basis financed by the national government. Parents are free to choose their child's school, encouraging competition between schools for students. Unlike the Chilean experience, New Zealand does not have a national testing system and therefore it is impossible to measure the effects of competition on students' achievement as measured by test scores. As an alternative Ladd and Fiske (2003) employed a stratified sample of school teachers and principals to measure their perception of the impact of competition on students learning and other variables. Employing a sample of teachers and principals and the probit regression analysis, Ladd and Fiske (2003) concluded that competition–as perceived by teachers–negatively affected the quality of students learning. As for the principals' perception, the analysis showed neither positive nor negative effects. Specifically, for the principle equation, the coefficients were negative suggesting that competition decreases the quality of learning, but they were not statically significant. Our study largely follows the structure of this research.

3. The Georgian Context

Georgia, one of the former Soviet Republics, is located in Southern Caucasus. The county first gained its independence from Russia in 1921, but soon was incorporated into The Union of Soviet Socialist Republics (USSR). After 70 years of Soviet Regime, Georgia finally regained its full independence in 1991. The demise of the Soviet Union in 1991 drove Georgia into social and economic stagnation. Striving to adapt to the new reality, Georgia launched the implementation of structural reforms to transition from a centralized to a market economy. However, this transition was accompanied by unstable political upheavals, increasing poverty, and brain drain. Georgia underwent profound economic, political and social changes after 2003. A new wave of reforms has decreased the state involvement and correspondingly encouraged market mechanisms in steering the public sector.

3.1 Education System

Before 2003, the Republic of Georgia operated an inherited, centrally-planned Soviet-style education system. The system was highly corrupt and the personal political power often was a decisive factor in obtaining financial resources (Herczynski, 2001). In order to eradicate corruption, rampant nepotism and improve the system, the government introduced a number of sweeping changes, including the introduction of a full-scale voucher scheme.

In Georgia, formal K12 education is provided by public and private schools. In 2005, all public schools were formed as independent entities to allow financial independence in internal resource allocation. Public schools are run by principals elected by Board of Trustees, composed of parents, teachers, and students themselves. Private schools are legal entities of private law, and receive a general education license from the Ministry of Education and Science. In Georgia, for-profit, nonsectarian schools make up 92 % of the total private schools, while only 8% of them are religiously affiliated, mainly Christian Orthodox (MoES, 2016). Private schools are required to abide by certain conditions established by the Ministry (Law on General Education, 2004). The Georgian National Educational Curriculum is quite centralized, mandating 75% of the academic subjects as compulsory for every public as well as private school, leaving only 25% of elective courses to the discretion of each individual school (MoES, 2016).

The central effort of the extensive education reforms started in 2003 was the introduction of a nationwide school voucher plan, which allowed all students to use public vouchers at any public or private school. At the initial stage, public and private schools were equally funded by the central budget based on the number of enrollees and the standardized base voucher. This arrangement, however, gradually morphed into an approach that favored public schools.

3.2 Voucher Scheme as an Instrument for School Financing

Under the initial design (2005-2009) of the voucher model every public and private school annually received the lump sum amount based on their enrollment. The funding distribution formula was very simple across the board: number of enrolled students multiplied by the government defined base voucher constituted the school revenue; this equally applied to public as well as private schools. There were only three distinct levels of the base voucher,

differentiated based on the geographical location of the school. The funding received through the voucher was appropriated to cover all the recurrent expenditures. Capital outlays remained the responsibility of the central government (MoES, 2005). Obviously, the fixed proportional link between the number of students and the base voucher favored larger schools, making them flexible enough to introduce innovative projects and advance the school environment, while budgets in small schools were mostly absorbed by the payroll and other immediate needs (Simonia, 2007).

This simplistic, single factor funding formula was amended a number of times starting in 2009. First, by integrating an enrolment multiplier, the Ministry decided to limit large schools from receiving excess funding (exceeding their basic recurring expenditures). The multiplier adjusted the base voucher, decreasing in value after a certain threshold of the number of enrolled students. Second, multipliers to factor in inclusive education and schools with multiple campuses were introduced. Lastly, the government defined a separate base voucher for private schools with a lower value, and no additional multipliers applied for them. These were first policy initiatives to signal that more students would no longer mean more revenue, altering the initial unfettered competition on the education marketplace. Looking at the dynamics of the number of private and public school (figure 1), one may assume that at the initial stage the Georgian universal voucher scheme created a marketplace driven by supply, demand, and consumer preference where "good" schools are better off while "inferior" schools go bankrupt (West, 1997).

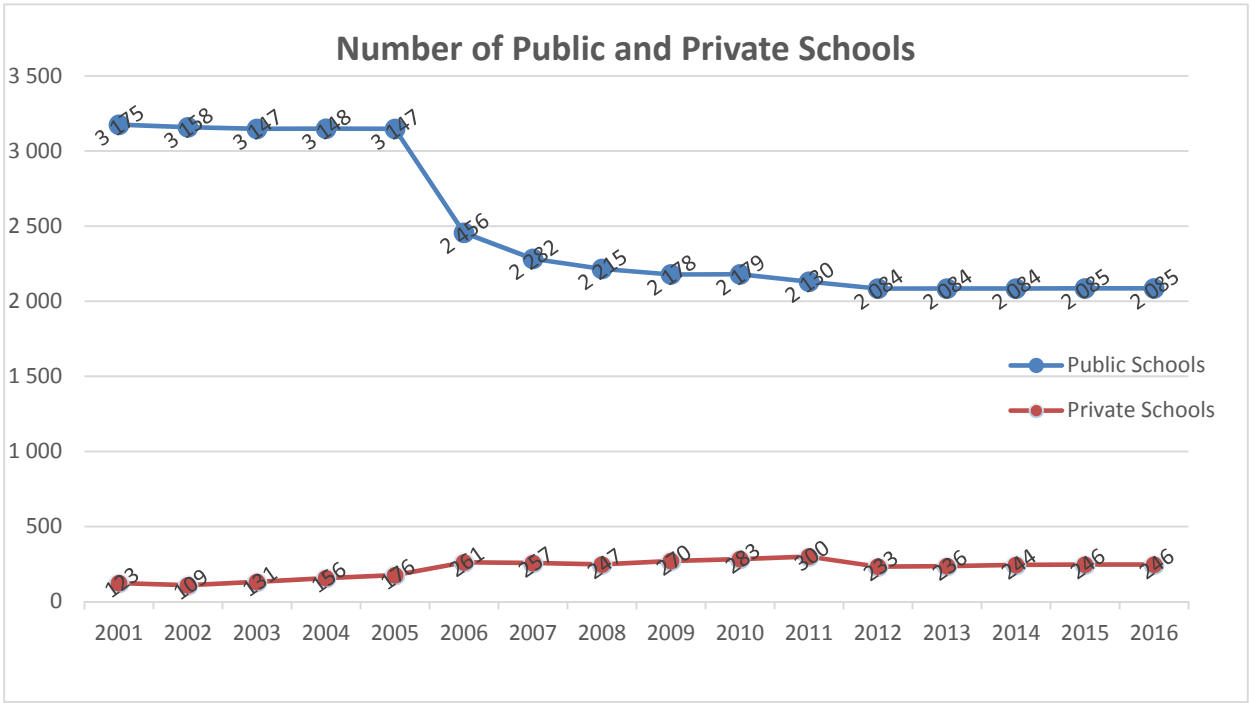

Figure 1. Number of public and private schools in Georgia, 2001-2016

Source: National Statistics Office of Georgia (2016).

In reality, however, the picture is deceptive and the true reason behind the sharp decrease is the "school optimization/consolidation" program implemented by the Ministry. Consolidation of public schools was undertaken extensively in 2004/05 with the aim of promoting the physical, human, and financial resources of schools in the face of the declining population of students in the country (PADECO, 2007). As a result, about 1000 schools were merged with other public schools. The Ministry considered that the number of schools was artificially inflated and through the consolidation it would be lessened to the optimal number (PADECO, 2007). Heczynski (2008) concluded that the Ministry conducted the optimization in preparation for the introduction of a voucher plan, and that by consolidating schools the Ministry had purposely reduced the number of "small" schools. He maintained that the voucher model is not seen as a market tool to identify and isolate weak schools as a result of competition, rather the artificial closure of small schools is a tool for a smoother introduction of the

voucher (Herczynski, 2008).

3.3 Choice System

The Georgian education reform eliminated school assignment restrictions. Before 2003, families were required to send their children to a neighborhood school that was assigned by the Ministry (PADECO, 2007). As in many other cases, by using personal political powers rich and influential families found ways to avoid this regulation and send their children to the school of their choice (Herczynski, 2008). Currently, school choice is expanded and students are free to attend the school they deem best. On the other hand, the number of places available at a particular school is limited and the selection is performed through a designated website on the basis of "first come first served" (MoES, 2016). Private schools are strictly selective, based on the students' academic performance and the ability of a family to cover the tuition fee. Consequently, even if a family selects a public school that meets their need, values, and interest, in the absence of transportation, sending a child to the school is often hard, if not impossible. Similarly, in the presence of "add-ons," private schools are not easily accessible for low income families.

Geographically, Georgia is a mountainous country with many sparsely populated villages and rural areas. Accordingly, about half of all public schools are located in mountainous villages and rural regions. Moreover, there are about 500 villages across the country, each operating only one public school (MoES, 2016). This geographical composition naturally precludes the expansion of school choice. Also, the composition of religious schools bears mentioning. There are over 20 licensed religious schools in Georgia that receive public vouchers, and all of them are Christian Orthodox schools, operating under the supervision of the Patriarchate of Georgia (MoES, 2009). Obviously, the homogenous composition of the religious schools limits freedom of choice of other religious groups residing in Georgia.

Overall, establishing a "full pledged" and fair competitive education marketplace in Georgia has been difficult as many underlining factors influence the process. To some extent, however, mainly in big cities, some degree of competition was created. In the next section, we will present evidence how the increased competition impacts on students' academic achievements and the quality of teaching as perceived by teachers and principals.

4. Method

4.1 Data

4.1.1 Site and participant selection

This analysis is largely based on a survey that was administered in Georgia in 2014 by Ilia State University. The first stage of the site selection was the identification of local schools where school principals would be surveyed. Importantly, to make the principal's sample representative, 10% of urban, rural and mountainous schools were selected from the list of all public schools. Also, to avoid uneven representation of "big" and "small" schools we took into consideration students' enrollment factor. Thus, the school selection was stratified so that to be proportionally representative of the school distribution by type of school, location and number of students. Finally, based on the stratified sampling, 70 urban 120 rural school and 100 mountainous school principals were selected.

For the teachers' selection, we employed connivance sampling. Therefore, teachers were randomly selected from the schools that were identified for the principal's survey. Thus, based on the connivance sampling we selected 150 urban, 120 rural and 100 mountainous school teachers. We believe that the sample of teachers is quite representative and it allows to capture main trends how the Georgian teachers view the school voucher model in terms of students' academic achievements.

Finally, the selection of both teachers and principals was based on the criterion that they should have had at least 10 years of working experience. This would ensure that they have some knowledge about the old system and thus they are able to judge the positive and negative aspects of both–pre-voucher and voucher systems.

4.1.2 Instrument

Structured questionnaires were elaborated separately for principals and teachers. Questionnaires were concise, with short questions phrased in a manner which was easy to understand. The questions were designed to identify teacher's and principal's perception on the voucher model as a market mechanism. Specifically, whether the voucher model generates competitive pressure and how this effects student academic achievement as well as the quality of teaching.

4.1.3 Measures

4.1.3.1 Dependent variables

This study sets out to measure the impact of competition on 1) the quality of teaching and 2) student academic achievement as perceived by teachers and principals. Specifically, teachers and principals were asked to assess how the quality of teaching at their schools has changed since the inception of the voucher model. Similarly, they were asked to evaluate the impact of the voucher model on the students' academic achievement/performance. Responses on both questions were constructed as follows: a) very positive, b) positive, c) no impact, d) negative, e) very negative. To avoid ambiguity and more accurately capture the direction of the impact we collapsed these answers into a polytomous measure with three levels (positive impact=0, no impact=1, negative impact=2). Also, we assume that the distances among the three categories are about equal, thus, we did not weight any of these categories.

4.1.3.2 Predictors

The major interest of the study is to evaluate how competition effects academic achievement and teaching quality. Therefore, the measure of competition is the main predictor. To evaluate how school principals and teachers perceive competition, they were asked whether they face some degree of competition. In the questionnaires two possible answers were constructed: a) yes, we face competition, b) no, we don't face competition. We turned these answers into a dichotomous variable with two levels (no competition=0, competition=1).

Ladd and Fiske (2003) raise the issue of validity when competition is measured as perceived by teachers and school principals as it does not explicitly capture the number of schools in a given district. However, they asserted that competition is a rich concept and not always identified by a structural measure such as number of schools. They also argued that competition for students is affected not only by public policies permitting parental choice of schools and by the number of nearby schools, but also by how families evaluate schools. Finally, they concluded that the structural measure of competition such as number of schools do not better reflect a particular competitive environment than the measure based on the perceptions (Ladd & Fiske, 2003). We consider that the measure of competition as perceived by teachers and principals accurately reflects the competition and competitive pressure, if any, present on the Georgian educational marketplace.

In addition to this measure of competition, we accounted for some confounding variables. First, we considered that school income may influence principals' perception on the relation between competition and students achievement. The principals of "big" schools may think that competition is a position force while the principals of "small" school may have totally opposite opinions. Therefore, we adjusted for the number of students and included it as a continuous variable in the principal's equation. We also considered that family income and years of teaching experience may influence teachers' opinions on the relation between competition and educational outcomes such as students' performance, and teaching quality. Hence, we accounted for teachers' family income and their teaching experience and included both as continuous variables in the teachers' equations.

4.2 Analytic Approach

This study seeks possible explanations regarding the extent to which school teachers' and principals' perception on students' academic achievement and the quality of teaching are associated with the competition present on the Georgian educational marketplace. To obtain these associations and draw inferences about the Georgian national school population we conduct the ordinal logistic regression analysis. By conducting the logistic regression analysis we examine how competition impacts on students' academic achievement and teaching quality as perceived by teachers and principals. The ordinal logistic approach is appropriate since our major interest is to capture the direction how the explanatory (competition) variables affect the outcome variables (quality teaching, achievement).

We conduct an initial analysis, Model 1, to obtain the strength of the unadjusted relationship between competition and students' academic achievement as well as between competition and teaching quality as perceived by teachers and principals. We then, in our Model 2, control for the number of students in principals equation, and family income and years of experience in teachers equation. Importantly, the models are constructed separately for village and city schools. The results of our analyses are presented in the findings section of this paper.

5. Results

We present both descriptive and analytic results. Descriptive results include a general picture on the presence of competition in cities, villages and mountainous regions as assessed by teachers and principals. Also, in the description section, general views - how the voucher impacts students' academic achievement and teaching

quality is presented. We then present the results of our regression analyses in two parts. We first discuss the unadjusted relationship between competition and academic achievement as well as between competition and the quality of teaching. Then we display the results of our second regression models which account for the number of students, teacher's family income and years of working experience.

5.1 Descriptive Data

Table 1 displays teachers' and principals' evaluations whether their schools face competition. On average, both teachers and principals consider that competition is present among city schools. Over a half of the city school principals and teachers think that their schools face some degree of competition. However, the perception of competition among village school teachers and principals is quite low. Only 32% of principals and 31% of teachers believe that they work in a competitive environment. Not surprisingly, competition is almost not present among mountainous schools. As the survey reveals, only 8% to 10% of mountainous schools operate in a competitive climate. For this reason, mountainous schools were not considered in our regression analysis.

Table 1. Distribution of the responses about competition as perceived by principals and teachers, by schools' locations

Competition	City Schools		Village Schools		Mountainous Schools	
	Principals n=70	Teachers n=150	Principals n=110	Teachers n=120	Principals n=60	Teachers n=100
Yes (%)	52	56	32	31	8	10
NO (%)	48	44	68	69	92	90

According to our analysis, 37% of city school principals think that the inception of voucher program positively impacted the quality of teaching. A slightly less number of principals, 32%, recognize the positive impact of the voucher on the students' academic performance. Conversely, a very few city school principals do not attribute the teaching quality and student achievement to the voucher. Importantly, over a half of the principals in cities consider that the voucher had neither positive nor negative impact on the student's academic achievement. Similarly, 46% of them do not see any impact of the voucher on teaching quality.

As displayed in Table 3, a comparatively higher number of principals in villages think that vouchers adversely affected on both teaching quality and students' achievement. Specifically, 34% of village school principals referred to the voucher as having a negative impact on teaching quality, and 38% of them - on student achievement. As expected, only about a one quarter of principals think that the voucher had a positive effect on academic achievement, and 28% of them see the voucher as having positive impact on teaching quality. Similar to the cities, most of the village principals consider that the voucher had impact on neither academic achievement nor teaching quality.

Table 2. Principals' perception on the impact of competition on the quality of teaching

Impact area	City school principals n=70			Village Schools principals n=110		
	Positive impact	No Impact	Negative impact	Positive impact	No Impact	Negative impact
Quality of teaching (%)	37	46	17	28	38	34
Student's Academic performance (%)	32	53	15	18	44	38

Table 3 displays the analysis of the teachers' perception of the voucher's impact on teaching quality and academic achievement. Almost a half of the city teachers believe that students' academic achievement was increased as a result of the voucher program, and 36% of them agree that the voucher improved the teaching quality. On the other hand, only a one fifth of city teachers think that the voucher worsened both teaching quality and academic achievement. Similar to principals, a fairly high number of city teachers consider that voucher had no impact on teaching quality and academic achievement.

Similar to the city teachers, most of village teachers think that the inception of the vouchers had a positive impact on academic achievement and quality teaching. The survey reveals that 40% or more teachers believe that the vouchers led to a better student performance and better teaching quality. On the other hand, over 20% of the

teachers do not believe the positive impact of the voucher. Finally, nearly 40% of teachers consider that the voucher model has neither a positive nor a negative impact.

Table 3. Teachers' perception on the impact of competition on students' academic achievement

	City School Teachers n=150			Village Schools Teachers n=120		
Impact area	Positive impact	No Impact	Negative impact	Positive impact	No Impact	Negative impact
Quality of teaching	36	42	22	40	37	23
Student's Academic performance	48	31	21	44	34	22

5.2 Analysis

We begin our analysis by presenting the unadjusted relationship between competition and quality of teaching as perceived by school principals. As displayed in table 4, our logistic regression analysis suggests that there is no significant relationship between competition and quality teaching ($p>0.5$). Although the coefficients have negative signs suggesting a negative effect of competition on the teaching quality, the coefficients are not statistically significant and the actual effect might be zero due to the error terms. In our Model 2 we introduced the variable of number of students enrolled in the school as a covariate. However, the overall picture has not changed. Again, after controlling for the number of enrollees, the competition (as a predictor for the quality of teaching) variables remain negative, but statistically insignificant. In the next model we will consider associations between competition and students' academic achievement as perceived by school principals.

Table 4. Principals' perception on the impact of competition on the quality of teaching

Characteristics	City Schools (n=70)		Village Schools (n=110)	
	Model 1	Model 2	Model 1	Model 2
Competition	-.168	-.227	-.424	.439
Number of students	–	-.006	–	.043
Test of parallel lines (X^2)	.018	1.87	.590	6.783*

*$p<0.05$. Dependent variable: how the quality of teaching has changed since the inception of the voucher model (0=negative, 1=no impact; 2=positive)

As displayed in Table 5, the model 1 explains the unadjusted relationship between competition and students' academic achievement as perceived by principals. Unlike the previous model, now the competition coefficient for city school principals becomes negative and statically significant ($p<0.05$). Therefore, we can conclude that the Georgian city school principals believe that competition is negatively associated with students' academic achievement. Although it is somewhat difficult to accurately interpret the magnitude of the coefficients in the ordinal logistic regression, our finding can be interpreted as follow: 1 unit increase in the competition variable (from no competition to competition) is associated with the decrease in expected ordered log odds by 0.81 as you move to the next higher category of academic achievement (Note 2). Put differently, city school principals are 0.81 times more likely to believe that the competition has a negative rather than a positive effect on students' academic achievement.

In our second model, we accounted for the number of students enrolled at the school. Importantly, the competition coefficient remains negative and becomes ($p<0.01$) larger. To interpret again: after adjusting for enrollment, 1 unit increase in the competition variable is now associated with the decrease in expected ordered log odds by 1.13 as we move to the next higher category of students' achievements. In other words, city school principals are 1.13 times more likely to believe that the competition negatively impacts students' academic achievement. Surprisingly, the competition variable for village school principals is not statistically significant.

Table 5. Principals' perception on the impact of competition on students' academic achievement

Characteristics	City Schools (n=70)		Village Schools (n=110)	
	Model 1	Model 2	Model 1	Model 2
Competition	-.811*	-1.13**	-1.01	-0.001
Number of students	–	-.017*	–	-.060*
Test of parallel lines (X^2)	.016	4.90	.394	.457

*p<0.05, **p<0.01 Dependent variable: how students achievement improved since the inception of the voucher model (0=negative, 1=no impact; 2=positive)

Our next analysis involves teacher's perceptions of the impact of competition on the quality of teaching. The teacher's equations consistently show that competition negatively affects teaching quality. This finding is almost equally significant across the school location. The first models, in table 6, describe the unadjusted relationship between competition and teaching quality for village and city schools. In both instances the competition variables are negative and statistically significant. However, we should note that the assumption of parallel lines in the village teachers' equation is violated. Thus, even though the competition variable is significant its actual effect might be different. For this reason, we will not interpret the results for village schools. For city schools, the result suggests that 1 unit increase in the city schools' competition variable (from no competition to competition) is associated with the decrease in expected ordered log odds by 2.59 as you move to the next higher ordered category of quality teaching (Note 3). Yet another way of interpreting this result is: city school teachers are 2.59 times more likely to believe that the competition has a negative rather than a positive effect on students' academic achievement.

Further, in our model 2, we included teacher's family income and years of teaching experience. Notably, holding family income and working experience constant, the competition coefficients remained negative, statistically significant and became larger for both village and city schools. Thus, we can safely conclude that the Georgian teachers believe that competition negatively affects the quality of teaching. Next, we will consider what teachers think about the relation between competition and academic achievement.

Table 6. Teachers' perception on the impact of competition on the quality of teaching

Characteristics	City Schools (n=150)		Village Schools (n=120)	
	Model 1	Model 2	Model 1	Model 2
Competition	-2.59***	-2.65***	-1.83***	-1.98***
Family Income		.000		-.002
Teaching Experience (years)		.143***		.167***
Test of parallel lines (X^2)	.998	2.84	4.85*	7.13

*p<0.05; **p<0.01; p<0.001 Dependent variable: how the quality of teaching has changed since the inception of the voucher model (0=negative, 1=no impact; 2=positive)

Table 7 displays the relationship between competition and students' academic achievement assessed by school teachers. As before, we first consider the unadjusted relationships between competition and academic achievement and then, in our model 2, we will employ an augmented equation. Similar to the previous results, our first models suggest that there is a significant negative association between the explanatory (competition) and the outcome variable (academic achievement) for both – city and village schools. Because the assumption of parallel lines in the city equation is violated we will not interpret this result. For the village schools, the negative sign and a fairly large value of the competition variable suggest that village teachers strongly believe that competition deteriorates academic achievements.

To better reflect teachers' perceptions and more accurately interpret the results, we accounted for teachers' family income and years of teaching experience in our model 2. Importantly, the competition coefficients almost doubled. These findings suggest that a one unit increase in the competition variable is related with the decrease in expected ordered log odds by 4.91as you move to the next higher category of academic achievement. Thus, city school teachers are 4.91 times more likely to think that competition has a negative, rather than a positive

effect on students' academic achievement. The result for the village schools is similarly interpreted.

Table 7. Teachers' perception on the impact of competition on students' academic achievement

Characteristics	City Schools (n=150)		Village Schools (n=120)	
	Model 1	Model 2	Model 1	Model 2
Competition	-2.67**	-4.91***	-2.22***	-3.224***
Family Income		-.003		-.007*
Teaching Experience (years)		.456***		.298***
Test of parallel lines (X^2)	6.29*	3.58	3.27	3.94

*p<0.05, **p<0.01, ***p<0.001Dependent variable: how students achievement improved since the inception of the voucher model (0=negative, 1=no impact; 2=positive)

6. Conclusions

Our results provided clear answers to the initial research questions: Teachers and principals perceive that competition among schools does not encourage the creation of an improved teaching and learning environment. This finding is consistent across the school location. Thus, the market based solution to education, and competitive pressure has not been seen positively by school principals and teachers. Our evidence suggests that school principals and teachers do not view competition as a force or stimulus towards better quality teaching and improved students' academic achievement.

By introducing the original full-scale voucher model in 2005, the Georgian government hoped to promote competition among public and private schools that in turn would push schools to operate in a cost-effective way. This theoretical reasoning could not be realized in practice, simply, because of the geographical and demographical factors. The fact that 50% of all public schools operate in rural and mountainous regions made them "natural monopolists" and the limited number of students in those regions made it impossible to establish competition and competitive pressure. We note that after amending the original model, the government excluded such schools from the competitive voucher scheme.

Finally, considering the movement towards school choice and increased competition across the globe, it seems unrealistic to anticipate that expanding the market and increasing competition among schools would yield gains in school effectiveness.

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Notes

Note 1. Significant at $p<0.08$ level.

Note 2. We have 3 categories: 1) negative impact; 2) no impact; 3) positive impact.

Note 3. Here, for the quality of teaching we also have 3 categories: 1) positive impact, 2) no impact, 3) negative impact.

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Examining the Relationship between Pre-Service Teachers' Critical Thinking Disposition, Problem Solving Skills and Teacher Self-Efficacy

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Abstract

The aim of this study was to examine the relationships between the pre-service teachers' critical thinking disposition, problem-solving skills and self-efficacy beliefs. The participants of the study were 519 pre-service teachers from Afyon Kocatepe University, Education Faculty. Critical Thinking Disposition, Problem Solving Inventory, and Teacher Self-efficacy Scale were used to collect the data. Arithmetic mean, Pearson Product-Moment Correlation Coefficient and Multiple Linear Regression Analysis were employed in data analysis. The results of the study revealed that the pre-service teachers' critical thinking disposition was low, problem-solving skills were moderate and teacher self-efficacy perceptions were quite adequate. However, the critical thinking disposition and problem-solving skills revealed significant positive correlations with all dimensions of teacher self-efficacy. An important finding is that critical thinking disposition and problem-solving skills were positive and significant predictors of all sub-dimensions of teacher self-efficacy beliefs.

Keywords: self-efficacy, critical thinking, problem-solving skills, pre-service teachers

1. Introduction

Teacher self-efficacy beliefs are teachers' beliefs on how learners can learn and improve their achievements (Bergman, McLaughlin, Bass, Pauly, & Zellman, 1977; Ruble, Usher, & McGrew, 2011). The high level of teachers' self-efficacy perceptions leads to positive changes in many educational outcomes. In this context, it is seen that teachers' beliefs about their own qualifications make them increase the quality of education and overcome the problems they encounter (Main & Hammond, 2008; Özerkan, 2007; Tschannen-Moran, A. W. Hoy, & W. K. Hoy, 1998; Woolfolk & Hoy, 1990). Results of positive developments in self-efficacy led to improvements in education and training, which gave rise to investigation of this concept in relation to different concepts. Critical thinking disposition and problem-solving skills are among these concepts. There are a number of studies investigating the relationship between critical thinking skills and self-efficacy (Zangenehvandi, Farahian & Gholami, 2014; Kezer, Oğurlu, Akfırat, 2016; Manalo, Kusumi, Koyasu, Michita & Tanaka, 2013; Phan, 2009; Srisawad, Ratanaolarn & Kıddee, 2016; Varandi, Mehrali, 2013;Dehghani, Pakmehr & Malekzadeh, 2011) and relationship between problem solving skills and self-efficacy (Altunçekiç, Yaman, Koray, 2005; Aylar & Aksin, 2011; Kesicioğlu & Güven, 2014; Yenice, 2012). These studies show that critical thinking disposition and problem-solving skills are related to self-efficacy of teachers. However, studies on the predictive power of problem-solving and critical thinking disposition over self-efficacy tend to be limited (Kesicioğlu & Güven, 2014; Zangenehvandi, Farahian, & Gholami, 2014). Problem solving is to overcome a difficulty and critical thinking is to find the ideas to overcome these difficulties (Seferoğlu & Akbıyıkık, 2006). Exposing the predictive power of problem-solving skills and critical thinking disposition over self-efficacy of teachers may contribute to determining effective policies for problem solving and the development of critical thinking disposition. In addition, this study can provide researchers with an insight into individual characteristics that explain self-efficacy. For this reason, the relationship between critical thinking, problem-solving skills and self-efficacy, and predictive power of critical thinking and problem solving skills as independent variables on

self-efficacy of teachers has been discussed in this study.

Critical thinking and problem solving are thinking skills, and thus, they require cognitive processes (Beyer, 1988; Özden, 2000). The common point of thinking skills is problem solving and decision making (Beyer, 1988). Problem-solving is thinking critically and producing a solution by processing information (Seferoğlu & Akbıyık, 2006). Gathering and encoding of data related to an event, explaining a problem with similarities and differences, formulating a solution plan, using knowledge and principles, and evaluating possible solutions require cognitive processes (Kapa, 2001). Cognitive processing ability can be said to be an important factor in an individual's performance when treated as his/her ability to process complex information (Truxillo, Seitz & Bauer, 2008). Thinking about ideas, being aware of ideas, performance, memory and competence acquisition are among fundamental elements in problem solving (Hudlicka, 2005). The ability of individuals to perform a job successfully is due to their cognitive processing (Chen, Casper & Cortina, 2001; Cormier, Pickett-Hauber & Whyte, 2010). In the development of self-efficacy, it is important that individuals can use their own cognitive strategies and manage themselves in different dimensions (Chemers, Hu & Garcia, 2001). One of the core competences of self-efficacy is to operate cognitive processes to predict problems and decide how to deal with them (Bandura, 1989). Cognitive processes can lead to an increase in the level of self-efficacy by learning how to behave in difficult, complex and unexpected situations to deal with them using critical thinking (Gloudemans, Schalk & Reynaert, 2013). A good level of adaptation to problem-solving processes helps to better manage the work and achieve goals more easily (Bandura, 1986). Besides, high levels of self-efficacy can facilitate individuals' solving their problems (Bandura, 1977), and in this respect, solving problems is influential in path to success in their life (Belzer, D'Zurilla & Maydeu-Olivares, 2002).

1.1 Critical Thinking Disposition

Critical thinking refers to individuals' questioning their thoughts on a rational basis, and reflecting and thinking reasonably by focusing on decision making (Ennis, 1962). Critical thinking can be expressed to show the accuracy and certainty of knowledge (Beyer, 1987). It is the refinement and orientation of thought in a particular systematicity, and the realization of thinking in a logical framework (Paul & Elder, 2008). Critical thinking is to make individuals be aware of their thoughts, evaluate them, interpret the thought processes of others (Cüceloğlu, 1994), rate a problem in terms of validity and consistency by using certain standards in understanding and analyzing the problem (Kazancı 1989). Critical thinking occurs when one thinks about his/her own thinking by providing standards of clarity, accuracy, importance and relevance, proficiency, depth, breadth, and certainty (Nosich, 2012). In other words, critical thinking emphasizes the ability to understand the thoughts, make sense of the ideas, and make logical decisions.

Critical thinking has some peculiar features. It requires that people think about their own thinking. They must judge their own ideas that meet certain logic criteria, deal with real problems, and evaluate certain rules in a logical framework. Asking questions, solving questions and analyzing problems are important criteria in critical thinking. The main goal is to think and solve the problem instead of making negative conclusions (Nosich, 2012). It can be said that the basis of critical thinking is important in terms of evaluating, interpreting and considering different perspectives on the issues considered in the application of different features of thinking.

Critical thinking skills and critical thinking disposition are among the topics covered under the concept of critical thinking. Disposition and skill are two interrelated concepts. Critical thinking includes concepts of skill and disposition (Dam & Volman, 2004; Facione, 1990). Critical thinking skills refers to the ability to think critically through certain mental methods. Critical thinking disposition is the desire and motivation of the individual to think critically (Zhang, 2003). Critical thinking disposition is to make decisions and solve problems in accordance with consistent internal motivations (P. A. Facione, N. C. Facione, & Giancarlo, 1996). Critical thinking disposition is necessary for critical thinking skills (Norris, 1994). It can thus be stated that these two concepts cannot be separated from each other by clear lines, but have a pattern in the context of cause and effect.

Critical thinking disposition can be dealt with in different dimensions. Ennis (1985) refers to critical thinking disposition as searching for the cause, using reliable data, looking at the problem holistically, focusing on the main problem, putting together complex parts and being open-minded. According to Tishman, Jay and Perkins (1993), critical thinking disposition is to be open-minded, find problems, conceptualize problems, plan and develop strategies, understand, seek the truth, work and reflect on mental processes. Tishman, Jay and Perkins (1993) describe critical thinking disposition as being open-minded, finding problems, conceptualising problems, developing plans and strategies, understanding, realizing, and working with mental processes. The critical thinking disposition in the context of this study is expressed by P. A. Facione, N. C. Facione, and Giancarlo (1996) as being analytical, systematic and open-minded, having cognitive maturity, curiosity and self-confidence,

and searching for truth. Analyticity is the preparation for problems that may arise, identifying the causes and using the necessary data for problem solving purposes. Systematicity is to be focused, resolute, organized and planned while solving a problem. Open-mindedness is about being open to different views, approaches and views, and evaluating others' views in the decision-making phase. Cognitive maturity is described as seeing the level of complexity in the problems and acting rationally. Curiosity is the excitement of learning, and learning of people who are not expecting a response. Self-confidence is a guide to the intelligence of a person and to the rational decision-making of others. The convergence of these qualities provides an overall assessment of the disposition to think critically. Searching for truth can be defined as having intellectual determination, valuing different ideas, trying to reach the right information, seeking reasons and evidence about the truth, and acting objectively against different ideas.

1.2 Problem-Solving Skills

A problem is a conflict situation that arises when the attainment of a goal is prevented (Morgan, 1991), the need to react to situations that interfere with balance and dissonance (D'Zurilla & Nezu, 1987), something dissonant with internal and external demands (Heppner & Krauskopf, 1987). It prevents individual or organizational goals from being realized for any reason (Demirtaş & Güneş, 2002). Problem solving is concerned with thinking processes that reveal individuals' point of view when a problem occurs. In this case, problem solving can be explained by the cognitive strategies determined by individuals. At the same time, these cognitive strategies can be applied to other situations after learning them (Gagné, 1985). Individuals' thoughts, feelings and behaviors related to individual problems in everyday life are related to problem-solving skills (Heppner & Krauskopf, 1987).

Problem-solving skills require certain qualities that are coping with problems, solving problematic situations, evaluating the cognitive processes, understanding and solving a problem completely (Heppner, Baumgardner & Jakson, 1985; cited in Güçlü, 2003). At the same time, in solving a problem, different steps must be fulfilled. These steps can be described as follows: *(i)* defining the problem correctly, understanding of its structure in order to set goals for the solution, *(ii)* identifying as many different solution paths as possible, *(iii)* deciding on the most appropriate solution, *(iv)* implementing solution paths and evaluating the results obtained in a logical framework (Çam & Tümkaya, 2007). Besides, problem-solving confidence, approach-avoidance and personal control are important components of problem solving skills. Problem-solving confidence is the belief in self-assurance and problem-solving competence in problem solving. Approach-avoidance is to observe problem-solving methods and evaluate different ways of solution and search for different way out. Personal control is the management of behaviors and feelings while solving a problem (Heppner & Baker, 1997). Individuals need to have certain important competencies in order to solve problems. These competencies are as follows: *(i)* coping with both problem-oriented and emotion-oriented situations *(ii)* competencies that can identify problems and putting forth alternatives about them *(iii)* cognitive processes that require chain thinking, *(iv)* self-confidence in solving a problem (Heppner & Baker, 1997).

1.3 Teacher Self-Efficacy

Self-efficacy is perceptions and beliefs of an individual about how to manage a situation, complete a task, and obtain the desired results (Bandura, 1994). Teacher self-efficacy beliefs are the beliefs of teachers about how to improve their students' learning and achievement (Bergman, McLaughlin, Bass, Pauly & Zellman, 1977; Ruble, Usher & McGrew, 2011). Low levels of teacher self-efficacy beliefs cause problems in the accomplishment of educational objectives (Battersby & Cave, 2014; Henson, 2001; Tschannen-Moran & Woolfolk-Hoy, 2001).

Personal or environmental factors seem to play a role in developing self-efficacy, which is seen as important in education. According to Bandura (1977), the first factor is individuals' believing in their competence regarding life experiences, and evaluating themselves more positively. The second factor is modeling others who have successful experiences, and applying them in life by making inferences. The third is receiving verbal encouragement and support from others to do a task. Finally, individuals' physical and emotional states can affect their self-efficacy beliefs. In this regard, self-efficacy of teachers is related to their feelings of competence in their classes (Marri, Ahn, Fletcher, Heng & Hatch, 2012), the quality of classroom teaching (Zee & Koomen, 2010), student behaviors, professional experience (Egyed & Short, 2006), job satisfaction (Viel-Ruma, Houchins, Jolivette & Benson, 2010) and accountability pressure (Ford, Sickle, Clark, Fazio-Brunson & Schween, 2014).

According to Tschannen-Moran and Woolfolk-Hoy (2001) teacher self-efficacy is considered as a three-dimensional structure. These are efficacy for student engagement, efficacy for instructional strategies, and efficacy for classroom management. Efficacy for student engagement is a teacher's capacity to make students engage in different activities and believe in that they could manage them. Efficacy for instructional strategies

reveals the ability of teachers to use different techniques to develop and evaluate student learning. Efficacy for classroom management refers to teacher perceptions that they can create a peaceful learning atmosphere within the classroom.

Determining the relationship between pre-service teachers' self-efficacy, critical thinking disposition and problem-solving skills, and revealing variables that predict teacher self-efficacy is of significance in terms of developing teacher self-efficacy. Pre-service teachers are thought to be more effective teachers in the future, depending on their critical thinking disposition, problem-solving skills, their beliefs about student learning and their ability to improve student achievement. In this context, the following research questions were addressed in the study.

1) What are the levels of pre-service teachers' perception of self-efficacy, critical thinking disposition and problem-solving skills?

2) Are there significant correlations between pre-service teachers' self-efficacy, critical thinking disposition, and problem-solving skills?

3) Are pre-service teachers' critical thinking disposition and problem solving skills significant predictors of teacher self-efficacy dimensions?

2. Method

In this section, research design, participants, instruments and data analysis are explained.

2.1 Research Design

This study was designed with a correlational research model to examine the relationship between pre-service teachers' critical thinking disposition, problem solving skills, and teacher self-efficacy. Dependent variables of the research are efficacy for student engagement, efficacy for instructional strategies and efficacy for classroom management, which are sub-dimensions of teacher self-efficacy. The independent variables are critical thinking disposition, and problem solving skills.

2.2 Participants

The participants of the research were a total of 519 pre-service teachers studying at Afyon Kocatepe University, Faculty of Education, in the 2016-2017 academic year. The average age of the participants was 20.13, 379 (73%) were female and 140 (27%) were male. One hundred eighty-six (36%) of the participants were first-year students and 333 (64%) were third-year students.

2.3 Instruments

A questionnaire with four sections was used to gather the data. The first section related to the demographic characteristics of the participants included gender, age, subject area and year of study. The remaining sections were the California Critical Thinking Disposition Inventory, the Problem Solving Scale, and the Teacher Self-Efficacy Scale, respectively

2.3.1 California Critical Thinking Disposition Inventory

This scale, which was developed by P. A. Facione, N. C. Facione, and Giancarlo (1998) and adapted to Turkish by Kökdemir (2003), measures critical thinking disposition. In the instrument consisting of 51 items and 6 sub-dimensions, a 6-point grading scale with options randing from "(1) Strongly disagree" to "(6) Strongly agree" is used. The variance explained in the whole scale is 36.13%. The scale includes the dimensions of open-mindedness, self-confidence, inquisitiveness, truth-seeking, systematicity and analiticity. As the score on the inventory goes up, the level of critical thinking disposition increases. When the inventory was considered as a whole, a score less than 240 was evaluated as low, while a score higher than than 300 was evaluated as high. The evaluations for this study were based on the mean score. Therefore, a mean score of 240 points shows that individuals' critical thinking dispositions are low. The Cronbach's Alpha coefficient calculated for the scale by Kökdemir (2003) was found to be.88. This scale was used in different studies and the Alpha coefficient's reliability values of scale were.80 and above (Kantek, Öztürk, & Gezer, 2010; Kezer, Ogurlu, & Akfırat, 2016). In this study, all dimensions of the scale were used in order to determine the disposition of the teacher candidates in thinking critically. The Alpha coefficient's reliability of Item 51 was very low, and when this item was excluded, the reliability was expected to increase. For this reason, this item was excluded from the analysis by looking at item-total correlations. The Cronbach's Alpha coefficient calculated for the scale in the present study was found to be.82. Sample items from the scale included: "Compulsory courses in university are a waste of time", "You can define me as a reasonable person", "It is easy for me to organize my thoughts".

2.3.2 Problem Solving Inventory

This scale was developed by Heppner and Petersen (1982) and adapted to Turkish by Şahin, Şahin, and Heppner (1993). The variance explained in the scale is 50.1%, and it consists of 32 items. The sub-dimensions are Reflective Approach, Evaluative Approach, Self-Reliable Approach, Planned Approach, Quick Approach, and Abstention (Skeptical) Approach. A 6-point rating scale with options ranging from "(1) Strongly disagree" to "(6) Strongly agree" is used. High scores in the scale shows that individuals perceive themselves as inadequate in problem solving skills, show avoidance-approaching behavior and do not feel personal control (Şahin, Şahin & Heppner, 1993). Scores in the scale range between 32-192. In Şahin, Şahin and Heppner (1993), the reliability of the whole scale was found as.88. This values is reported to be above 80% in different studies (Altun, 2015; Oğuztürk, Akça, & Şahin, 2011). In the present study, the scale was used instead of its dimensions in order to determine the problem solving skills of the pre-service teachers. The reliability coefficients of Items 3, 9, 21, and 23 were very low, and when these items were excluded, the reliability of the scale would increase. In this sense, considering the item-total correlations, these four items were excluded from the analysis which was carried out with 28 items. The Cronbach's Alpha coefficient for this scale was.83 in this study. Sample items from the scale include: "I consider next steps when I encounter a problem", "I compare the final result with the result I have expected while solving a problem", "I am not sure that I can solve a problem when I see one".

2.3.3 Teacher Self-Efficacy Scale.

The scale was developed by Tschannen-Moran and Woolfolk (2001) and adapted to Turkish by Çapa, Çakıroğlu and Sarıkaya (2005). Tschannen-Moran and Woolfolk (2001) reported that the variance explained for each sub-dimension varied between 43% and 58%. The scale consists of 24 items in 3 sub-dimensions. A 9-point ratins scale is used which has options ranging from "(1) Insufficient" to "(9) Very good". Low scores in the scale indicate low competence perception, whereas high scores indicate high perception of competence. The dimensions of the scale are (1) efficacy for student engagement, (2) efficacy for instructional strategies, and (3) efficacy for classroom management. There are 8 items in each dimension. Çapa, Çakıroğlu and Sarıkaya (2005) reported the Cronbach's Alpha coefficients as.82 for efficacy for student engagement,.86 for efficacy for instructional strategies,.84 for efficacy for classroom management, and.93 for the whole scale. When reliability of the scale was tested for the present study, Cronbach's Alpha coefficient was found to be.86 for efficacy for student engagement,.89 for efficacy for instructional strategies and.88 for efficacy for classroom management. The reliability value of the whole scale was .95. Sample items for these dimensions are as follows: (efficacy for student engagement) "How much can you do to get through the most difficult students?", (efficacy for instructional strategies) "How well can you respond to difficulty questions from your students?" and (efficacy for classroom management) "How well can you respond to defiant students?".

2.4 Analysis of Data

The data were first examined for missing or incorrect values, outliers and multiple changes. The research questions were then analyzed. First, missing values were determined and average values were assigned to them. Multi-collinearity, VIF, tolerance values were examined for the relationships between the variables. There were no tolerance near zero and no VIF higher than 10 according to the analysis. Correlation values between predictor variables were examined. Correlations between predictor variables were found to be lower than.70. When assessed together with other assumptions, it was seen that there was no multi-collinearity problem. If the tolerance value is less than 20, the VIF value is greater than 10, the CI value is higher than 30, and correlations between the independent variables are.80 and above, multicollinearity may be in play (Büyüköztürk, 2010). The values of skewness and kurtosis of the data were between -1 and +1 or they had close values. It can be said that data are close to or far from normal distribution depending on whether the skewness and kurtosis values are between (+1) and (-1) (Şencan, 2005). Hence, it can be stated that the data of this study was close to normal. In the analysis of the research questions, the arithmetic mean of the scores obtained from critical thinking disposition, problem solving and teacher self-efficacy scale were calculated. Pearson Product-Moments correlation coefficient (r) was used to determine relationships between the variables. In critical thinking disposition, as the scale score increases, critical thinking disposition also increases. On the other hand, in problem solving skills, as the scale score increases, the perception of competence to solve problems decreases. In this respect, the negative relationship between these two scales suggests that problem-solving skills will actually increase with critical thinking disposition. Multiple Linear Regression Analysis was performed to determine the predictive power of critical thinking disposition and problem solving skills over teacher self-efficacy. In the analyses, critical thinking disposition and problem-solving skills were predictor variables while teacher self-efficacy was the predicted variable. In interpreting the regression analyzes, the standardized Beta (β) coefficients and t-test results were examined for their significance. The significance level was set at.05 in the

analyses.

3. Results

In this section, mean and standard deviation values of pre-service teachers' critical thinking disposition, problem solving skills and teacher self-efficacy perceptions are presented. These are followed by the results of correlation and regression analyses.

3.1 Means, Standard Deviations and Correlations between the Variables

In Table 1, means, standard deviations, and correlations between the variables are presented.

Table 1. Correlation matrix for critical thinking disposition, problem-solving skills and teacher self-efficacy

Variables	$\overline{X}$	S	1	2	3	4	5	6
1. Critical thinking disposition	216.27	20.79	1					
2. Problem solving skills	122.82	15.00	.67**	1				
3. Efficacy for student engagement	54.64	8.79	.39**	.39**	1			
4. Efficacy for instructional strategies	54.14	9.51	.41**	.39**	.82**	1		
5. Efficacy for classroom management	54.61	9.42	.33**	.38**	.77**	.79**	1	
6. Whole scale [teacher self- efficacy]	163.39	25.82	.40	.42	.93	.94	.92	1

** p <.05

As is seen in Table 1, the mean score of the pre-service teachers' critical thinking disposition was 216.27. A score lower than 240 means a low level of critical thinking disposition. Therefore, the teachers' critical thinking disposition was low. Their mean score of problem-solving skills was 122.82. High scores from problem solving skills show that individuals perceive their problem-solving skills at a moderate level. The pre-service teachers' mean scores in efficacy for student engagement, efficacy for instructional strategies and efficacy for instructional strategies, which are the dimensions of teacher self-efficacy, were 54.64, 54.14 and 54.61, respectively. The mean score of the whole scale was 163.39. The pre-service teachers' self-efficacy scores were found to be close to one another. The low score from the scale indicates low efficacy perception, whereas the high score indicates high perception of efficacy. The pre-service teachers perceived themselves at a fairly adequate level in self-efficacy considering their scores from the scale and its dimensions.

Table 1 shows the relationship between critical thinking disposition, problem solving skills and teacher self-efficacy of pre-service teachers. There was a significant positive relationship (r =.67, p <.05) between pre-service teachers' critical thinking disposition and problem solving skills. As the critical thinking disposition increases, the level of problem solving skills increases. Critical thinking disposition positively correlated with efficacy for student engagement (r=.39, p <.05), efficacy for instructional strategies (r =.41, p <.05), and efficacy for classroom management (r=.33, p <.05). Teacher self-efficacy positively correlated with critical thinking disposition (r =.40, p <.05). Problem solving skills positively correlated with efficacy for student engagement (r =.39, p <.05), efficacy for instructional strategies (r =.39, p <.05), and efficacy for classroom management (r =.38, p <.05). Teacher self-efficacy (all dimensions) positively correlated with problem solving skills (r =.42, p <.05).

3.2 Predictors of Teacher Self-Efficacy

The results of multiple linear regression analysis predicting teacher self-efficacy by critical thinking disposition and problem solving skills are given in Table 2.

Table 2. Results of regression analysis predicting teacher self-efficacy

Variables	Teacher self-efficacy dimensions											
	Student engagement[a]			Instructional strategies[b]			Classroom management[c]			Whole scale[d]		
	β	t	p	β	t	p	β	t	p	β	t	p
Constant		6.62	.00		5.33	.00		7.60	.00		4.27	.00
Critical thinking disposition	.23	4.33	.00	.26	4.93	.00	.13	2.55	.01	0.22	4.28	.00
Problem solving skills	.23	4.38	.00	.21	4.06	.00	.29	5.42	.00	0.26	5.05	.00
	[a]R =.42, R^2 =.18. F = 57.94, p <.05			[b]R =.44, R^2 =.19. F =61.92, p <.05			[c]R =.40, R^2 =.16. F = 49.72, p <.05			[d]R =.45. R^2 =.20 F = 66.59, p <.05		

When Table 2 is examined, it is seen that both critical thinking disposition and problem solving skills have a significant relationship with efficacy for student engagement (R =.42, p <.05). These predictor variables account for 18% of the variance in efficacy for student engagement. According to the results of regression analysis, efficacy for student engagement was positively and significantly predicted by critical thinking skills (β =.23, p <.05) and problem solving skills (β =.23, p <.05).

In Table 2, it is seen that the critical thinking disposition and problem solving skills have a significant relationship with efficacy for instructional strategies (R =.44, p <.05). These predictor variables account for 19% of the variance in efficacy for student engagement. According to the results of the regression analysis, efficacy for student engagement was significantly and positively predicted by critical thinking disposition (β =.26, p <.05) and problem solving skills (β =.21, p <.05).

As can be seen in Table 2, critical thinking disposition and problem solving skills have a significant relationship with efficacy for classroom management (R =.40, p <.05). These predictor variables account for 16% of the variance in efficacy for student engagement. According to the results of regression analysis, efficacy for student engagement was significantly and positively predicted by critical thinking disposition (β =.13, p<.05) and problem solving skills (β =.29, p <.05).

Lastly, as is also seen in Table 2, critical thinking disposition and problem solving skills have a significant relationship with teacher self-efficacy (R =.45, p <.05). These predictor variables account for 20% of the variance for teacher self-efficacy. According to the results of the regression analysis, teacher self-efficacy was significantly and positively predicted by critical thinking skills (β =.22, p <.05) and problem solving skills (β =.26, p <.05).

4. Discussion

In this study, the relationships between pre-service teachers' critical thinking disposition, perceptions of problem solving skills, and teacher self-efficacy beliefs were examined. The findings confirm that critical thinking disposition and perceptions of problem-solving skills are important variables that predict teachers' self-efficacy beliefs.

Teacher self-efficacy beliefs of pre-service teachers were examined in the study. The pre-service teachers assessed themselves as quite competent at all levels in the sub-dimensions of self-efficacy. In other words, pre-service teachers thought they were competent in classroom management, instructional strategies and student engagement. There are findings reported in the literature that are parallel to the findings of this study (Ateş, 2016; Şahin-Taşkın & Hacıömeroğlu, 2010; Baykara, 2011). The pre-service teachers' perceiving themselves as quite competent can be seen as an important result. Teachers with high self-efficacy beliefs make further efforts to improve student learning and achievement (Bergman, McLaughlin, Bass, Pauly, & Zellman, 1977, Ruble, Usher & McGrew, 2011). On the contrary, low self-efficacy beliefs in teachers cause different problems in the accomplishment of educational objectives (Henson, 2001; Tschannen-Moran & Woolfolk-Hoy, 2001; Battersby & Cave, 2014). Self-efficacy is related to professional experience (Egyed & Short, 2006). In other words, experiences that require expertise have a vital importance in the development of self-efficacy (Bandura, 1977). In this study, although it is seen as a positive result that pre-service teachers have high self-efficacy beliefs, courses can be taught in education faculties to develop self-efficacy beliefs in teacher candidates.

In the study, the pre-service teachers' critical thinking disposition was investigated. The preservice teachers' critical thinking disposition was not at an adequate level. There are findings in other studies that are consistent with the findings of this study (Alper, 2010; Can & Kaymakci, 2015; Çetinkaya, 2011; Ekinci & Aybek, 2010; Nalçacı, Meral, & Şahin, 2016). It can be stated that analyticity, open-mindedness, cognitive maturity, curiosity, self-confidence, systematicity and searching for truth, which are important components of critical thinking, need to be improved in pre-service teachers. Pre-service teachers' low level of critical thinking disposition may be due to the contents of the undergraduate courses they take and not using different methods and techniques in these courses. In order to develop critical thinking skills, it is important for students to feel safe, reflect on how the thinking process works, be open to questions, ask quality questions, evaluate others' thoughts and evaluate their own thinking processes (Seferoğlu and Akbıyık, 2006). Critical thinking courses can be taught to candidate teachers in this respect. Trainings on teaching how to think are important to teach critical thinking skills (Brandt, 1985; cited in Seferoğlu & Akbıyık, 2006). In addition, critical thinking requires rational, inquisitive and reflective thinking (Ennis, 1962). Thinking elements such as openness, accuracy, competence, depth, breadth, and certainty are important in critical thinking activities (Nosich, 2012). Therefore, changing teaching principles and methods, teaching critical thinking in a separate course or integrating it into another course, teaching staff's acting as a model for critical thinking can increase the disposition of pre-service teachers to think critically.

In the study, the pre-service teachers' perceptions of their problem solving skills were also examined. The re-service teachers' perceptions of problem solving skills seemed to be at a moderate level. In other words, the pre-service teachers did not feel strong enough in the problem-solving dimensions of self-confidence, approach-avoidance and personal control. Similar findings are also reported in the literature (Demirtaş & Dönmez, 2008; Kışkır, 2011; N. Tok, Ş. Tok, & Dolapçıoğlu, 2014). Considering the problems of the education system, it is expected that preservice teachers should have a high level of belief in solving the problems that they encounter. Thus, the problem solving capacities of pre-service teachers need to be improved. In problem-solving skills, coping with and defining problems, confidence in the solution, and cognitive processes are of great importance (Heppner & Baker, 1997). It is known that cognitive processes are effective in problem solving (Gagne, 1985). Trainings aimed at improving problem solving skills may improve problem solving skills (Olgun, Onturk, Karabacak, Aslan, & Serbest, 2010). Therefore, providing problem-solving opportunities for pre-service teachers will help them form their own cognitive strategies. It is possible to arrange courses on problem-solving skills in the curriculum of teacher training programs to enhance teacher candidates' problem-solving skills. In this respect, structured programs on problem-solving skills may be expected to improve the problem-solving skills of pre-service teachers.

Significant and positive correlations were revealed between the pre-service teachers' self-efficacy beliefs and critical thinking disposition. Similar findings can be found in the ltierature (Dehghani, Pakmehr, & Malekzadeh, 2011; Kezer, Ogurlu, & Akfırat, 2016; Phan, 2009; Zangenehvandi, Farahian, & Gholami, 2014). At the same time, positive correlations were found between the pre-service teachers' problem-solving skills and teacher self-efficacy beliefs. Similar findings are also reported in other studies (Altunçekiç, Yaman, & Koray, 2005; Aylar & Aksin, 2011; Kesicioğlu & Güven, 2014; Yenice, 2012). Due to the positive correlation between critical thinking and problem solving skills, a positive increase in critical thinking and problem solving can be said to increase the level of teacher self-efficacy beliefs or vice versa. As a result, it can be concluded that as pre-service teachers tend to think critically and their problem-solving skills become higher, they will be able to provide more student engagement, use classroom management strategies positively and employ instructional strategies to achieve higher levels of student learning. Accordingly, it can be argued that critical thinking and problem solving skills are important variables in increasing the level of teacher self-efficacy beliefs.

In the study, the predictor power of critical thinking and problem solving skills over teacher self-efficacy beliefs were examined. The results of the regression analysis revealed that efficacy for student engagement, efficacy for instructional strategies and efficacy for classroom management were predicted by critical thinking disposition and problem solving skills. There are similar findings about the role of critical thinking disposition (Zangenehvandi, Farahian, & Gholami, 2014) and problem solving skills (Kesicioğlu & Güven, 2014) in predicting teacher self-efficacy. According to these results, it is expected that pre-service teachers, whose critical thinking disposition and problem solving skills are sufficient, have a higher level of teacher self-efficacy beliefs. Critical thinking disposition and processing information effectively lead to problem solving (Seferoğlu & Akbıyık, 2006). Pre-service teachers are expected to pursue rational strategies to become more effective teachers. As they increase their critical thinking and problem-solving skills, they will be more interested in the problems at school and will seek different ways to solve these problems, try different methods for student learning, and think critically about their work. It can be said that teachers who are active and motivated in their work will gain more

successful experiences, and their self-efficacy beliefs will change in the positive direction by experiencing success. In problem-solving, understanding the nature of problems makes it easy to achieve the desired results (Bandura, 1986). Cognitive processing ability increases the level of work capacity and consequences (Truxillo, Seitz & Bauer, 2008) and the ability to complete a task (Chen, Casper, & Cortina, 2001; Cormier, Pickett-Hauber & Whyte, 2010). Thus, self-efficacy evolves in the positive direction (Chemers, Hu, & Garcia, 2001). As a result, it is observed that the self-efficacy of pre-service teachers increase with their critical thinking disposition levels and their behaviors towards problem solving skills.

The significant results of the study can be summarized as follows: (i) Pre-service teachers seem to have a sufficient level of self-efficacy beliefs, a low level of critical thinking, and a moderate level of problem solving skills; (ii) Pre-service teachers' critical thinking disposition and problem solving skills are positively correlated with their teacher self-efficacy perceptions; (iii) Efficacy for student engagement, efficacy for strategies and efficacy for classroom management are predicted significantly and positively by critical thinking disposition and problem-solving skills. Consequently, different practices should be implemented in education faculties aiming at developing critical thinking disposition and problem solving skills of pre-service teachers. In this context, it may be useful to teach new courses for the development of thinking skills. At the same time, school practicum at education faculties can be implemented starting from the first year of the faculty to develop critical thinking and problem solving skills. Besides, pre-service teachers can be asked to produce projects for problems in education. In the courses, instructors can use different methods and techniques to make pre-service teachers more active in classes. Because critical thinking and problem-solving skills are important variables that determine self-efficacy, teachers at schools can be trained to think critically as well. Supporting qualitative methods such as interviews and observations, and gathering more detailed data can be useful for more descriptive results. Further studies may be carried out to gain a clearer understanding of the predictive power of critical thinking and problem solving skills over self-efficacy.

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Effectiveness of Lesson Study Approach on Preservice Science Teachers' Beliefs

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Abstract

Beliefs influence teacher decision in the classroom. Because of this reason, understanding teachers' beliefs is important. It is also critical to study teachers' beliefs who integrate science in the classroom. In this study, the effects of microteaching with lesson study approach on preservice science teachers' beliefs about learning and teaching have been analyzed. Teachers' Beliefs Interview (TBI) has been used for determining the development of preservice science teachers' beliefs about learning and teaching. At the end of the study, it was determined that through microteaching with lesson study approach, preservice science teachers' beliefs improved in a positive way that their beliefs significantly changed toward more student-centered. The findings from this study support the notion that application micro teaching with lesson study in Science Teaching Method Course has postitive impact on preservice teachers' beliefs.

Keywords: lesson study approach, preservice teachers' beliefs, teacher education program

1. Introduction

Teachers' decision making about curriculum and instructional tasks is influenced by many different factors. One of them is beliefs and they play a major role about it (Nespor, 1987; Pajares, 1992). Beliefs are personal constructs and they cannot change easily. In an educational setting, beliefs can be described as teacher's understanding of the nature of knowledge and understanding of a discipline, such as science (Pajares, 1992). Through communication, action and evaluation, the beliefs held by individual are formed and expressed (Pajares, 1992; Tobin, Tippins & Gallard, 1994). And in general these beliefs influence their action. People behave in a way they believe (Elbaz, 1983; Korthagen & Kessels, 1999; Northfield, 1998; Pajares, 1992; Shulman, 1986; Tobin et al., 1994). Because of this reason, the study of teacher beliefs has received much attention in recent years (Luft & Roehrig, 2007; Pajares, 1992; Mansour, 2009; van Uden, Ritzen & Pieters, 2014; Wong, 2016). These researches focused on the relationship between teachers' beliefs and their teaching. Researchers are beginning to clarify how beliefs are improved and how they affect the teachers' practice. Some researches emphasized that beginning teachers are often significantly influenced through preservice teacher education programs in terms of their beliefs and practice (Kyles & Olafson, 2008; Joram & Gabriele, 1998; Stipek, Givvin, Salmon, & MacGyvers, 2001). In addition, many researches have focused on the importance of methods courses in teacher education programs. The results of these research stated that if enough time and professional support are provided for preservice teachers, the methods courses in teacher education programs affect preservice teachers' conceptual changes in ideology and pedagogy in positive ways regarding to developing beliefs (Brown & Melear, 2006; Hart, 2002; Stuart & Thurlow, 2000; Wilson, Floden, & Ferrini-Munday, 2001).

Nowadays, many research focus on different approach to teacher learning in methods courses such as Lesson Study (Sims & Walsh, 2009; Parks, 2008; Akerson, Pongsanon, & Park-Rogers, 2015). Lesson study, which is a form of teacher Professional development that originated in Japan, is closely tied to the idea of learning from teaching (Stigler & Hiebert, 1999). Through this professional development practice, teachers have an oppurtunity to systematically examine their teaching, with the goal of becoming more effective. Lesson study process typically includes: defining and researching a problem of practice; planning, teaching, and observing the lesson; evaluating the lesson; revising the lesson; teaching and observing the revised lesson; evaluating and reflecting again, and sharing the results (Lewis, Perry, & Murata, 2006). Through lesson study, teachers can explore real instructional challenges that are faced in their classrooms with their students and they have a chance

to share best practices and strategies, and to create of relationships and collaborate with peers. Lesson study is also mentioned as an example of pedagogy for preparing teachers for teaching as a lifelong learning process (Hammerness & Darling-Hammond, 2005). Nowadays several research studies report on successful use of lesson study with preservice teachers (Burroughs & Luebeck, 2010; Tsui & Law, 2007; Zhou, Xu, & Martinovic, 2017).

Application microteaching with lesson study in science teacher education program is very new approach in Turkey. Thus, the present research focuses on the effectiveness of microteaching with lesson study in science teaching method course in terms of changes of preservice science teachers' beliefs about teaching and learning. In this sense, it is thought that the results acquired from this research will contribute to science education and that these results will shed light upon practices in method courses taking place in teacher training.

2. Method

2.1 Application Lesson Study to Methods Courses

This research-study focused on science teaching methods course in science education which is a four credit/hours required course. The preservicescience teachers attend this course in their fourth year at fall semester. During this course, lesson study approach was integrated to students microteaching. Micro teaching with lesson study approach is an innovation in Methods Courses. The lesson study is a cycle where the group of preservice science teachers/teachers repeatedly goes through the phases, discussion, goal-setting and planning, research lesson.

In this research, integration of lesson study in micro teaching was started with lesson study groups. Students were divided into the groups and each groups consisting of three members. First, each groups chose one science unit from elementary school science curriculum. The members in every groups discussed to determine instructional goals and build lesson plans together according to their science unit. Each group provided the objectives of teaching and plans student-centered strategies to achieve each objective. First week of the application, one member of every each group taught based on the selected learning objectives. After the microteaching, the experience was discussed by other group members and other students in the classroom and instructor joined the discussion. On that basis, the lesson plan revised and the lesson taught again for a similar group. The disscussion cycle repeated again. In this way, all members of the groups completed their microteaching in three weeks. Through this application, preservice science teachers have a chance to share ideas, discuss, work together on planning good teaching, develop professional language and collaborative skills.

2.2 Participants

Participants are prospective science teachers of a faculty of education at a state university in one of the cities located on the west part of Turkey. Purposive sampling is used to select the participants. In purposive sampling, it is assumed that the people chosen possess the necessary information about the target population (Franklen & Wallen, 2003). This research was conducted with 58 volunteered prospective science teachers who had already completed the 3rd grade and passed to the 4th grade and enrolled Science Teaching Method Course- II. These prospective science teachers had already completed the almost all science courses including laboratory courses and pedagogy courses except Student Teaching.

2.3 Instrument

The data were collected at the first semester of 2014-2015 academic years from the preservice science teachers through Teachers' Beliefs Interview (TBI), which is an open-ended questionnaire with seven questions (Table 1).

Table 1. Questions used for Teacher Beliefs Interview (TBI)

Q1. How do you maximize student learning in your classroom? (learning)
Q2. How do you describe your role as teacher? (knowledge)
Q3. How do you know when your students understand? (learning)
Q4. In the public school setting, how do you decide what to teach and what not to teach? (knowledge)
Q5. How do you decide when to move on to a new topic in your class? (knowledge)
Q6. How do your students learn science best? (learning)
Q7. How do you know when learning is occurring in your classroom? (learning)

Source: Luft and Roehrig (2007).

TBI was designed to develop an understanding of how the teachers viewed students and teaching by Luft,

Roehring, Brooks, and Austin (2003). Participants' responses to each individual question were categorized as traditional, instructive, transitional, responsive, or reform-based. The patterns that emerged from the categories were defined (Luft et al., 2003):

Traditional Responses: These responses are defined as traditional or teacher-centred beliefs that these beliefs focus strictly on the efficient transmission of knowledge from the teacher to the student.

Instructive Responses: These responses are still defined as teacher-centred beliefs. These beliefs involved the teacher providing carefully constructed experiences for the students and minimizing student behavior problems.

Transitional Responses: These responses demonstrate an effective response toward students, however, they do not clearly affirm students' role in the classroom as co-constructors of knowledge.

Responsive Responses: These responses show that the teacher values collaboration in the classroom and they have a desire for students to interact with each to solve problem.

Reform-Based Responses: These responses show a commitment to students being co-constructors of knowledge in the classroom. And they clearly defined role for the teacher as a mediator between students' prior knowledge and the knowledge of the discipline.

2.4 Data Analysis

Since the research questions in this study are general and reflect the intention of finding out the understanding of prospective science teachers' on the belief of teaching, qualitative approach was used. In this study, TBI was used to collect data from a sample of 58 prospective science teachers at the first week and at the last week of the Science Teaching Method Course, which they enrolled in the seventh semester. In a class time of 60 minutes, participants wrote about the questions of TBI and coded by two researchers using the TBI coding maps (Luft et al., 2003) with an inter-rater reliability of 0.88. This value indicates a high level of agreement. The coding maps were used to scale the participants' responses to show movement in the direction of either teacher or student-centered beliefs.

The scoring of teaching beliefs for each teacher was quantified to allow for a statistical analysis of teaching beliefs. Each of the five coded-responses was given a numerical value: 1- a traditional response; 2- an instructive response; 3- a transitional response; 4- a responsive response; and 5- a reform-based response. This resulted in an overall beliefs score between 7 and 35 for each preservice science teachers.

3. Results

The findings stated that the pre-development TBI revealed a range in prospective teachers' beliefs from primarily teacher focused (instructive; n=12, 21%) to transitional (n=46, 79%). On the other hand, the post-development TBI revealed a range in prospective teachers' beliefs from primarily transitional (n=39, 67%) to learner-focused (responsive; n=19, 33%).

Four questions of TBI, Q1, Q3, Q6 and Q7, are beliefs about learning. The first question (Q1) of the TBI is "How do you maximize student learning?" The pre-development TBI data have stated that most of the prospective science teachers have Instructive beliefs (n=32, 55.2%), which they stated that teachers monitors student actions or behaviors during instruction and according to them, they decide what they should to do. In addition, 18 of them (31%) have transitional beliefs. They stated that teachers create a classroom environment that involves the student. However, the post-development TBI data showed that prospective science teachers' beliefs shifted from teacher centred (instructive; n=6, 10.3%) to transitional (n=32, 55.2%) and learner centred (responsive; n=18, 31%) beliefs.

Q3 is "How do you know when your students understand?" The pre-development TBI data have stated that most of the prospective science teachers have transitional beliefs (n=45, 72.4%), which they focused on their students' response that is related to the presented response. In addition, many prospective science teachers have teacher centred beliefs (traditional, n=7, 12.1%; instructive, n=7, 12.1%). These prospective science teachers stated that if their students receive the information or if their students demonstrate what has been presented, it shows that students understand the topic. After post-development TBI data have stated that prospective science teachers beliefs moved from teacher centred beliefs to transitional (n= 42, 72.4%) and responsive beliefs (n=11, 19%). Prospective science teachers with responsive beliefs stated that if their students can use the presented knowledge, they know their understanding.

The responses of pre-development TBI to Q6, "How do your students learn science best?" were most often coded as instructive (n=56, 96.6%). These prospective science teachers stated that their students learn science best by mimicking the teacher. Post-development responses of Q6 showed that even though many prospective

science teachers still keep instructive beliefs (n=43, 74.1%), some of prospective science teachers' beliefs shifted to transitional beliefs (n=12, 20.7%).

The last question (Q7) is "How do you know when learning is occurring in your classroom?" The pre-development TBI data have stated that most of the prospective science teachers have teacher centred (traditional, n=6, 10.3%; instructive, n=26, 44.8%) and transitional beliefs (n=26, 44.8%). Prospective science teachers with traditional beliefs stated that it is better to focus on students' actions and response during the instruction and in this way; teachers can understand when learning is occurring in their classroom. On the other hand, prospective science teachers with transitional beliefs believed that it is possible to understand when learning occurring in their classroom with determining through subjective conclusions about the students. After post-development TBI data have stated that prospective science teachers beliefs moved from teacher centred beliefs to much more transitional beliefs (n=41, 70.7%) (see Table 2).

Table 2. Beliefs about Learning

		Pre-test of TBI		Post-test of TBI	
	Category	Frekans	Percent	Frekans	Percent
Q1. How do you maximize student learning in your classroom?	Traditional	5	8.6	1	1.7
	Instructive	32	55.2	6	10.3
	Transitional	18	31.0	32	55.2
	Responsive	3	5.2	18	31.0
	Reform-Based	-	-	1	1.7
Q3. How do you know when your students understand?	Traditional	7	12.1	-	-
	Instructive	7	12.1	5	8.6
	Transitional	42	72.4	42	72.4
	Responsive	2	3.4	11	19.0
	Reform-Based	-	-	-	-
Q6. How do your students learn science best?	Traditional	2	3.4	-	-
	Instructive	56	96.6	43	74.1
	Transitional	-	-	12	20.7
	Responsive	-	-	2	3.4
	Reform-Based	-	-	1	1.7
Q7. How do you know when learning is occurring in your classroom?	Traditional	6	10.3	-	-
	Instructive	26	44.8	9	15.5
	Transitional	26	44.8	41	70.7
	Responsive	-	-	8	13.8
	Reform-Based	-	-	-	-

Three questions of TBI, Q2, Q4 and Q5, are beliefs about knowledge. Q2 of the TBI is "How do you describe your role as teacher?" The pre-development TBI data have stated that most of the prospective science teachers have teacher centered (traditional, n=10, 17.2%; instructive, n=16, 27.6%) and transitional beliefs (n=30, 51.7%). Prospective science teachers with traditional beliefs preferred to focus on information and structure of the instruction. In addition, they preferred to focus on providing experiences to their students. On the other hand, prospective science teachers with transitional beliefs preferred to focus on teacher/student relationships or student understandings. After post-development TBI data have stated that prospective science teachers beliefs moved from teacher centered beliefs to transitional beliefs (n=38, 65.5%) and responsive beliefs (n=12, 20.7%). Prospective science teachers with responsive beliefs gave priority to focus on collaboration between teacher and student.

Q4 is "In the public school setting, how do you decide what to teach and what not to teach?" The pre-development TBI data have stated that most of the prospective science teachers have teacher centered beliefs (traditional, n=5, 8.6%; instructive, n=34, 58.6%). In general, these prospective science teachers emphasized that they decide according to curriculum and/or other school factors or just based on teacher direction, while getting decision on what to teach and what to not teach. In addition, many prospective science teachers have transitional beliefs (n=19, 32.8%). These prospective science teachers prefer to get decision based on student feedback. After post-development TBI data have showed that prospective science teachers beliefs moved from teacher centred beliefs (instructive, n=19, 32.8%) to transitional (n= 31, 53.4%).

The responses of pre-development TBI to Q5, "How do you decide when to move on to a new topic in your class?" were most often coded as teacher centered beliefs (traditional, n=26, 44.8%; instructive, n=4, 6.9%). These prospective science teachers stated that teachers decide themselves directly to move on to a new topic or they decide to basic student understanding of facts and concepts. Any of prospective science teachers do not have learner centered beliefs. On the contrary, post-development responses of Q5 showed that even though many prospective science teachers still keep teacher centered beliefs (traditional, n=7, 12.1%; instructive, n=10, 17.2%), some of prospective science teachers' beliefs shifted to responsive beliefs (n=26, 44.8%). While getting decision, these prospective teachers consider student feedback that potentially involves revisiting concepts (see Table 3).

Table 3. Beliefs about knowledge

		Pre-test of TBI		Post-Test of TBI	
	Category	Frekans	Percent	Frekans	Percent
Q2. How do you describe your role as teacher?	Traditional	10	17.2	-	-
	Instructive	16	27.6	6	10.3
	Transitional	30	51.7	38	65.5
	Responsive	2	3.4	12	20.7
	Reform-Based	-	-	2	3.4
Q4. In the public school setting, how do you decide what to teach and what not to teach?	Traditional	5	8.6	-	-
	Instructive	34	58.6	19	32.8
	Transitional	19	32.8	31	53.4
	Responsive	-	-	6	10.3
	Reform-Based	-	-	2	3.4
Q5. How do you decide when to move on to a new topic in your class?	Traditional	26	44.8	7	12.1
	Instructive	4	6.9	10	17.2
	Transitional	19	32.8	15	25.9
	Responsive	9	15.5	26	44.8
	Reform-Based	-	-	-	-

TBI scores are approximately normally distributed from the both phases of the interviews based on visual analysis of Q-Q plots. A pre-development kurtosis value is -0.316 (standard error of 0.618) and a skewness value is -0.414 (standard error of 0.314); and a post-development kurtosis value is -0.044 (standard error of 0.618) and skewness value is -0.082 (standard error of 0.314) also support the assumption of a normal distribution. Pre-development TBI scores are in the range of 11-20 and post-development TBI scores are range of 15-26.

The results of two paired-samples t-tests indicated that, for beliefs about learning, there was a statistically significant difference between pre-development scores and post-development scores (t value= -8.060, p-value= 0.00<0.05). For beliefs about knowledge, the results indicated that there also was a statistically significant difference in scores between pre-development scores and post-development scores (t value= -11.301, p-value= 0.00<0.05) that change toward more student-centered response (Table 4).

Table 4. Paired sample t-tests for beliefs about learning and beliefs about knowledge

		Paired Differences					t	df	Sig. (2-tailed)
		Mean Differences	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre and post development of TBI (Learning)	-.477	.451	.059	-.596	-.358	-8.060	57	.000
Pair 2	Pre and post development of TBI (Knowledge)	-.772	.520	.068	-.908	-.635	-11.301	57	.000

4. Discussion and Conclusion

Many researches stated that teacher education programs play a significat role in the development of teachers' beliefs about teaching and learning (Hancock & Gallard, 2004; Nuangchalerm & Prachagool, 2010; Mansour, 2008). In addition, several past studies have focused on design of methods course and their influence on specific beliefs of preservice teachers (Wilkins & Brand, 2004; Cinici, 2016; Tarmo, 2016; Zhou, Xu, & Martinovic, 2017).

In this research, the beliefs of preservice science teachers in the science teaching method course over a fall semester, which was designed microteaching with lesson study, was examined. Whole findings from this research suggest that after participating in the science methods course, preservice science teachers' beliefs about teaching and learning science was changed in a positive way and their beliefs influence their future instructional practices. In addition, the results of this research support the importance of the research that instructional methods used in the course are a critical role on changing preservice science teachers' beliefs about teaching and learning (Cinici, 2016; Brown & Melear, 2006; Wilkins & Brand, 2004). The results stated that many preservice science teachers showed congruent increases between their scores on TBI. Preservice teachers who entered the science method course with the most traditionally aligned beliefs recorded a shift toward more responsive beliefs. In addition, positive gains in scores were also recorded for preservice science teachers who already had student-centered beliefs when they began to science method course.

As a result of this research, improving the preservice science teachers' beliefs through lesson study approach in micro teaching is possible, eventhough changing personal beliefs is not easy. This application gives preservice science teachers an opportunity to discuss in more detail about the right teaching skills, and to identify and evaluate their beliefs, in this way, they can improve their teching beliefs and most probably these beliefs effect on their teaching practice in a positive way. Through microteaching with lesson study approach, preservice science teachers have a chance to make self-criticism of strengths and weaknesses of their teaching and to talk about what was planned and what was delivered in their teaching session. In addition, quality of teaching can improve through the comments from other group members, because they have a chance to see different teaching on same unit. In conclusion, it is possible to say that integration of microteaching with lesson study is possible and useful and effective for improving of preservice science teachers' beliefs.

This study gives insights about the effectiveness of using microteaching with lesson study on improving preservice science teachers beliefs regarding teaching and learning. According to the results of this study, it may be concluded that the application of microteaching with lesson study is really successful and it is possible to apply the lesson study with microteaching in Science Teaching Methods Courses when developing preservice teachers prepared to use reform-based instruction. This study includes important results regarding science teacher education program and we need more study effects of microteaching with lesson study in Methods Courses on preservice teachers' beliefs and practicum.

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The Impact of School Bullying On Students' Academic Achievement from Teachers Point of View

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Abstract

The study aimed to investigate school bullying impact on students' academic achievement from teachers' perspective in Jordanian schools. The study used a descriptive analytical methodology. The research sample consisted of all schools' teachers in Amman West Area (in Jordan). The sample size consisted of 200 teachers selected from different schools from Amman West area in Jordan. A self-administrated questionnaire was designed according to research objectives and hypotheses and distributed over research sample subjects. All distributed questionnaire were collected. They were, coded and analyzed by using SPSS version 18. The research results indicated that school bullying exists in all schools regardless if they are governmental or private ones. The study also concluded that school bullying affect student's academic achievement either victims or the bullies.

Keywords: school bullying, academic achievement, teachers

1. Introduction

Bullying exists in all communities since long time. Bullying exists either in developed or developing societies. Bullying starts in early age. Child starts to build an initial concept of bullying. Then, it starts increasing and continues until it reaches its peak in the basic phase stage (4, 5, and 6). It continues in higher basic stage, and then started to decline at secondary level (Dickerson, 2005). Bullying is considered a common form of violence in schools. Various studies indicated that bullying makes schools to be unsafe places for schools' students and it contributes in the belief that some schools are become not safe anymore (Maliki et al., 2009).

Shahria et al. (2015) reported that bullying is deemed as a serious problem in academic settings in all parts of the world. They found that bullying has negative impact on academic performance. Females were more affected than males by bullying.

Bullying constitute a complex problem in school kids lives. It is a problem that affects all students, either bullies or victims, and those who attended interpersonal violence. Bullying may involve many sections verbal, physical assaults, threats, jokes or language, and criticizing. All of such factors affect individually, or collectively, and contributes in child's bullying. It is well known that bullying is difficult to eliminate or to stop it in schools because it is used by students. Alison (2016) stated that bullying is considered as global problem that affect emotional, social, and physical wellbeing of school-age children worldwide

Shafqat (2015, p. 45) argued that bullying in schools occurs in any place either in school building or around school building and may occur in bathrooms, school buses and during waiting for school buses, and in classes which may require group work or after school activities. School bullying is a widespread issue that affects school students in many parts of their lives such as; psychologically, educationally and professionally. Sekol and Farrington (2016) found that bullies, compared to non-bullies have been bullied before,

Bullying at school affects academic achievement since bullied children feel fear and weak and in the same time it affects students' personality traits and self-confidence. Therefore such situation makes bullied students unable to follow or to pay attention for their study well and even they might do not like to go to school. Moreover they miss opportunities to participate with their colloquies or even enjoy school activities.. Many researchers found

that there is a strong relationship between bullying academic achievement,. Students lose concentration when they are attending their classes.

1.1 Statement of Problem

Bullying is a problem that affects all students, either the person the bully, the victims, and those who witnesses. Bullying may include verbal, physical assaults, threats, jokes or language, mockery and criticizing, insulting behavior and facial expressions. All of such factors work either individually, or collectively, for contributing in students' likelihood of bullying.

It is well known that bullying is difficult to eliminate or to stop it in schools because it is used by students. Bullying at school has various impact, among such impact is the academic achievement. Therefore the research problem is to determine the impact of school bullying on students' academic achievement from teachers point of view.

1.2 Study Significance

The research importance stems from the importance of the topic it deals with, which is considered very important for many parties. Moreover it will enable those concerned know how to deal with the problem of bullying and its obvious consequences on school students achievement. It also enables the victims to know how to avoid being bullied.

1.3 The Study Purpose

The study aimed to achieve the following objectives:

1) To specify the impact of bullying in schools in general

2) To find out the impact of bullying in schools on students' academic achievement

1.4 Definition of Terms

Bullying: Bullying is defined as "repeated acts of unprovoked aggression that are damaging psychologically or physically for the victim, and where the strength of the aggressor/s and the victim is unequal" (Jankauskiene et al., 2008, p. 46). Bullying is a form of aggression in which there is no imbalance of power between the bully and the victim that occurs mostly in peer group context (Mishna, 2003). Bullying is one of the most evident problems that children face in education system; in addition, it is one of the most important health risks (Raskauskas & Modell, 2011, p. 64). Bullying is perceived as serious problem in schools in these days (Rose & Monda-Amaya, 2011, p. 4). Educators understand bullring's dynamics and consequences in addition to what they can do to support students in such situations (Allen, 2010). Bauman (2006) indicated that bullying phenomenon has three components: as follows: first, there must be an intention to harm; second, it is necessary that it happens many times; and finally, it needs to be no balance power between perpetrator and the victim.

School bullying is defined as a form of violence that harms others and it occurs at school or during various activities when a student or group of students uses their strength in hurting other individuals or other groups. The basis of bully's strength is either physical strength or their age or financial situation, or social level or technological skills (Quiroz et al., 2006). School bullying is considered as "aggressive behavior which mostly usually contains no equivalent power between the bully and the victim, and occurs many times over the time". There are many forms of bullying such as physical abuse, verbal abuse and threats of non-verbal communication. Bullying also includes the use of modern communication means for sending various messages of confusing and threatening.

Bullying is referred to frequent aggressive behaviour made by one bully or more bullies. Bullying also in occurred when a student is teased frequently in a way student does not like (Omoteso, 2010). Bullying is deemed as common increasing problem in every society and schools. Bullying occurs in any time and it has negative impacts mainly on students' academic, emotional and social development during school period (Kartal & Asude, 2009).

Bullying in schools has many and different causes, in this regard Omoteso (2010) indicated that characteristics of personality and typical reaction patterns, all together combined with physical strength or weakness level in boys, can help in explaining bullying problems development in individual students. In addition to environment impacts, such as teachers' attitudes, behaviours and supervisory routines which play an important role in determining such problems in school? In addition parents have great impact in this concern so if they use aggression as a way of meeting their needs, or use harsh or aggressive methods of discipline shall have children who engage in aggression or bullying Omoteso (2010)

Bullying includes physical and verbal violence includes power and control and the desire to control the destiny of others from peers and colleagues, this behavior exists among students in all stages of public education and can lead to violence comprehensive sense. Aggressive behavior is offensive is not justified and the damage to the same people or property or the environment and nature may be aggression verbally or in practice

Bullying Forms:

There are several forms of bullying as follows: (Quiroz et al., 2006)

1. Physical bullying: such as hitting, slapping, kicking or forced to do something.
2. Verbal bullying: verbal abuse, insults, cursing, excitement, threats, false rumors, giving names and titles for individual, or giving ethnic label.
3. Sexual bullying: this refers to use dirty words, touch, or threat of doing.
4. Psychological bullying: harassment, threats and intimidation, humiliation and rejection from the group.
5. Bullying in social relations: preventing some individuals from exercising certain activities or reject their friendship or spreading rumors about others.
6. Properties Bullying: taking other people's things and dispose, or destroy.

2. Review of Related Literature

Impact of bullying on Academic achievement:

Cythia (2014) analyzed bullying impact on student's performance either in short or long term. She found that there are differences in relationship between bullying level and academic performance depending on student´s academic achievement. Nadine (2014) investigated bullying impact on student's ability to academically succeed. Nadine found that bullied students have feel of fear from coming to school because they feel that they are unsafe; therefore they are unable to concentrate which reelect negatively on their academic success. Mundbjerg et al. (2014) analyzed the relationship between bullying in elementary school in Denmark. They found that bullied students have lower academic achievement in 9^{th} grade and bullying impacts are larger if it is more severe. Placidius (2013) found that physical bullying was perceived as a dominant bullying element. Boys prefer to be bullies more than girls. Poor academic performance was as impact of bullying.

Mehta et al. (2013) found that when students feel that bullying is a phenomenon in their school, they feel that they are unsafe which reflected on less engaged in school community. Therefore they have less motivation to do well at school and they do not participate in school activities. Bullying affects student's academic achievement in various ways. Ammermueller (2012) found that being bullied has a significantly negative impact on present and future students' performance in school

Brank et al. (2012) indicated that bullying victims are weak, shy, and anxious. They added that victims' performance is poor in school and seek to avoid attending school classes for the purpose of avoiding victimization. Victimization experiencing can lead to poor academic performance and leading to absenteeism. Skapinakis et al. (2011) found that victims were more likely to report suicidal thoughts than were bullies.

Juvonen, et al. (2011) said that bullying experiences affect victims' academic achievement in both direct and indirect ways. So bullied student by his peers may become worried and afraid of being teased, therefore he may stop participating in class or may has e trouble in concentrating on class work because of fear. They added that students who are often subject to be bullied by their peers during school period have less engagement at school and poor grades. Konishi et al. (2010) confirmed that interpersonal relationships within school environment influence academic achievement.

Roman and Murillo (2011) found that aggression in schools has a negative effect on academic achievement in Latin America. They affirmed that students who have been physically or verbally abused perform less. Marcela and Javier (2011) found that bullying is a serious problem throughout Latin America they indicated that; students who suffer from their peers aggression have lower performance in reading and math than those who do not; and students who are in classrooms with more physical or verbal violence perform are more worse than those in less violent classroom settings. Konishi et al. (2010) found that school bullying affects negatively academic achievement.

Chaux et al. (2009) argued that ten to fifteen percent of adolescents worldwide are bullied two or more times a month. Skrzypiec (2008) found that third of students who had been seriously bullied reported having serious difficulties in concentrating and paying attention in class because of bullying and the fear associated with. Glew

et al. (2005) reported that bullying prevents concentration and subsequent academic achievement since bullying victims lose interest in learning and experience a drop in academic grades because their attention is distracted from learning. Mishna (2003) indicated that bullying is "a form of aggression in which there is an imbalance of power between the bully and the victim that occurs largely in the context of the peer group".

3. Design and Methodology

3.1 Population and Sampling

The targeted population consisted of all males and females teachers of (6th and 7th Grades) in Amman West area school (public and private ones). A convenient sample was selected totaling 220 teachers for the two classes from different schools.

3.2 Study Instrument

A self-administrated questionnaire was designed according to research objectives and hypothesis. The questionnaire was validated through universities instructors and experts' opinions. After improving the instrument in terms of language, style, format, and content, it was administered on the 200 students.

A Cronbach's Alpha was also used to measure questionnaire internal consistency and reliability. The subjects were asked to indicate their level of agreement corresponding to each item and were rated at five point Likert Scale: strongly disagree = 1, Disagree = 2, Neutral = 3, agree = 4, strongly agree = 5.

3.3 Data Collection and Analysis

Two data collection methods were used. Books, periodicals, journals, references and the internet were used for collecting the required secondary data while self-administrated questionnaire was used and distributed to the research sample for the purpose of collecting the primary data.

3.4 Research Validity and Reliability

University instructors examined the questionnaire, their comments and amendments were taken in consideration. Therefore some items were canceled or added to form the final copy of the questionnaire. The research study used Cronbach alpha to find out the results consistency.. It was found, the questionnaire reliability level was equal to (0.91) which is acceptable.

4. Results of the Study

Table 1. Means and Standard deviation of bullying existence in the sample school

No.	Statements	Mean	S. Deviation	Rank	Level
1	There is a lot of bullying in the school	4.3000	.45854	1	**High**
2	Teachers sometimes humiliated you in front of the class	4.0000	.44749	3	**High**
3	Teachers sometimes bully students to the point that affect their academic achievement	3.9000	.53885	5	**High**
4	School witnessed many bullying events every day	4.2000	.40025	2	**High**
5	Bullying took place in all school facilities	3.9000	.30019	5	**High**
6	Older students often use school bullying	3.9000	.53885	5	**High**
7	Lack of teachers intervention encourages bullying	3.3912	1.02322	8	**High**
8	**Teachers' bullying discourages student to go to class**	**4.0000**	**.00000**	**3**	**High**

Table 1 indicated means and standard deviations of sample's subjects. With respect to bullying existence in the school, the means of sample's responses ranged between (3.39-4.30) All responses indicated the subjects agreement was high level. Statement no. 1 "There is a lot of bullying in the school" ranked the first", while statement No. 7 "Lack of teachers intervention encourages bullying" ranked the last. By reviewing the means it seems that bullying exists in the school, which seems logic since every school witnessed bullying every day and no way to avoid it.

Table 2. Means and standards deviations for sample's responses regarding school bullying impact on victim academic achievement

No.	Statements	Mean	S. Deviation	Rank	Level
9	Bullying affected negatively students' academic level	3.2000	.74880	2	**Medium**
10	Students Exam results were poor because of school bullying	3.2000	.74880	2	**Medium**
11	School bullying creates negative environment in the school	4.0000	.44749	1	**High**
12	Verbal abuse affects students' academic achievement	3.0000	1.00063	4	**Medium**
13	Bullying discourages students to attend classroom	3.0000	1.00063	4	**Medium**
14	Students suffer only from their peers bullying	2.3987	.92375	8	**Medium**
15	Have low motivation to learn	2.5362	1.17491	7	**Medium**
16	**Disinterest in academic performance**	**3.0000**	**.83718**	**4**	**Medium**

Table 2 indicates the means and the standard deviations of sample's subject. With respect to impact of bullying on victim academic achievement the means of sample's responses ranged between (2.40- 4.00) All subjects responses indicate subjects agreement were of medium and high level. Statement no 1 "School bullying creates negative environment in the school" ranked the first", while statement No. 8 "Students suffer only from their peers bullying" ranked the last. By reviewing the means the sample's responses, it is clear that bullying affects bullied academic achievement since they do not concentrate in the class room and they feel afraid from being bullied and attempt to avoid being in school which negatively avoid their academic achievement.

Table 3. Means and standards deviations for sample's responses regarding school bullying impact on bully's academic achievement

No.	Statements	Mean	S. Deviation	Rank	Level
20	Dissatisfaction with the academic experience	3.9875	.73870	2	**High**
21	Disengaged from his school community	3.9975	.73870	1	**High**
17	Having difficulties to follow school rules	3.9963	.85273	3	**High**
22	Exhibit, ore negative attitude towards school work	3.7250	.74838	3	**High**
18	Don't obey school norms	3.6325	.88086	6	**Medium**
19	**Frequently tardy and absent**	**3.6425**	**.88086**	**5**	**Medium**

Table 3 indicates the means and the standard deviations of sample's subjects. With respect to impact of bullying on bullies academic achievement responses ranged between (3.63-3.99) All subjects responses indicate subjects agreement) were between medium and high level. Statement no. 21 "Disengaged from his school community." ranked the first", while statement No. 18"Don't obey school norms" ranked the last. Although bullying affects bullied academic achievement, but in the same time it also affects bullies academic achievement since it reduce their interest in the school and have no motivation to learn in addition to other factors.

Table 4. First hypothesis test results

Variable	R	(R^2)	B	(T)	Sig
Victims academic achievement	.190	.036	.350	5.461	0.000

Table 4 indicated that there is a statically significant impact of school bullying on victims academic achievement since the significance level is (0.00). Table also demonstrates that (R^2) = (0.19) which indicate that school bullying and interpret (19%) of the change in victim's academic achievement. The rest 81% is related to other factors that were not included in the analysis

Therefore null hypothesis is rejected and the alternative is accepted. This means that there is a statistically significant impact at significance ($\alpha \leq 0.05$) level of school bullying on victims academic achievement from teachers perspective

Second sub-hypothesis testing Results:

There is no statistically significant impact at significance level ($\alpha \leq 0.05$) of School bullying on bullies achievement in government and private schools in Jordan from teachers perspectives.

Table 5. Impact of bullying on achievement

Variable	R	(R^2)	B	(T)	Sig
Bullies academic achievement	.194	0.038	.487	5.589	0.000

Table 5 indicated that there is a statically significant impact of school bullying on bullies academic achievement since the significance level is (0.00). Table also demonstrates that (R^2) = (0.038) which indicate that school bullying interpret (3.8%) of the change in bullies academic achievement in from schools' teacher perspective

Therefore the null hypothesis is rejected and the alternative is accepted, which means that there is a statistically significant impact at significance ($\alpha \leq 0.05$) level of school bullying on bullies academic achievement in government and private schools in Jordan from the perspective of schools' teachers.

4.1 Conclusions and Recommendations

The research concluded that bullying exists an almost every school either governmental or private one but with different levels. The search found that school bullying affect academic achievement either for the victims who suffer from these phenomena and in the same time it affects the bullies themselves.

The research suggested that teachers and the school management have to take different measures for the purpose of reducing the bullying volume. Moreover teachers should coordinate with bully's students. Teachers and school management have to set some programs for bullies to mitigate the school bullying.

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The Social Profile of Students in Basic General Education in Ecuador: A Data Analysis

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Abstract

The objective of this study is to examine the social profile of students who are enrolled in Basic General Education in Ecuador. Both a descriptive and multidimensional statistical analysis was carried out based on the data provided by the National Survey of Employment, Unemployment and Underemployment in 2015. The descriptive analysis shows the frequency and percentages of variables used in the investigation, and the multidimensional statistical analysis demonstrates the principal and more important criteria of differentiation and classification among the clusters of students who were investigated. These methods involve factorial analysis of multiple correspondences which demonstrate criteria of differentiation and a hierarchical cluster analysis to define clusters of students according to their common traits.

Keywords: students of basic general education, Ecuador, social profile, data analysis

1. Introduction

During the last fifteen years, Ecuador has established national and international agreements regarding education. The main objective of these agreements has been to guarantee the quality of national education with equity, intercultural, and inclusive vision in order to strengthen citizen training and unity among the Ecuadorian society.

The Ecuadorian educational system is an integrated, decentralized and flexible system, which meets the needs of individual and social learning, contributes to cultural identity, and promotes unity in diversity. As well as it aims to consolidate a society with intercultural awareness, strengthen the multi-cultural and multiethnic country with a universal vision, reflexive, critical, participatory, supportive and democratic. Besides that, the Ecuadorian educational system encourages the use of developing knowledge, skills and values to ensure competitiveness, productivity and technical and scientific development, and thus to make a better living for Ecuadorians, and achieve sustainable development in the country.

Through its educational institutions, the Ecuadorian educational system offers a higher learning education which allows the fulfillment of this vision, and based on the principles such as: quality, equity, inclusion, relevance, participation, accountability, diversity, flexibility and efficiency, the different components of the national educational system pursues the commitment and participation in the construction of knowledge of society (Castellano et al., 2017).

Therefore, the purpose of the Ecuadorian educational institutions is to shape citizens, men and women, who will be creative, critical, solidarity and deeply committed to social change. Individuals who feels proud of their national identity, who contributes to the construction of the multicultural, and multi-ethnic state always preserving their territorial sovereignty and their natural resources. Likewise, each school has the commitment to guarantee the development of ancestral languages, develop students' civic and moral values, and have capacity for self-management and generate productive work. Educators shall participate actively in the development of the country which is required for its integration into the international community; and shall contribute to the consolidation of a non-dependent democracy, in which peace, gender, equality, and social justice are the main principles to be respected and valued in all human beings.

This is why; this study's aim is to investigate the social profile of Basic General Education students in Ecuador. Basic General Education in Ecuador encompasses ten levels of study, first grade through tenth grade. Students who complete these levels are able to continue their studies towards a Unified General Baccalaureate.

Basic General Education levels enable students to develop communication skills, interpret and solve problems, and develop understanding of natural and social life. Those students who complete the Basic General Education studies develop competency in demonstrating logical, critical and creative thinking skills, as well as improve their problem solving skills in everyday situations. At the same time, students of Basic Education apply technologies to communicate, and find out solution to practical problems by doing research, and training on academic activities.

Basic General Education Curriculum is organized by areas, educational levels and sub-levels; it develops a selection of basic contents (skills with performance criteria) appropriate to the requirements of society and school environment. Therefore, in order for the Basic General Education students, to move towards the exit profile, they must develop knowledge in the following areas of learning: Language and Literature, Mathematics, Natural Sciences, Social Sciences, Foreign Language, Physical Education, Cultural and Art Education. These are the areas studied throughout Basic General Education until the last year of the Unified General Baccalaureate, constituting a longitudinal division of the area throughout the mandatory areas of study (Ministerio de Educación de Ecuador, 2016).

The data compiled in this paper can be compared with data from other countries regarding their education system and students' profile and level of education for the purpose of promoting better education based on the interests and needs of each country (OECD, 2016).

2. Method

The study uses as reference statistical information from the 2015 National Survey of Employment, Unemployment and Underemployment (INEC, 2015). Given the objective of the present study, a descriptive and a multidimensional statistical analysis were done, with the former showing the frequency and percentages of the variables under investigation (Athanasiadis, 1995).

Multidimensional statistical analysis, on the other hand, is used to illustrate the principal and most important criteria of differentiation and classification of students into clusters. The methods of the Multidimensional statistical analysis that we used are the Multiple Correspondence Analysis, which defines the differentiation criteria and the Hierarchical Clustering that presents the groups of the persons according to their common characteristics. In other words, the factorial axes are the criteria of differentiation which elucidate the opposing points in the answer of the subjects, while the hierarchical analysis shows the clusters of students according to their replies and common traits.

SPAD v 4.5 software offered by the Faculty of Humanities of the University of the Aegean was used to analyze the data.

3. Descriptive Analysis

63.39% of students are from urban areas and 36.60% are from rural areas (Table 1).

Table 1. Area of residence

	n	%
Urban	2168529	63.39%
Rural	1252204	36.60%
Total	3420734	100.00%

50.96% of students are men and 49.04% are women (Table 2).

Table 2. Sex

	n	%
Men	1743190	50.96%
Women	1677544	49.04%
Total	3420734	100.00%

9.67% of students are 5 years old, 9.27% are 6 years old, 9.96% are 7 years old, 9.75% are 8 years old, 9.88% are 9 years old, 9.12% are 10 years old, 9.48% are 11 years old, 8.97% are 12 years old, 9.32% are 13 years old, 8.80% are 14 years old, and 5.78% of students are more than 14 years old (Table 3).

Table 3. Age

	n	%
5	330756	9.67%
6	317200	9.27%
7	340601	9.96%
8	333404	9.75%
9	338031	9.88%
10	311889	9.12%
11	324319	9.48%
12	306958	8.97%
13	318857	9.32%
14	300943	8.80%
More than 14 years	197777	5.78%
Total	3420734	100.00%

99.82% of students attend classes and 0.18% do not attend classes (Table 4).

Table 4. Attend class

	n	%
Yes	3414554	99.82%
No	6180	0.18%
Total	3420734	100.00%

82.44% of students attend classes in the morning, 15.91% in the afternoon, 0.53% in the evening, 0.01% attend all-day classes, 0.37% attend classes in two periods, 0.57% at distance, and 0.18% do not attend classes (Table 5).

Table 5. Time of attendance

	n	%
Morning	2819911	82.44%
Afternoon	544104	15.91%
Evening	18047	0.53%
All day	376	0.01%
Two periods	12686	0.37%
At distance	19429	0.57%
NA	6180	0.18%
Total	3420734	100.00%

0.02% of students do not attend classes due to lack of economic resources, 0.01% due to school failure, 0.01% due to illness or disability, 0.001% due to lack of family support, 0.001% due to shortage of educational institutions, 0.01% are not interested, 0.08% due to lack of positions, 0.04% other, and 99.82% do not attend classes (Table 6).

Table 6. Reason for not attending

	n	%
Lack of economic resources	629	0.02%
School failure	482	0.01%
Illness or disability	432	0.01%
Lack of family support	28	0.001%
Shortage of educational institutions	43	0.001%
Not interested	328	0.01%

Lack of positions	2819	0.08%
Other	1419	0.04%
NA	3414554	99.82%
Total	3420734	100.00%

0.17% of the students' parents speak only indigenous language, 9.11% indigenous and Spanish language, 89.74% only Spanish, 0.97% Spanish and foreign language, 0.002% indigenous language and foreign language, 0.001% foreign language and 0.01% do not speak (Table 7).

Table 7. Parents' language

	n	%
Only Indigenous language	5798	0.17%
Indigenous and Spanish language	311710	9.11%
Only Spanish	3069684	89.74%
Spanish and foreign language	33047	0.97%
Indigenous language and foreign language	76	0.002%
Foreign language	21	0.001%
Do not speak	398	0.01%
Total	3420734	100.00%

0.15% of students speak only indigenous language, 6.16% speak indigenous and Spanish language, 93.00% only Spanish, 0.53% Spanish and foreign language, 0.01% indigenous and foreign language, 0.13% foreign language, and 0.03% do not speak (Table 8).

Table 8. Students' language

	n	%
Only indigenous language	5294	0.15%
Indigenous and Spanish language	210591	6.16%
Only Spanish	3181123	93.00%
Spanish and foreign language	18005	0.53%
Indigenous language and foreign language	229	0.01%
Foreign language	4302	0.13%
Do not speak	1190	0.03%
Total	3420734	100.00%

10.60% of students consider themselves indigenous, 1.34% Afro-Ecuadorian, 2.09% black, 1.40% mulatto, 4.72% montubio, 78.41% mestizo, and 1.42% white (Table 9).

Table 9. Ethnic self-identification

	n	%
Indigenous	362467	10.60%
Afro-Ecuadorian	45882	1.34%
Black	71648	2.09%
Mulatto	47827	1.40%
Montubio	161316	4.72%
Mestizo	2682214	78.41%
White	48730	1.42%
Other	650	0.02%
Total	3420734	100.00%

80.50% of students were born in the same city they are living now, 18.14% were born elsewhere in the country,

and 1.36% was born in another country (Table 10).

Table 10. Place of birth

	n	%
In this city	2753721	80.50%
Elsewhere in the country	620611	18.14%
In other country	46402	1.36%
Total	3420734	100.00%

8.27% of students use cellphones, and 90.96% do not use cellphones (Table 11).

Table 11. Use of cellphones

	n	%
Yes	283052	8.27%
No	3111521	90.96%
NA	26161	0.76%
Total	3420734	100.00%

Only 3.71% of students use smartphones (Table 12).

Table 12. Use of smartphone

	n	%
Yes	126996	3.71%
No	156055	4.56%
NA	3137682	91.73%
Total	3420734	100.00%

58.51% of students have used computer during the last 12 months, and 40.72% have not used computer (Table 13).

Table 13. Use of computer during the last 12 months

	n	%
Yes	2001564	58.51%
No	1393009	40.72%
NA	26161	0.76%
Total	3420734	100.00%

54.95% of students used internet during the last 12 months, and 44.29% did not use internet (Table 14).

Table 14. Use of internet during the last 12 months

	n	%
Yes	1879639	54.95%
No	1514934	44.29%
NA	26161	0.76%
Total	3420734	100.00%

42.70% of students are from the mountain region, 50.50% are from the coastal region, 6.63% are from the Amazon region, and 0.16% is from the insular region (Table 15).

Table 15. Natural region

	n	%
Mountain region	1460789	42.70%
Coastal region	1727419	50.50%
Amazon region	226888	6.63%
Insular region	5638	0.16%
Total	3420734	100.00%

32.74% of students suffer income poverty, and 66.31% do not suffer income poverty (Table 16).

Table 16. Income poverty

	n	%
Not poor	2268391	66.31%
Poor	1120067	32.74%
NA	32275	0.94%
Total	3420734	100.00%

12.56% of students are indigent, and 86.50% are not indigent (Table 17).

Table 17. Extreme income poverty

	n	%
Not indigent	2958853	86.50%
Indigent	429606	12.56%
NA	32275	0.94%
Total	3420734	100.00%

4. Factorial Analysis of Multiple Correspondences

The method of factorial analysis of multiple correspondences was utilized with the objective of revealing how the subjects of the survey differ according to their answers (Stefos & Koulianidi, 2016). The criteria which differentiate the surveyed students are:

The first criterion of differentiation (percentage of inertia 13.48%)

The first differentiation criterion is consisted on one hand of students who consider themselves mestizo, speak only Spanish, live in urban areas of the coastal region, are not indigent, do not suffer from income poverty, and they did not use neither computer or internet during the last twelve months. On the other hand, there are students who consider themselves indigenous, they speak indigenous and Spanish language, live in rural areas of Amazon region, and suffer from poverty.

The second criterion of the differentiation (percentage of inertia 9.16%)

The second differentiation criterion is consisted on one hand of students who use smartphones, have used computer and internet during the last twelve months, are indigenous from the Amazon region, and speak indigenous language and Spanish. On the other hand, there are students who do not have smartphones, and have not used computer or internet during the last twelve months, their parents speak only Spanish and they are from the Coast region.

The third criterion of differentiation (percentage of inertia 6.18%)

The third differentiation criterion is consisted on one hand of students who do not own an active cellphone, have used computer and internet during the last twelve months, are 10 or 11 years old, and are from the mountain region. On the other hand, there are students with active smartphones, who have not used computer or internet during the last twelve months, are between 5 to 14 years of age, and are from the coastal region.

5. Hierarchical Analysis

The hierarchical analysis consists of eight clusters of students (Valdivieso et al., 2017).

First cluster (25.84% of the sample)

The first cluster consists of students who consider themselves mestizo, used computer and internet during the last twelve months, and are not poor. These students speak only Spanish and attend school in the mornings.

Second cluster (11.20% of the sample)

The second cluster consists of students who attend school in the afternoons, have used computer and internet during the last twelve months, are from the coastal region, live in urban areas, and speak only Spanish.

Third cluster (7.66% of the sample)

The third cluster consists of students who consider themselves mestizo, speak only Spanish, attend classes in the mornings, do not own an active cellphone and have not used a computer or internet during the last twelve months.

Fourth cluster (9.95% of the sample)

The fourth cluster consists of students who are indigents, live in rural areas, and speak only Spanish. These students have not used the internet during the last twelve months, do not have an active cellphone, and attend school in the mornings.

Fifth cluster (14.28% of the sample)

The fifth cluster consists of students who have not used computers and internet during the last twelve months, speak only Spanish, are from the coastal region, do not have an active cellphone, and are not indigents.

Sixth cluster (8.57% of the sample)

The sixth cluster consists of students who are 5 years old, have not used a computer or internet during the last twelve months, speak Spanish, consider themselves mestizo, are not indigent, and do not have an active cellphone.

Seventh cluster (8.23% of the sample)

The seventh cluster consists of students who have an active smartphone, have used computers and internet during the last twelve months, most of them are 14 years old, are not poor and live in urban areas.

Eighth cluster (14.26% of the sample)

The eighth cluster consists of students who live in rural areas, have not used computers and internet during the last twelve months, do not have an active cellphone, are poor and the majority of them consider themselves indigenous.

The differences between these clusters can be seen in Figure 1 where the Correspondence Analysis graph (factorial levels 1x2) presents the centroids of the eight groups in the two axes. Additionally, it defines the differences and similarities between the students of these eight groups (Stefos & Papapostolou, 2013).

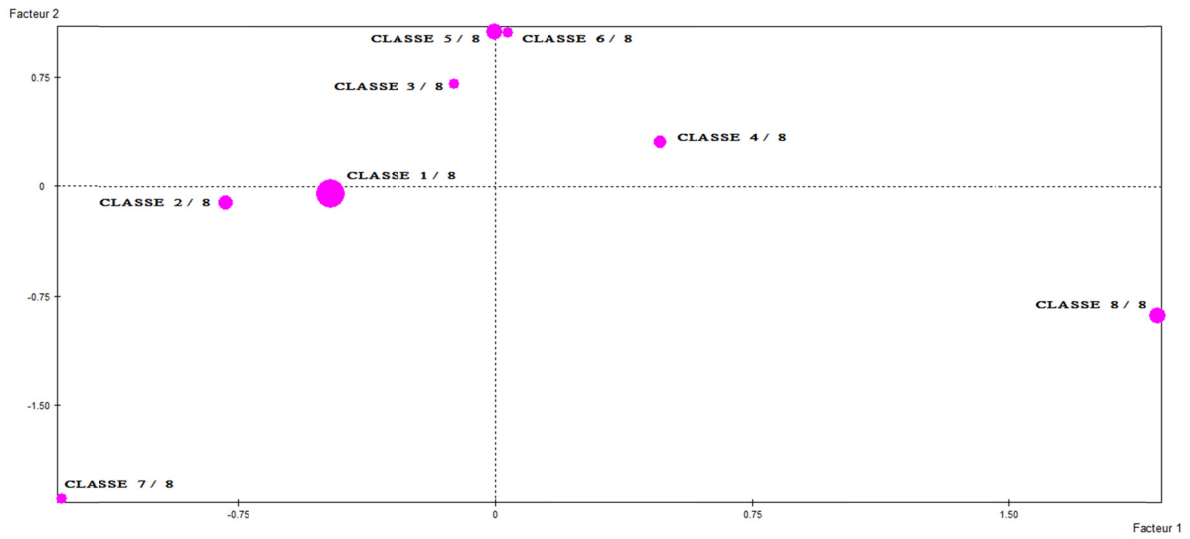

Figure 1. Correspondence analysis

6. Conclusion

The aim of the present study was to investigate the social profile of the students of the Basic General Education of Ecuador. We used the National Survey of Employment, Unemployment and Underemployment of 2015 and investigated the variables: area of residence, sex, age, attend class, time of attendance, reason for not attending, parents' language, students' language, ethnic self-identification, place of birth, use of cellphones, use of smartphone, use of computer, use of internet, natural region, income poverty, and extreme income poverty (Kampouropoulou et al., 2015).

The descriptive analysis showed the frequency and percentages of the variables used in the investigation, while the multidimensional statistical analysis showed the principal and most important criteria of differentiation and classification among the clusters of students under investigation (Stefos, 2015).

The results of the descriptive analysis are confirmed by the multiple correspondence analysis and the hierarchical classification (Morineau, 1984). The analysis of the data showed that 78.41% of students of Basic General Education in Ecuador consider themselves mestizo and 10.60% indigenous; 93.00% speak only Spanish and 6.16% speak indigenous and Spanish language; 82.44% attend classes in the morning and 15.91% in the afternoon; only 0.18% of the students do not attend classes; 8.27% of students use cellphones, 3.71% smartphones, 58.51% computers and 54.95% internet; 32.74% of students suffer income poverty and 12.56% are indigent (Stefos et al., 2011).

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The Effectiveness of an Interactive Training Program in Developing a Set of Non-Cognitive Skills in Students at University of Petra

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Abstract

This study aimed to investigate the effectiveness of interactive training programs in developing a set of non-cognitive skills in students at the University of Petra. Furthermore, it sought to examine the impact of the sex, academic year, and university major variables on developing these skills in students who underwent the training program, as well as whether a correlation exists between the GPA of students in the experimental group and how they acquired these non-cognitive skills. The study focused on the following six non-cognitive skills: (a) locus of control; (b) planning; (c) empathy; (d) self-confidence; (e) growth mindset; and (f) grit. The study sample was randomly distributed into three groups: the first (Group A) attended an interactive training program; the second (B) attended a training course using a traditional teaching strategy; while the third (C) did not attend any programs whatsoever. The researchers have designed an interactive training program and a questionnaire to measure the sample's non-cognitive skills on all six dimensions. The results indicate statistically significant differences between the different teaching methods used on all three groups (A, B, and C) in the overall test, as well as on three dimensions of empathy, growth mindset, and grit in favor of the experimental group (A). Additionally, findings have revealed no significant differences in the extent to which students in the experimental group (A) have acquired non-cognitive skills on the variables of sex, academic year, and university major. Moreover, the study did not show significant correlation between the extent to which students acquired these non-cognitive skills and their GPAs.

Keywords: non cognitive skills, thinking skills, grit, mindset, empathy

1. Introduction

1.1 Introducing the Problem

By the dawning of the 21st century, the world underwent a rapid growth in knowledge embodied in an information technology revolution, where technology came to occupy an assured position in all aspects of life, including education, medicine, agriculture, etc. This has posed a new a challenge for humans' skills and capabilities as traditional teaching methods (which emphasize on teaching students to read and write, do math, or possess academic competence) are no longer sufficient for achieving success, whether in students' career path or practical life (Saavedra & Opfer, 2012). There now is a dire need to help individuals acquire and develop a number of non-cognitive competencies and skills, or what may be referred to as "The Keys to Success", which would enable them to face such challenges. In the upcoming decades, global economics are expected to double, which will offer various and new vacancies where it is necessary for an individual to possess certain skills; work in the future is expected to require proficiency, initiation, determination, decisiveness, and the ability to adapt. Without a doubt, such challenges call for the use of new methods of learning – methods that largely differ from those now used inside the classroom. The world of tomorrow needs teachers to focus on helping students acquire a number of competencies or skills, to develop their curiosity, self-control, self-motivation, teamwork, and the ability to overcome cultural and linguistic barriers (Roberts, 2009).

Therefore, it is clear that there exists a growing worldwide movement in hopes of exploring these "non-cognitive" competencies, which consist of characteristics, social skills, attitudes, behaviors, and intrapersonal resources, which individuals of high achievement depend on to reach success (Shechtman et al., 2013). This has caught researchers' attention in the past decade, leading them to study these non-cognitive competencies and stress on the importance of making students acquire them (Dweck, 2007a; Chang, 2014). These studies were based on the

careful examination of patterns of failure and success. Moreover, millions of parents, teachers, and students have emphasized on the importance of these skills, and have pointed out the inconsistencies between what school curriculum offer at the current time, and what students will need to face the challenges of the current century (Roberts, 2009).

Undoubtedly, this interest in such skills can help improve the academic performance of students, and is a crucial component of the social mobility. Furthermore, it offers students better opportunities in life, and helps elevate the mental health of children by assisting them in managing the setbacks and stress of our exceedingly modern lifestyles. This may also help in meeting the demands of employers by producing high quality future workers who possess skills necessary for employment. In addition to the positive impact this may have on society as a whole, this assists individuals in society in better understanding and coping with people around them (Roberts, 2009; Chang, 2014).

It is up to the educational community to design suitable learning environments and implement new teaching approaches, so to reinforce these non-cognitive competencies or skills in students. These will allow students to understand their surroundings more clearly, practice effective problem-solving, and efficiently handle emerging ideas that move humanity forward with creativity, so to help societies progress and face 21st century challenges (Shechtman et al., 2013). This study will focus on the following non-cognitive competencies [or skills]: (a) locus of control; (b) planning for the future and setting goals; (c) empathy; (d) self-confidence; (e) growth mindset; and (f) grit.

Grit (as well as tenacity, and perseverance) are considered to be non-cognitive key factors which an individual must acquire in order to do his or her best in achieving long-term and high-level goals and resist challenges and obstacles he or she may face whether during education years or later on (Shechtman et al., 2013). Duckworth et al., (2007) defines Grit as "Tenacity and enthusiasm required achieving long-term goals". This is done by ensuring that the individual works persistently, with high efforts and focus for extended periods of time despite setbacks and obstacles that may stand in his or her way. In other words, it is not to surrender or withdraw, nor to fear failure; but rather to proceed, follow up, obtain experiences from previous failures, and not to quit the task at hand simply because one prefers a refreshing change, or because setbacks or obstacles may stand in the way of success.

Furthermore, (Duckworth et al., 2007) asserted that grit (as well as tenacity and perseverance) are not new concepts, as Galton (1869) collected information from a significant number of successful individuals of all times (stretching on a time period of 100 years or more), and concluded that ability alone is not sufficient for achieving success. The individual may also need zeal and hard work. In other words, successful individuals were made rather than born; and are usually very typical people who achieved success in their lives by being motivated and willing to accomplish, with a love for learning, challenging, and overcoming obstacles. These are seen as the most crucial skills with which one may provide students (Roberts, 2009).

Grit may be reinforced in students through focusing on setting valuable goals which are worthy of the effort put into achieving them. Furthermore, these goals must be within the range of students' abilities, and should neither be too easy nor too difficult. It should be aided by a supportive and strict surrounding environment, in a classroom run by fairness, respect, and high expectations, where more focus is put into effort rather than ability. This environment must also provide students with necessary resources such as materials, teachers, and time so to help students overcome setbacks which they may face when seeking to achieve such goals. Named setbacks include distraction, boredom, lack of resources, and untimely circumstances (Shechtman et al., 2013; Chang, 2014).

Since grit and zeal push the individual to challenge setbacks in hopes of achieving his or her goals, it would be essential to benefit from students' psychological sources (such as their academic mindsets, effortful control, strategies, and tactics). It should be stated that different socio-cultural contexts play a vital role in developing grit since they affect what students appreciate, which of these preferences they should seek to accomplish, the type of challenges they may face, and the type of resources accessible to them. Studies have shown that students from highly underprivileged backgrounds face a substantial amount of pressure, and receive very limited social support, which weakens their tenacity toward accomplishing a wide array of goals (Hanford, 2012; Shechtman et al., 2013). Moreover, there is a high price for grit (and a number of potential risks) since tenacity and perseverance may not always be effective in overcoming obstacles. This is particularly true when the set goals are unimportant or unsuitable for the students, which causes them to feel anxious, distracted, and mentally stressed, and by that negatively impacting their ability to recall and learn, as well as damaging their mental health (Shechtman et al., 2013). Additionally, an individual may not be able to develop grit (or tenacity and

perseverance) due to personal factors (whether external or internal), such as lethargy, including different life appeals which are tricky to resist. However, grit may be developed through practical training and conceptual teaching, providing the individual the opportunity to discover the importance of grit and to foster his or her ability to overcome setbacks, and boosting his or her motivation and aspirations (Glei, 2011; Chang, 2014).

Numerous societies uphold the value of talent, and many may assume that those who possess high intelligence hold the keys of success exclusively. Nevertheless, more recent studies in this field, such as those conducted by Dweck and her colleagues, show that success does not solely depend on ability or intelligence, but also on the constant development of abilities or talents, and that the brain has the capacity expand further in all phases of life (Dweck, 2007;Yeager & Dweck, 2012).

Dweck is considered to be a pioneer in this field, for her employment of the new term "Mindset", which refers to the beliefs an individual may hold regarding him/herself, as well as his or her basic qualifications. Furthermore, Dweck called attention to two basic types of mindsets – "growth" and "fixed". Individuals with a fixed mindset (theory of inherited intelligence) believe that their qualifications of intelligence, creativity, or talent are all stable and fixed. On the other hand, individuals with a growth mindset (that intelligence develops) believe that their abilities can further progress through hard and steady work, that these abilities are only a starting point, and that the recipe to success requires effort, learning, and tenacity (Dweck, 2010a; Blackwell et al., 2007).

Individuals with a fixed mindset would rather not exert any extended efforts. Furthermore, they view challenges and the exertion of efforts as a threat to their egos, causing them to lose their self-confidence when the tasks assigned are too difficult to fulfill. In addition, they usually do not acknowledge the need to learn and expand their knowledge since they are convinced that they already possess great intelligence – hindering them from expanding their capabilities and improving themselves, while pushing them maintain a shallow facade of high intelligence and perfection (Dweck, 2007b).

Alternatively, students with a growth mindset may feel that learning is more important than obtaining high scores, or may believe that hard work is of utmost significance and that '*the more one works, the better one gets'*. They may thus seek to choose tasks that require a sense of challenge, and will attempt to face setbacks and deficiencies through changing the strategies they are using to approach the problem or given task (Dweck, 2007b).

In addition, students who believe that it is possible to improve an individual's abilities are more likely to score higher on more difficult (or challenging) courses, such as mathematics, and exhibit lower levels of stress and violent behaviour. Furthermore, their academic performance tends to reflect great improvement (Yeager & Dweck, 2012).

Furthermore, Dweck implies that teachers could push students into a fixed mindset when complementing their personal characteristics such as natural intelligence, and by placing emphasis on skill rather than performance. Alternatively, when teachers come to appreciate the efforts exerted by their students, or the strategies students may put into use to accomplish their goals, they help shape their growth mindset. This teaches students to learn from their mistakes and challenge themselves to achieve their aims (Mueller & Dweck, 1998).

To help provide students with a classroom environment that encourages them to have a growth mindset, Dweck and Blackwell have designed and enhanced classroom practices that teachers may use, including:

1) Setting high expectations and challenging one's students, thus making it known to students that they possess the necessary ability to meet these expectations;
2) Setting up a classroom environment that recognizes challenges, exerted efforts, and learning more than it would recognize a quest for perfection.
3) Providing students with feedback that focuses on processes (which are aspects students have control over), rather than their personal abilities, in addition to avoiding reinforcing student's intelligence levels, but alternatively focusing on the tasks they perform to achieve success.
4) Ensuring that students have a clear understanding of mental flexibility, and that they understand how brains grow by learning and the exertion of efforts (Dweck, 2010b).

The concept of the locus of control, developed by Rotter, has gained massive attention from researchers, and has been employed to explain individual differences in students' behavior and cognition of environmental situations.

According to Rotter (1966), the locus of control of an individual is how he or she acknowledges the link between his or her behavior, and what consequences this behavior may hold. Rotter draws a line between two types of individuals. The first type are those with internal control – who attribute each and every consequence and

outcome of their work (whether of success or failure) to themselves, how high or low their will power had been, the level of their own abilities, and their personal internal characteristics. These individuals are known to be confident, ambitious, and high achievers who can take responsibility and handle both rigidity and flexibility. The second type are those with external control, who attributed everything in their lives (whether positive or negative) to external factors and circumstances such as luck, chance, and power. This type often lacks self-confidence, has low expectations for success, and is self-centered.

Empathy is a psychological and social variable which plays a crucial role in the lives of individuals (Al-Obeidi, 2011). It refers to one's ability to share with others and understand their mental or emotional state. In other words, it's to '*put yourself in someone else's shoes'* (English proverb).

Empathy consists of two components: emotional and action. The emotional component refers to feeling the misfortunes and obstacles one has experienced in life, whereas the action component refers to supporting and encouraging someone to endure what he or she has gone through (Al-obeidi, 2011). Empathy is a way of distinguishing other peoples' feelings and pinpointing the reasons behind them, as well as being able to share one's emotional experience without becoming part of it. Researchers assert that empathy is an effective communication skill and ability to teach and learn; and that it has received only little attention in previous research (Ioannidou & Konstantikaki, 2008). Moreover, empathy is not identical nor more intense than sympathy; rather, it is the ability to listen to (and cogitate on) others in hopes of familiarizing one's self with their thoughts and feelings, and thus being able to offer help to them (Ernst, 2001).

Philosophers and educators have long emphasized on the importance of self-confidence as one of the key skills that reinforce motivation in individuals and influence their social interactions and feelings; additionally, it helps individuals who lack will power (Bénabou & Tirole, 2005). Self-confidence is considered to be one of most significant features an individual could acquire from the social environment in which he/she lives in and interacts with (At-ta'i, 2007). Furthermore, it helps individuals achieve psychological compatibility and gives them the ability to overcome hardships and work hard to achieve goals and desired outcomes (Gharghout, 2016). Individuals with self-confidence trust others and are more interested in initiating work while encouraging others to tag along, and are also quite willing to listen to others' problems. Such individuals are better at time management, and have higher levels of self-acceptance while maintaining the ability to reflect upon their actions, and never experience hopelessness or despair – they place high value on achievement, and thus are more capable of occupying high positions in society.

1.2 Literature Review

Researchers have shown great interest in non-cognitive skills or competencies in relation to a number of different variables. For example, Al-Obeidi (2011) investigated the relationship between empathy and violent behavior in a sample of middle school students in Baghdad – her study included 218 male and female students, on whom she implemented the Empathy Scale and the Violent Behavior Scale. Her findings indicated that the sample had a tendency to empathize, and that females display more empathy than males, in addition to a negative correlation between empathy and violent behavior.

Moreover, Duckworth et al., (2007) conducted a series of studies on grit and its importance in achieving (long term) goals, the findings indicated that grit accounted for 4% of variance in successfully achieving desired outcomes. Furthermore, the findings of this series of studies indicated that grit is not positively correlated with IQ, but rather with the Big Five Conscientiousness; in other words, it means that achieving difficult goals does not depend on talent, but rather on continuous hard work. In addition, study results indicated that older students had stronger grit, and individuals with more grit are less likely to seek changing their careers. Also, students with more grit had higher GPA compared to their peers. Recently, Gharghout (2016) conducted a study on the relationship between self-confidence and achievement motivation in a sample of university students at Eloued University. The results pointed toward a correlation between self-confidence and achievement motivation, but no statistically significant differences on the variable of sex in relation to self-confidence.

Furthermore, in her study, At-Ta'i (2007) sought to investigate the level of self confidence in social studies students at the University of Mosul and how it relatives to academic achievement motivation. Her study indicated that students had a good level of self-confidence, and that self-confidence was correlated with academic achievement motivation, but that there were no statistically significant differences in self-confidence in relation to any of the three variables of sex, academic year, and university major.

In another study on internal and external locus of control by Judge and Bono (2001) which aimed to investigate the relationship between the four features (Self-Esteem, Self-Efficacy, Locus of Control, and Emotional Stability), and Job Satisfaction and Job Performance, findings revealed a correlation between the aforementioned

four features and the latter. Likewise, Chang (2014) investigated the importance of non-cognitive skills in predicting the performance of university students in their freshmen year and up until graduation, and found that academic performance was the most suitable indicator of student perseverance for graduation. His findings asserted that students' sex, high-school scores, and scores on the perseverance test were indicators of their GPA during their freshmen year.

1.3 Purpose of the Study

This study aims to achieve the following: (1) build and design training programs that enable students to develop a set of non-cognitive skills that may assist them in solving problems they face whether in daily or academic life; and (2) investigate the effect of training programs in helping a sample of students (in the Faculty of Arts at University of Petra) acquire a set of non-cognitive skills.

1.4 Significance of the Study

The significance of the study lies in that it seeks to develop a training program which should include a set of non-cognitive skills that university students currently need in order to face challenges and rapid changes in the world. Furthermore, the study is significant in that it aims to investigate the extent to which students at University of Petra possess such skills, which can positively impact their performance and ability to face problems and achieve academic or life-related success.

The significance of the study may be argued as follows:

(a) It seeks to provide a training program that fosters a set of non-cognitive skills in students, and this training program may be used by interested individuals in enriching university students.

(b) It seeks to assess the effectiveness of the aforementioned program in helping students acquire these non-cognitive skills.

(c) It paves the way for future studies that researchers ought to conduct to tackle the effectiveness of training students to foster their non-cognitive skills in different academic levels.

1.5 Problem of the Study

The problem of this current study is marked by its attempt at exploring the effectiveness of training programs in developing and reinforcing a set of non-cognitive skills in undergraduates. This is of particular relevance since educational literature have emphasized the importance of the training programs in enabling students to acquire non-cognitive skills for what benefits they hold for the individual as well as society. Students with grit, a growth mindset, empathy, the ability to plan, internal control, and self-confidence possess what it takes to solve problems creatively, and have higher levels of motivation and are more aware of themselves and their abilities.

Since these non-cognitive skills are of crucial importance, and since they may be developed through training, the researchers have decided to tackle and investigate this topic, especially due to the fact that few studies (as far as the researchers are informed on a local level) have tackled skills and characteristics such as the growth mindset, grit and empathy. Thus, this study could be thought of as a preliminary paper that aims to familiarize educators with the importance of the aforementioned skills, and assist researchers in conducting similar and furthering studies that explore other strategies for developing these skills.

1.6 Operational Definitions

- **Students with internal locus of control** are those who believe that their success or failure at school is entirely up to them and what variety of features, skills, or experiences they possess. As a result, such students assume full responsibility for whether they fail or pass any given course.
- **Students with external locus of control** are those who believe that their success or failure at school does not depend on them, but is rather affected by external factors which they cannot control. Therefore, such students believe they are not responsible for whether they fail or pass any given course.
- **Planning to achieve goals** is an individual's ability to control him/herself or others, and manage time in order to achieve desired goals.
- **Empathy** is the ability to share the positive and/or negative feelings and emotions of another person.
- **Growth Mindset** belongs to a person who believes that abilities can keep on growing through hard and consistent work, and that success comes as a result of hard work, learning, and perseverance.
- **Fixed Mindset** belongs to a person who believes that intelligence, creativity, and talents are specific and fixed features which do not grow.

- **Grit** is to work hard, exert great efforts, and show interest for a an extended period of time without giving up or quitting, and without abandoning a task for a simple desire for change or because the task may be too difficult, but rather to maintain steadfastness and gaining experiences from previous failures.
- **Self Confidence** is an individual's ability to respond in ways compatible with the stimulants facing him/her, and realizing his/her acceptance of others and his/her own self to a high extent.

1.7 Study Questions

1) What is the impact of interactive training programs on developing a set of non-cognitive skills in university students as opposed to using traditional methods?
2) Are there any differences in the extent to which university students in the experimental group acquire this set of non-cognitive skills in relation to (a) sex, (b) academic year/level, and (c) and university major?
3) Is there a correlation between the extent to which students in the experimental group possess non-cognitive skills and their GPA?

1.8 Study Population

A group of 174 male and female students from different departments at the Faculty of Arts (and a number of other faculties) at University of Petra participated in this study during the first semester of the academic year 2015/2016. Students grouped by major were as follows: 46 majoring in English Literature, 44 in Journalism, 45 in Educational Sciences, and 31 in other majors. Of these, 74 were freshmen, 65 sophomores, 17 juniors, and 18 seniors. Furthermore, 36 of the participants were male and 138 females. Participants in the study sample have been randomly distributed into three groups, showing that 57 were experimental, 58 were traditional, and 59 students were in the control group.

2. Method

A semi-experimental approach has been used in this study so to control the independent variable, which was training a group of individuals in non-cognitive skills through a training program. The first group in the study sample attended a training program; while the second was taught these skills with the use of traditional methods; whereas the third group did not undergo any courses whatsoever.

2.1 Tools

1) **Training Program:** a training program has been designed and implemented to help students acquire a set of non-cognitive skills through fostering these skills in students by interactive training that largely depend on brainstorming, discussion, dialogue, team work, streaming of and illustrative movies.
2) **Non-Cognitive Skills Scale**: a Literature Review has been conducted with the intention of designing a questionnaire to measure the extent to which students possess this set of non-cognitive skills. The questionnaire designed by the researchers consisted of 54 items of which: 6 for measuring growth mindset, 12 for the locus of control, 12 for empathy, 12 for grit, 12 for self-confidence, and finally 13 for planning and setting of goals . Each item had two-choice answers, where giving the first answer indicated that an individual possess this particular skill, and the second answer indicated that he did not.

The participants were placed into three groups randomly for the purpose of the study, as shown below:

Group A: This group has been taught a set of non-cognitive skills, which consisted of the following: internal locus of control, grit, planning and setting of goals, growth mindset, self-confidence, and empathy. Students have acquired these skills by attending an obligatory faculty course titled "Teaching Thinking", where they engaged in a learning process based on interactive tasks. This has enabled students to become more competent in creatively solving problems they may face at university or in daily life. These non-cognitive skills have been delivered to the students through interactive activities they perform individually or in groups; where the main concepts of each activity were presented through streaming of short films or performing a variety of planned activities. There were no text books or written passages for the students to study from. The students were assessed by their performance in practical and interactive projects, and the course had no pen-and-paper tests or exams.

Group B: This group was taught a set of non-cognitive skills, which included internal locus of control, grit, planning and setting of goals, growth mindset, self-confidence, and empathy through an obligatory faculty course titled "Teaching Thinking". Group B engaged in a learning process based on a traditional instruction method with the use of lecturing, discussion, and dialogue. The students in this group were assigned a reference text book, and were assessed through pen-and-paper examinations which contained objective and essay-like questions.

Group C: This group was set as a control group. No participants in group C underwent or attending the aforementioned courses.

2.2 Validity and Reliability of the Scale

The questionnaire was reviewed by a group of experts to confirm its validity and the suitability of the items in measuring the level of non-cognitive skills in students. Moreover, Cronbach's alpha was used to measure the validity of the research tool, which gave a reliability coefficient of $\alpha = 0.85$ for the overall Non-Cognitive Skills Scale, and that of 0.60 for the growth mindset, 0.72 for the locus of control, 0.74 for empathy, 0.75 for grit, 0.81 for self-confidence, and 0.66 for planning to achieve goals. These values are acceptable for research purposes.

3. Results

To answer the first question "What is the impact of interactive training programs on developing a set of non-cognitive skills in university students as opposed to using traditional methods"? the means and standard deviations of students' scores on the overall non-cognitive skills scale designed for the purpose of this study were calculated, as well as on all six dimensions of the three groups. Table 1 illustrates these results.

Table 1. Mean and standard deviation values of the study sample's scores on the overall scale and its six dimensions in three separate groups

	Locus of Control		Planning		Empathy		Self Confidence		Growth Mindset		Grit		total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Experimental Group A	83.6	9.5	78.9	10.4	89.5	5.9	78.9	8.8	92.9	12.2	89	8.2	84.9	5.0
Traditional Group (B)	82.0	8.5	77.7	10.6	83.5	10.4	77	11.2	83.6	14.2	81.4	12.3	80.6	6.5
Control Group C	82.9	9.2	78.8	10.2	85.3	9.6	78.3	10.2	88.2	13.9	84.9	11.5	82.1	6.5
Total	82.9	9.2	78.8	10.2	85.3	9.6	78.3	10.2	88.2	13.9	84.9	11.5	82.5	6.3
F-value	0.39		0.5		9.1		0.64		6.99		6.8		7.5	
Sig.	0.68		0.59		0.000		0.53		0.001		0.001		0.001	

Table 1 clearly indicates that Group A, which had undergone the training program, had the highest mean on the overall test (84.9), followed by the Group C, the control group which underwent no training programs whatsoever (82.1), whereas students in Group B had the lowest mean of all (80.6). On the six dimensions of the scale, Group A had the highest means on all dimensions, compared to those in Groups B and C.

To establish whether any statistical significance exists, F-values were calculated for the overall scale and for all six dimensions therein, as shown at the bottom of Table (1). The F-values indicate statistically significant differences between the different methods used on Groups A-C in the overall test, and on three dimensions: empathy, growth mindset, and grit.

To explain these significant differences, the Post Hoc Comparisons were calculated using Tukey's Test. The results indicated a statistically significance difference between methods used in Group A and B, in favor of Group A; in addition to a statistically significant difference between methods used in Group B and Group C (the control group), in favor of Group C.

Also, the percentages of students' scores on the overall scale in all three methods were calculated. These percentages were sorted into three levels: high, moderate, low. Students were distributed into these three different levels according to the following:

- If students had a percentage between 80%-100%, they were said to have high levels of non-cognitive skills.
- If students had a percentage between 60%-79%, they were said to have moderate levels of non-cognitive skills.
- If students had a percentage lower than 60%, they were said to have low levels of non-cognitive skills.

Table 2 demonstrates the distribution of the study samples' scores on the questionnaire.

Table 2. The distribution of the study sample into three groups based on their performance level on the non-cognitive performance scale (high, medium, and low)

	High 80%-100% (N)	Moderate 60%-79% (N)	Low Below 60% (N)
Experimental Group (A)	80.7 % (46)	19.3 % (11)	-
Traditional Group (B)	62.1 % (36)	36.2 % (21)	1.7 % (1)
Control Group (C)	59.3 % (35)	40.7 % (24)	-

The results shown in Table 2 indicate that students who had a high level of non-cognitive skills were those in Group A (80.7%), followed by Group B (62.1%), and finally the control group, Group C (with a percentage of 59.3%).

To answer the second question **"**Are there any differences in the extent to which university students in the experimental group acquire this set of non-cognitive skills in relation to (a) sex, (b) academic year/level, and (c) and university major**"**?

The means and standard deviations of students' scores on the overall non-cognitive skills scale as well as on all six dimensions on the sex variable were calculated for experimental group. Results are shown in Table 3.

Table 3. Mean and standard deviation values of the experimental group's scores on the sex variable on the overall scale and its six dimensions

	Locus of Control		Planning		Empathy		Self Confidence		Growth Mindset		grit		total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Male (12)	84.7	6.7	80.2	9.0	88.2	5.6	79.2	10.5	89.5	17.4	89.1	9.0	84.8	4.1
Female (45)	83.3	10.1	78.5	10.8	89.9	6.0	78.9	3.4	93.9	10.4	89.0	8.0	85.0	5.3
t	0.448		0.498		-0.892-		0.096		-1.090		0.048		-0.090	
sig	0.656		0.621		0.376		0.924		0.280		0.962		0.928	

Results in Table 3 indicate that differences between means of male and female students were very small, with slightly higher mean scores in female students. In regards to the scale's dimension, findings have shown that mean values of male students were higher compared to female students in experimental group in the following dimensions: locus of control, planning and setting of goals, self-confidence, and grit; whereas the mean scores of females were higher in empathy and growth mindset, as well as on the overall scale. To establish whether these differences were statistically significant, their t-value was calculated.

The t-values do not point toward any statistically significant differences on the mean values of male and female students, whether on the overall scale or on each of the six dimensions.

To determine whether students differed in their levels of these non-cognitive skills in relation to their academic year, the means and standard deviations of students' scores in experimental group were calculated as show in Table 4, on the variable of Academic Year.

Table 4. Mean and standard deviation values of study experimental group's scores on the academic year variable

	Locus of Control		Planning		Empathy		Self Confidence		Growth Mindset		Grit		total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Freshman 27	80.7	11.1	76.2	11.3	90.4	5.9	76.9	7.3	94.4	8.7	89.7	7.0	83.9	4.8
Sophomore 19	86.0	7.9	79.8	8.4	89.3	5.1	81.8	8.2	95.2	11.9	88.5	8.8	86.2	4.5
Junior 5	88.3	3.5	81.7	12.4	85.8	10.0	80.8	10.9	85.0	18.1	82.3	11.1	84.8	7.5
Senior 6	85.4	6.3	85.4	8.6	89.6	4.4	77.8	14.1	86.1	18.8	92.9	7.1	86.1	5.5
F-value	1.79		1.60		0.87		1.30		1.76		1.75		0.89	
Sig.	0.16		0.20		0.46		0.28		0.17		0.17		0.45	

Results in Table 4 indicate that sophomores in experimental Group had the highest mean (86.2), followed by

seniors (86.1), then juniors (84. 8), and finally freshmen, who had the lowest mean values (83.9) on the overall scale. To determine whether these values were statistically significant, the f-values were calculated as shown in Table 4.

The f-values do not point toward any statistically significant differences in relation to the academic year variable.

To determine whether students differed in their level of non-cognitive skills in relation to what major they were enrolled in, the researchers have calculated their means and standard deviations by university major, as well as the f-value, as shown in Table 5.

Table 5. Mean and standard deviation values of study experimental group's scores on the university major variable

	Locus of Control		Planning		Empathy		Self Confidence		Growth Mindset		Grit		Total	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
English N=13	79.5	12. 9	81.1	7.7	90.4	6.0	77.2	8.8	96.8	6.4	89.1	8.4	85.3	4.2
journals N=19	81.4	9.5	77.2	9.9	89.0	6.6	79.2	10.7	87.3	15.3	87.7	9.1	83.5	4.5
Education N=10	87.5	6.5	74.6	8.4	87.9	6.4	81.3	7.2	93.3	14.1	88.9	8.2	84.7	6.0
Arabic N=3	87.5	0.0	87.5	7.2	91.7	4.2	77.8	2.4	100.0	0.0	89.7	5.9	88.3	1.1
Others N=12	87.5	5.6	80.5	14.3	90.3	5.1	78.8	8.6	95.8	8.3	91.0	7.6	86.1	6.2
total	83.6	9.5	78.9	10.4	89.5	5.9	78.9	8.8	92.9	12.2	89.0	8.2	84.9	5.0
F-value	2.086		1.326		.417		.293		1.888		.305		.882	
Sig.	.096		.273		.796		.881		.126		.873		.481	

Table 5 indicates that the mean scores of students on the Non-Cognitive Skills Scale were 88.3 for those in Arabic Language, 86.1 for students enrolled in other majors, 85.3 for those majoring in English Literature, 84.7 for those in Educational Sciences, , and 83.5 for those in Journalism.

To determine whether there were any statistically significant differences, the F-value was calculated (shown in Table 5 above), the f-values do not point toward any statistically significant differences in relation to the university major.

To answer the third question "Is there a correlation between the extent to which students in the experimental group possess non-cognitive skills and their GPA"? The researchers have calculated the correlation coefficient between students' scores on the Non-Cognitive Skills Scale in relation to their GPA ratings at university, indicating a weak positive correlation coefficient of 0.064, which is statistically insignificant.

4. Discussion

The study aimed to explore the impact of interactive training programs on developing a set of non-cognitive skills in undergraduates, as opposed to using traditional methods. The interactive training program focused on the following non-cognitive skills: locus of control, planning, empathy, self-confidence, growth mindset, and grit, tenacity, and perseverance.

The study has found that the interactive training program did impact the development of a set of non-cognitive skills or competencies as compared to the traditional training program (Group B) and the Control Group (Group C). The findings revealed that interactive training programs had helped foster three of these non-cognitive skills: empathy, growth mindset, and grit; differences in students' scores in all three groups were statistically significant and in favor of the experimental group (Group A). The effectiveness of the interactive training program could be attributed to a number of factors, including:

1) That the interactive training program consisted of a group of activities relevant to real-world contexts, which was contemporary. This could have contributed toward attracting students' attention and boosted their motivation for completing various training tasks.
2) Implementing interactive, cooperative, and individualized activities which are centered on discussion,

debate, and brainstorming. All these could effectively and positively influence student motivation, add fun to the learning process, and increase the chances of interaction between students themselves, making them the centre of the learning process, and allowing them to practice critical, creative, and analytical thinking, thus contributing to their overall development and to modifying their cognitive structures.

3) The effective implementation of modern technology through the use of short illustrative movies for getting ideas through to the students, which could have raised their levels of interest and interaction among each other and with their trainers.

4) The incorporation of issues and topics which interest and concern youths in the Arab World with the interactive training program, including the issues of violence, environmental problems, unemployment, and globalization. This could have allowed students more opportunities for effective interaction, discussion, idea exchange, listening, and having an open mind to the diverse opinions of others.

5) Utilizing contemporary assessment strategies, as students were assessed based on their portfolios and projects they had completed during the training sessions, as opposed to using written examination. This could have had a positive impact on student learning.

6) That the interactive training program had focused on a set of non-cognitive skills, which were new (and thus interesting) to trainee students, and provide them with an opportunity to succeed on academic, as well as personal, levels.

However, the results did not indicate any statistically significant differences in students on the academic year variable. This result is inconsistent with a number of previous studies. For instance (Duckworth et al., 2007) indicated that older students had more grit as compared to freshmen, mainly due to the fact that older students usually possessed more experience, and thus were more capable of practicing constant grit and hard work in aiming to fulfill desired goals as compared to their younger counterparts, which is positively reflected on their academic scores.

Furthermore, the findings did not indicate any statistically significant differences in the extent to which student acquire these non-cognitive skills on the sex variable, which contradicts the findings of Al-obeidi (2011), where female students had higher empathy than their male peers. The finding of the current study could be attributed to the fact that males and females do not differ in their campus experience at university, as well as they having quite similar social and economic backgrounds, regardless of sex.

The study has also found a weak positive correlation between students' scores on all six non-cognitive skills and their GPA scores. This is consistent with the works of Bazelais et al. (2016), where he asserts that grit is not a significant indicator of academic scores or whether or not students pass a physics course at university, for instance; on the contrary, his study indicated that students' previous academic performance held more importance. However, this result is not compatible with a number of other research papers on the relation between a number of non-cognitive skills such as grit, growth minded, and self-confidence and between students' academic scores and their ability to complete their studies up until graduation. A good deal of papers, including Dweck (2015); Duckworth et al. (2007); Chang (2014); and Gharghout (2016) asserted that a correlation exists between these non-cognitive skills and the academic scores of students, denoting that the academic score of a student is the most suitable indicator of his or her grit toward graduation, and that students with higher levels of grit attain higher cumulative GPAs as compared to their peers with lower cumulative levels. Therefore, it is imperative to cultivate these non-cognitive skills in students (such as grit) in order to increase academic performance in students, and to cultivate skills of locus of control, self-confidence, and planning in preparing students for their future career paths. This is consistent with the findings of Judge, & Bono (2001), who have indicated that a set of non-cognitive skills, including self-confidence and locus of control, can affect job satisfaction and security.

In addition, the results did not indicate any statistically significant to university major in developing these skills in students. This could be due to the fact that a large portion of the study sample are enrolled in the Faculty of Arts and have quite similar academic experiences, as previous studies have shown that students who are enrolled in more academically challenging courses usually exhibit more grit and growth minded than their peers (Dweck, 2015).

It is evident that the training program did not contribute to developing planning, locus of control, and self-confidence skills in students, in spite of it being highly imperative in achieving success and developing problem-solving skills which students will practice in the future. This could be due to the fact that students have prior knowledge of these skills, and that the strategies used for developing these skills were insufficient. This

indicates that the suggested activities for this training program need to be reviewed; additional activities or changes could be recommended for helping students better develop these skills.

5. Recommendations

The following is a list of recommendations that one believes, if implemented, would contribute positively to develop and reinforce a set of non-cognitive skills in students:

- Researchers should show more interest in investigating whether students possess these non-cognitive skills, and identify students who are undergoing academic problems in hopes of providing them with assistance and help in completing their undergraduate studies.
- Conduct more research on the attitudes and perceptions of the academic teaching staff at universities toward the importance of these non-cognitive skills, and how much interest they show toward helping their students acquire them.
- Hold training sessions for teaching staff at university to emphasize the importance of non-cognitive skills in students.
- Design training programs for students to nurture their various non-cognitive skills which help improve their academic performance, especially in students with low GPA scores.
- Conduct more studies on the most efficient strategies that could be implemented for developing non-cognitive skills in undergraduates.
- Encourage teaching staff at university to develop non-cognitive skills in their students through the use of appropriate strategies, as these skills contributes to improving their academic achievement.

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Sources of Writing Anxiety: A Study on French Language Teaching Students

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Abstract

Conducted on French Language Teaching students, this research aims to determine the causes of writing anxiety. Designed in accordance with the mixed method, a writing anxiety inventory, a language proficiency exam, a retrospective composing-process questionnaire, a writing attitude scale and semi-structured interviews were used. After identifying anxiety levels of 22 Turkish students attending French Writing Activities, course, proficiency levels, attitudes towards writing, and the composing-process have been found as possible sources of writing anxiety. Data obtained via semi-structured interviews held with students have not only confirmed these results, but also revealed new findings as to other causes of writing anxiety: classmates, time pressure on writing activities, and teacher's attitudes towards students.

Keywords: writing, writing anxiety, French as a foreign language, mixed method

1. Introduction

Studies on anxiety which is among individual differences and classified within affective domain have been on the rise since the end of 70s, which has yielded that this factor could inhibit language learning, influence foreign language students' success and performance, hinder language acquisition, and lower their self-esteem and self-respect levels (Horwitz, Hortwitz, & Cope, 1986; Young, 1986; Gardner, Moorcroft, & MacIntyre, 1987; Spolsky, 1989; MacIntyre & Gardner, 1991; MacIntyre, 1995; Saito & Samimy ,1996; Coulombe, 1998; Horwitz, 2001; Gregersen, 2003). Termed as 'foreign language anxiety' within language learning and observed in foreign language classes or in lessons where students have to speak in a foreign language, language anxiety is defined as "a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the language learning process" (Horwitz et al., 1986, p. 128). By the end of 80s, anxiety research took a new direction towards its influence over four basic language skills and developing new tools specific to each skill. So, new anxiety scales for speaking, writing, listening, and reading skills have been developed together with overall language anxiety scales. All these scales helped determining anxiety levels of language students across all skills, comparing students with high and low anxiety levels and those studying different foreign languages, figuring out sources of anxiety for each language skill, and aiding students in reducing their levels of anxiety.

Literature review yields that the highest and lowest levels of anxiety experienced by foreign language students belong to speaking (Negari & Rezaabadi, 2012) and listening skills respectively (Vogely, 1998, p. 68; Elkhafaifi, 2005, p. 206; Bekleyen, 2009, p. 665; Atasheneh & İzadi, 2012, p. 179, cited in Capan Tekin, 2015, p. 26). Interviews that Young (1992) held with experts of foreign language anxiety such as Krashen, Omaggio Hadley, Terrel, and Rardin produced consistent answers for the question, "Do language learners experience an equal amount of anxiety in all four skill areas?" (p. 163), which pointed that speaking skill was the main source of anxiety. Omaggio Hadley (ibid.) also added, "At least in writing you get to do some thinking and reflecting." Here, Hadley underlines that speaking requires immediate feedback whereas writing allows some time for learners to think, and this makes speaking more difficult and more conducive to anxiety than writing. However, writing skill also has some unique features leading to anxiety. Unlike speaking, writing does not involve gestures, mimes, and intonation, it does not address a listening audience in the immediate environment, but a reading one within a certain distance; and thus, writing entails being extra clear and precise in explaining opinions and feelings. Therefore, a writer has to have a good command of grammar knowledge and meticulously follow the

rules of writing (such as spelling and punctuation) (Dabène, 1987, p. 43; Simard, 1992, p. 286) because as soon as the text is before the readers' eyes, there is no way back to correct any mistakes or improve any poor points as opposed to speaking, which always permits rewinding and clarifying. Thus, the text has to be meaningful, crystal clear, understandable, to the point, and straightforward. In order to achieve this, a writer has to plan the content and filter his/her opinions before starting to write, and has to be seriously careful about grammar, syntax, spelling, coherence, cohesion, page layout, style, and legibility. Designated as one of the difficult and complicated skills even in one's native language (Daly et Miller, 1975), writing in a foreign language becomes harder for learners due to target language-specific rules, and it leads to anxiety on learners. This reaction or fear against writing skill negatively influences foreign language learners' writing performance; cause them to dislike writing activities, even to perceive writing as a punishment procedure. Daly and Wilson (1983, p. 327) describe writing anxiety as "a situation and subject specific individual difference associated with a person's tendencies to approach or avoid situations perceived to potentially require writing accompanied by some amount of perceived evaluation." Anxious writers are aware that their work will be assessed by elaborateness of their ideas, their arguments, the quality of their wording, stylistic quality of their text, and "most terrifying of all, by the errors they may make in mechanics, spelling, morphology, syntax, and/or word choice" (Leki, 1999, p. 66). All these create frustration, fear, and avoidance on learners and put distance between them and writing. This frustration is generally bigger on learners who have arguments because "they are not able to find the L2 forms for expressing themselves, and they know what to say but not how to say that" (ibid., p. 67).

In this regard, the aim of this study is to determine what lies within the source of writing anxiety and what causes it to escalate by working on a group of French language students. However, the high number of research studies with this aim in the literature directed the researchers to be more specific, and the aim was set as to identify whether being unable to employ high- and low-level production processes leads to writing anxiety or not. Low-level production process refers to grammatical, syntactic, lexical, and orthographic components of a language, which build a text linguistically, and thus are highly crucial. These elements accentuate the meaning and clarity of a text. Whalen and Ménard (1995, p. 382) state that writers have to have a good command of vocabulary, grammar, and syntax knowledge in order to express their opinions in an acceptable manner. Devine, Railey and Boshoff (1993, p. 218) note that insufficient linguistic knowledge impedes writing activity. Also known as composing-process, high-level production process involves planning, writing, and editing steps that are based on adequate amount of knowledge and that help publishing structured and clear texts. As underlined by Zamel (1983, p. 180), foreign language learners who employ the composing-process "clearly understand what writing entails. They know what to anticipate, how to pace themselves, and what to focus on as they write and rewrite."

Apart from these two variables that might affect writing anxiety in a foreign language, examining if learners' attitudes towards writing also interfere with anxiety levels was also included among the aims of this study. Morissette (2000, p. 228) defines attitude as an emotional reaction an individual repeatedly displays upon facing an object, idea, or activity. This reaction may cause an individual to grow closer or apart from that object, idea, or activity (ibid.). This study aims to identify whether foreign language students' attitudes towards writing triggers and affects writing anxiety or not.

Accordingly, answers have been sought for the following five questions:

1) What are the writing anxiety levels of French language students?
2) Do their proficiency levels affect their writing anxiety?
3) Does the practice of composing-process influence writing anxiety levels?
4) Do students' attitudes against writing influence writing anxiety levels?
5) What do these students think about writing anxiety?

2. Method

2.1 Research Model

This study has been designed in accordance with mixed method, which combines use of both quantitative and qualitative methods; sequential explanatory design has been employed for this study. The quantitative part of this study has employed relational screening model since it aims to examine the relation between writing anxiety and three variables (students' proficiency levels, use of composing-process, and attitudes against writing) and to determine the existence and level of covariance. The qualitative part has been completed with semi-structured interviews.

2.2 Participants

22 students studying French Language Teaching at the Education Faculty of a university in Turkey during the academic year of 2015-2016 partook in this research. They are between 20-23 years old, they are in second grade and they have been studying French as a foreign language for three years (first year: preparatory class). Students were chosen in concordance with opportunity sampling. All students taking "French Writing Activities" course were asked to participate in the study, the aim of the study was explained to them, and their consents were granted. Although the entire sample attended quantitative data collection step, two students were not interviewed since they displayed very low levels of anxiety, and finally, 20 students partook in the qualitative step. Consequently, the participants are selected with purposeful sampling which is among the non-probability sampling methods.

2.3 Data Collection Tools

Data were collected through four data collection tools. Following are descriptions of these tools in order of use.

2.3.1 Writing Anxiety Inventory

Developed by Cheng (2004), Second Language Writing Anxiety Inventory (SLWAI) was employed in order to determine anxiety levels of French language students. Consisting of 22 items, this five-point Likert type scale aims to identify levels of writing anxiety in a foreign language. Positive items of the scale are graded as "totally agree-5 points", "agree-4 points", "indecisive-3 points", "disagree-2 points", and "totally disagree-1 point". On the contrary, negative items are reversely graded: "totally agree-1 point" and "totally disagree-5 points". The highest and lowest scores to be obtained from the scale are 110 and 22 respectively. This grade range is divided into three parts: points between 22 and 51 refer to "low level of writing anxiety", 52-80 "medium level writing anxiety, and 81-110 "high level of writing anxiety". The scale was translated into Turkish via back translation technique in order to prevent misunderstandings. This technique entails translating a text from the target language into native language, then back to target language from native language again. So, the scale was translated into Turkish first, then back into English by a translator whose mother tongue is Turkish and expertise is English. Once there was any discrepancy between the translated version of the scale and the original one, two specialists were consulted, and necessary modifications were done. Following the translation-back translation step, the scale was administered to English language students, and the reliability of the scale was found to be .87 (reliability coefficient of the original scale was calculated to be .91 by Cheng).

2.3.2 Language Proficiency Exam

Language proficiency test is composed of four parts and 40 questions, and it takes 30 minutes to finish the test (CCIP, 2001, pp. 57-61). The first 10 questions regard vocabulary and sentence meaning, following 5 questions are about finding synonyms for words underlined in texts, next 20 questions are about grammar, and the final 5 questions are about determining the grammar mistakes in texts. Each correct answer is for 1 point and wrong answer is for zero point. Accordingly, the highest and lowest scores that one can score on this test are 40 and 0 respectively. Students were divided into three based on their scores as follows: 0-15 points, low level of French proficiency; 16-29 points, medium-level of French proficiency; and 30-40 points, high level of French proficiency.

2.3.3 Retrospective Composing-Process Questionnaire

The purpose of retrospective composing-process questionnaire is to check if students employed composing-process or not during writing their texts. Therefore, students were asked to write a 40-line composition about «It is not necessary to know a foreign language other than English» prior to the application of the questionnaire (in one hour). Here the aim was not to grade students' writing performance, but to help them become more objective while filling out the questionnaire. Thus, students were administered the questionnaire right after they finished their compositions, and they were asked to respond either as 'Yes' or 'No' to statements 7 of which are about planning step, 10 of which regard writing step, and 12 of which are about editing step. According to Sasaki and Hirose's study (1994, cited in Kamimura, 2000), positive responses to the questions in this questionnaire developed by Kamimura (2000) are worth points between 1-to-3 and negative responses are worth 0 point (Appendix). The highest and lowest points to be scored on this questionnaire are 59 and 0 respectively. Students scoring between 40 and 59 were grouped as those using composing-process. Developed in English originally, this questionnaire was also back-translated and administered to the research sample in Turkish. Since the measurement tool was a questionnaire, there was no need for reliability–validity analysis: often experts are consulted—an analytic approach—when using questionnaires and validity-reliability calculations are carried out with scales.

2.3.4 Writing Attitude Scale

Participants were also administered an attitude scale about writing in a foreign language. Developed in Turkish by Inal (2006), this 5-point Likert type scale consists of 40 items, 23 of which are positive and 17 of which are negative statements. Grading for the positive statements in the scale is as follows: "totally agree" 5 points; "agree" 4 points; "indecisive" 3 points; "disagree" 2 points; and "totally disagree" 1 point. On the contrary, negative statements have a reverse grading system such as "totally agree" is for 1 point and "totally disagree" is for 5 points. Reliability coefficient of the scale was calculated to be .9440, and the highest and lowest scores one can get on this scale are 200 and 40 respectively (Inal, 2006, p. 171). Again this score range was also divided into three in order to form three groups for students: scores between 40 and 93 "negative attitude against writing"; 94-146 "neutral attitude against writing"; and 147-200 "positive attitude towards writing".

2.3.5 Semi-Structured Interviews

Data obtained through semi-structured interviews served clarifying writing anxiety experienced by the participants and supporting, verifying, and checking the validity of the findings concluded via quantitative data. All interviews lasted 20-25 minutes, were conducted in Turkish, and were audiotaped.

3. Data Analysis and Limitations

Quantitative data were analyzed by SPSS version 19 program: Kruskal-Wallis test, Mann Whitney U test and Spearman correlation test were used. The interviews were recorded; transcribed and analyzed using content analysis which involved coding, sifting and categorizing.

This study is limited by the small sample size (22 learners), the quantitative data obtained from Second Language Writing Anxiety Inventory, language proficiency test, retrospective composing-process questionnaire and writing attitude scale. It is also limited by the qualitative data obtained from semi-structured interviews.

4. Results

22 participants were grouped under 3 categories based on the scores they got on writing anxiety inventory to be able to answer the first research question (What are the writing anxiety levels of French language students within the sample?): low-level, medium-level, and high-level.

Table 1. Writing anxiety levels of French language students

High-Level Writing Anxiety		**Medium-Level Writing Anxiety**		**Low-Level Writing Anxiety**	
Students	Scores	Students	Scores	Students	Scores
N01	89	N05	77	N14	50
N02	96	N07	77	N15	29
N03	95	N09	77		
N04	93	N11	68		
N06	84	N12	77		
N08	85	N16	58		
N10	95				
N13	106				
N17	89				
N18	106				
N19	98				
N20	91				
N21	91				
N22	102				

Student #: 22	low-level anxiety: 22-51
Mean: 83.32	medium-level anxiety: 52-80
Standard deviation: 18.77	high-level anxiety: 81-110

According to Table 1, all students experience a certain amount of anxiety when writing in French, except for two students with low-levels of anxiety (N14 and N15): 14 participants have high-levels of anxiety whereas 6 of them go through medium-levels of anxiety. Students with the highest levels of anxiety are N13 and N18 who both scored 106. Considering that the highest possible score one can get on this inventory is 110, one can

conclude that these students' levels are seriously high. Similarly, N22 who scored 102 should also be noted as experiencing a considerable amount of anxiety while writing in French. On the other hand, student N15 should be reported as the one with the lowest level of writing anxiety since s/he scored 29 and the lowest possible score is 22. Another point worth mentioning is the fact that 6 students grouped within medium-level of writing anxiety scored 77, which is really close to high-level anxiety threshold, 81.

Kruskal-Wallis test was employed in order to see whether levels of writing anxiety experienced by the participants varied significantly across language proficiency levels (second research question). Being a non-parametric test and alternative for Anova test, Kruskal-Wallis test is used when distribution variance is not homogeneous, participants are fewer than 35, and at least three samples are compared. Because 22 participants were grouped under three categories (Table 2) in our study, it would not be wrong to state that all criteria of Kruskal-Wallis were met.

Table 2. Language proficiency (LP) levels of French language students

High-Level LP		**Medium-Level LP**		**Low-Level LP**	
Students	Proficiency Scores	Students	Proficiency Scores	Students	Proficiency Scores
N14	30	N03	19	N01	15
N15	35	N05	19	N02	13
		N06	20	N04	14
		N07	22	N17	15
		N08	18	N18	15
		N09	17	N19	14
		N10	23	N20	13
		N11	18	N21	14
		N12	20	N22	15
		N13	22		
		N16	22		

As can be seen in Table 2, only 2 students have high-levels of language proficiency (N14 and N15). 11 participants with scores between 16 and 29 were labeled as having medium-level proficiency whereas 9 students with scores lower than 15 were grouped under low-level language proficiency.

Table 3. Kruskal-Wallis test results of participants' total writing anxiety scores across French language proficiency levels

Proficiency Levels	**n**	**Mean Rank**	**df**	**X^2**	**p**	**Significant Difference**
Low	9	15.94	2	9.900	.007	Low-Medium, Low-High,
Medium	11	9.68				Medium-High
High	2	1.50				

Kruskal-Wallis test results in Table 3 indicate that writing anxiety levels of participants vary significantly across their language proficiency levels (X^2=9.900, $p < 0.05$). Mean ranks of groups point that writing anxiety increases as proficiency levels decrease. The results of Mann Whitney U test conducted in order to determine the source of the difference observed in Kruskal-Wallis test results yield that this difference holds true across all proficiency levels and that the difference is statistically meaningful in favor of those with higher proficiency levels. In short, those with low-level proficiency experience higher levels of writing anxiety compared to those with medium and high-level language proficiency. Likewise, high-level language proficiency participants go through lower levels of writing anxiety as opposed to those with medium-level language proficiency.

In addition, mean scores of writing anxiety depicted in Table 4 clearly shows that anxiety levels go up as proficiency levels go down.

Table 4. Writing anxiety means across proficiency levels

Proficiency levels	Writing anxiety means
High	39.5
Medium	81.73
Low	95

Subsequently, Spearman correlation test was employed in order to check whether use of composing-process had any influence over writing anxiety or not (third research question). This test determines the direction and strength of the relation between two variables, if there is any. Being the non-parametric equivalent of Pearson correlation test, Spearman correlation test is administered when the relevant variables do not have a normal distribution and when research sample is smaller than 30. Correlation coefficient ranges between -1 and + 1: coefficients between 0 and +1 mean that there is a positive relation between two variables, which means that variables either increase or decrease simultaneously; others between -1 and 0 point to a negative relation, which means that one of the variables increases (decreases) as the other one decreases (increases). Tabel 5 depicts the results of Spearman correlation analysis.

Table 5. The results of correlation analysis between writing anxiety experienced by French language students and use of composing-process

		r
Writing anxiety– Composing process	Spearman Correlation	-.602*
	Sig. (2 tailed)	.003
	N	22

* p<.01.

Table 5 displays that there is a medium level (-.602) [-0.75 < r < -0.6], negative, and highly significant (P=.003<.01) relation between writing anxiety and use of composing-process. Accordingly, the relation between these two variables is inversely proportional i.e. writing anxiety increased when students did not use composing process and vice versa. Table 6 depicts writing anxiety total scores and composing-process questionnaire total scores for each student in order to further clarify these results.

Table 6. Total scores obtained from writing anxiety inventory and composing-process questionnaire

Students	Writing anxiety scores	Composing-process scores
N01	89	16
N02	96	13
N03	95	17
N04	93	12
N05	77	26
N06	84	19
N07	77	9
N08	85	38
N09	77	36
N10	95	30
N11	68	31
N12	77	32
N13	106	27
N14	50	45
N15	29	40
N16	58	21
N17	89	22
N18	106	6
N19	98	9
N20	91	8

N21	91	8
N22	102	12

Table 6 shows that students with high levels of writing anxiety scored dramatically low on composing-process questionnaire. For instance, student N18 scored 106 on the anxiety scale and 6 on the composing-process questionnaire, which clearly indicates a serious level of writing anxiety and almost no use of composing-process. On the contrary, students N14 and N15 who got 50 and 29 points respectively on the anxiety scale scored considerably high on composing-process questionnaire, 45 and 40 respectively. However, composing-process scores of two students (N08=38 points, N09=36 points) whose anxiety levels are within medium range display that these students made use of the composing process. One can assume that these students did not end up feeling high levels of anxiety since maybe they at least tried to use the composing-process.

Spearman correlation test was employed one more time in order to answer the forth research question (Do students' attitudes against writing influence writing anxiety levels?). Results of relevant analysis are presented in Table 7.

Table 7. Results of correlation analysis between French language students' writing anxiety levels and their attitudes against writing

		r
Writing anxiety – Attitude	Spearman Correlation	-.503*
	Sig. (2 tailed)	.017
	N	22

* p<.05.

According to Table 7, there is a negative, low-level (-.503) [-0.7 < r < -0.5], and highly significant (P=.017<.05) correlation between writing anxiety levels and attitudes against writing. So, the relation between two variables is inversely proportional i.e. writing anxiety increases if accompanied by negative attitude and decreases if students bear positive attitudes against writing. For further clarification, Table 8 depicts total scores of writing anxiety inventory and writing attitude scale for each student.

Table 8. Total scores obtained from writing anxiety inventory and writing attitude scale

Students	Writing anxiety scores	Writing attitude scores
N01	89	121
N02	96	92
N03	95	155
N04	93	133
N05	77	128
N06	84	137
N07	77	125
N08	85	101
N09	77	122
N10	95	143
N11	68	155
N12	77	125
N13	106	128
N14	50	153
N15	29	149
N16	58	131
N17	89	122
N18	106	82
N19	98	99
N20	91	56
N21	91	93
N22	102	66

As can be filtered from Table 8, N02, N18, N20, N21, and N22 are students with negative attitudes against writing and high levels of writing anxiety. Similarly, two students with low levels of anxiety hold positive attitudes against writing. These results support those obtained from correlation analysis. However, anxiety and attitude scores of N01, N04, N06, N08, N10, N13, N17, and N19 show that these students go through medium level of writing anxiety although they bear positive attitudes against writing. Interestingly, N03 suffers from high level of anxiety even though s/he holds positive attitudes against writing, which may be noted as one of the reasons why the level of correlation between these two variables is low.

Finally, collected through semi-structured interviews in order to determine what French language students think about writing anxiety, qualitative data was studied via content analysis. Students N14 and N15 were excluded from the interview sessions since they had real low levels of writing anxiety, and interviews were completed with 20 students. Content analysis is a research method that entails spotting components repeatedly existing in a written or oral discourse, converting them into numbers, categorizing them across themes, sub-themes, and titles based on their frequency, and making inferences (Wanlin, 2007, p. 249).

So, 20 students' opinions stated during the interviews were listened and coded, and issues verbalized by most of the students were grouped under two categories; 1- Anxiety felt during writing in French; 2- Reasons to anxiety felt during writing in French (this theme was further divided into four sub-themes based on students' opinions).

All 20 students interviewed stated that they experienced some level of anxiety when it comes to writing in French. Following are some quotes concerning the first theme:

"French writing class creates anxiety on me. I don't know why, but it happens. Yet, I have to admit that I am more anxious in speaking class. I would always choose writing class over speaking if I'm ever given the chance." (N01)

"I can't write. When I see others writing during the class, I grow anxious. Therefore, I sometimes choose to put my head on the desk and rest. I try not to think about the class." (N18)

"Reading is fine, but not writing. People generally say, 'The more you read, the better you will write'. I don't think so. I read lots of books and stories in French, but when it comes to writing, I don't know what to do. Writing is not easy. Still, I'm better this year. It was worse last year; I even didn't want to come to school. I wouldn't do my homework assignments. I guess I'm less anxious in writing classes this year thanks to the teacher: I still have some concerns but I'm not afraid at least" (N13)

"I'm terribly anxious in classes, seriously. My heart starts beating crazily when I have to write. I even start to sweat. Even now, only thinking about it makes me anxious. I was more comfortable and relax last year because there were 40 students in the class. So, it was easy to avoid the teacher. It wasn't possible for the teacher to track everybody. But, we are 22 people in class this year. I'm sure the teacher will ask me to do something till the end of the class." (N02)

"I have a good command of grammar and vocabulary; thus, I think I must be comfortable in writing classes…but I'm not. As soon as the teacher tells us the instruction, I can't get my mind and opinions together, I can't form sentences…and I feel that my heart goes insane because I know the teacher will start walking among the desks to see how well we're doing. I always try to put down one or two sentences on my paper before s/he arrives; I don't want him/her to see a blank page." (N10)

"I'm afraid to write in class. Writing turns out to be a nightmare for me. Actually, I keep a diary in French. I like writing in French. Last year, I showed several pages from my diary to my teacher, and s/he said my work was pretty good. Yet, it is different in the class. There are rules and instructions, time pressure. I prefer free writing without any instructions." (N12)

"Writing in French puts pressure on me. You know what, I like writing, I write much in Turkish, but it is different in French… I guess I feel anxious when it comes to French because I can't write as well as I do in Turkish. I'm really slow when I write in French; I spend a lot of time writing very short sentences." (N05)

"I'm a stressed and hasty person, and when it comes to writing I'm overwhelmed by anxiety. Actually, I like writing classes… Courses do not reduce my motivation, either. But, writing is not like speaking. When I have to write, I have to use all my linguistic and world knowledge… I have to express myself clearly. Readers have to be able to understand my text. In speaking, we can understand each other in one way or the other. It becomes more difficult in writing." (N03)

"For me, this class (French writing) is a total nightmare. I'm not motivated for this class at all. Teachers can't motivate me either. I stopped writing, and I got worse. I don't even come to classes. I don't do the assignments

[…] I don't know how to be successful in the exams." (N22)

"Indeed, I'm fond of writing classes. I like seeing how structures we learned in grammar classes are used in texts. But, I get nervous when I have to write. I feel like my palms sweat. Sometimes, I feel I blush. Even worse, I start stuttering when I'm asked to read what I wrote out loud. I guess I'm not that much creative, I can't write." (N06)

"I feel anxious before I start writing. But, once I start, everything gets back to normal. The most difficult part is to start for me." (N11)

"I'm good at French grammar, and this gives me confidence. If the topic I'm supposed to write is something I'm knowledgeable about, everything is fine for me. If I don't have much information about the topic, I start worrying. Yet, I somehow manage to find my way." (N08)

Table 9 displays the sub-themes within the second theme and the numbers of students mentioning these sub-themes. The second theme aims to understand the reasons of writing anxiety based on students' opinions.

Table 9. Distribution of students across sub-themes

Reasons of writing anxiety	n*/20
a- Other students/Classmates' attitudes	18
b- Limited linguistic knowledge and writing skill problems	15
c- Limited time	12
d- Teacher's attitude	9

* Numbers of students mentioning sub-themes.

Almost all anxious students (18 out of 20) point their classmates as one of the sources for their anxiety. Following are several quotes by these 18 students:

"When our teacher asks us to go to the board and write on it, I pray that s/he won't choose me. My anxiety disappears only when I understand that I won't go to the board. As soon as I stand in front of the board, I start trembling. I prefer sitting in my desk trying to write on my own or copying what others write onto the board in my notebook. I feel like everybody is watching me when I stand in front of the board, and this makes me drastically anxious." (N21)

"Our teacher gets mad and rebukes when we don't volunteer to go and write our sentences onto the board. Maybe s/he is not wrong, but writing when everybody is looking is not easy for me. I don't feel comfortable and relax even when I do the assignments at home… I know there may be lots of mistakes in my assignments…So, the sentences I write in a limited time in the classroom will be worse in terms of mistakes… My teacher is tolerant, but my friends [classmates]… I don't want them to make fun of me." (N05)

"[…] when it comes to writing in class, everything changes. More precisely, when the teacher announces that some of us will write their sentences onto the board, everything changes dramatically. I start feeling anxious, even my heart beats faster than normal. These feelings prevent me from writing: I can't write anything because I constantly think that I'll go to the board. I don't want to stand in front of everybody and write." (N12)

"I'm a shy person, and I get nervous quickly… I don't want to go to the board. […] I worry a lot… I don't want others to see that I can't do something. Actually, I'm not afraid of making mistakes: the teacher sees my mistakes, and corrects them, which is really good. My problem is my classmates. I do not want them to see my mistakes." (N03)

"What worries me indeed is to go to the board and write onto it… You know what, we all started to learn French together… We've been classmates for 3 years, and some of my classmates are way better than I am… I couldn't improve my French as much as they have." (N01)

"It's no problem to go to the board and write my text onto it. What bothers me is that the teacher asks my classmates to find my mistakes: I prefer him to see my mistakes, not my classmates." (N18)

"I become nervous and anxious when I see others write. They look like they constantly write. I feel pain in my stomach as I see them in action. Sometimes, I don't even start writing…I just wait." (N18)

Besides, 15 participants stated their limited knowledge about linguistic features, especially vocabulary, as a major reason for their writing anxiety. Some of them noted that they couldn't complete what writing requires apart from linguistic knowledge:

"I experience anxiety during writing especially because my vocabulary inventory is limited. I don't have any grammar issues. I score really high in grammar. Yet, my vocab knowledge is poor… We need words to be able to write." (N11)

"I'm not afraid of not knowing. It doesn't worry me. But, I know that writing will be easier and better if I knew more about words. I wonder how others [classmates] learn this many words." [N07]

"I can't put what I learn in grammar classes into practice. Plus, my vocabulary is really limited. Last year, we had a vocabulary course; we had to memorize loads of words… I'm bad at memorization. In addition, I can't gather my ideas, I can't organize them. I don't know how to do that." (N02)

"I feel anxious because I know that I won't be able to write although I have many opinions: it takes a good command of vocabulary and grammar to be able to share opinions." (N09)

"When I edit my writing, I pay special attention to correct my grammar and punctuation mistakes; still I can't get good grades. My teacher tells me that I neglect the requirements of writing and that writing does not only mean to produce grammatical sentences. What are the requirements of writing anyway? Not knowing this makes me anxious… There is always something missing." (N06)

"The other day, our teacher said that we should also take socio-cultural components into account while writing. This made me even more anxious. I do not have enough vocabulary…I don't like writing either… Plus, I have to be careful about many other things. All of these discourage me… I didn't know writing was this much difficult. I think I will fail, and I will have to take this class again next year. I don't think I'll take the final exam." (N20)

"I need to improve my grammar. I can't write properly with what I know about French right now. I feel nervous, but to be honest, I'm not that much stressed out. I know the rules of writing, how to plan writing, and that I need to be careful about cohesion, but I can't apply them… As I said, I know what to do but I don't have enough grammar and vocabulary knowledge to actually do them." (N16)

As for 12 participants, time limitation is another reason of writing anxiety. Students mostly talk about times when they do their homework assignments at home as they mention time pressure:

"As soon as the teacher gives the instruction in the class, my palms start sweating. Sometimes, I feel that I blush up to my ears. I perform better at home. I have as much time as I need, and there is the Internet. I can check many things online. Even, sometimes I write the sentences that I want to use in my writing onto the search engine, and I find similar sentences. I correct my own sentences in accordance with those I find online. I feel lots of stress in class, the time is limited; there is always time limitation in class." (N04)

"For me, being at home and in class is not the same thing. I have no problems at home. I regularly do my homework assignments. Somehow I find my way at home since time is not a limitation. Plus, I have plenty of books that I can refer. Especially, there is the Internet, which I can use when I need. Thus, words are not a problem anymore. Moreover, I can read and edit my writing as many times as I want." (N17)

"I don't know how to start a text. When we were supposed to write only sentences, I had no problem. But, writing a text is whole another thing. It is a real problem for me, I stress out in class. I know that I have to think, produce opinions, and plan my writing before I start, but…Doing all these in class is time consuming…plus, time is also limited …" (N19)

"I'm really calm at home. I write whenever I want, whenever I feel ready, there is no time limitation. Sometimes I start writing, then I stop, and two hours later I continue writing. Most importantly, if I have little or no information about the topic, I have enough time to search about it at home. I usually find some ideas to write down about the topic. Doing assignments is quite different: I have plenty of time to check and correct my sentences." (N10)

"Time limit in class puts me under pressure. Sure, the teacher is right, s/he has to teach many things to us in a limited time. Yet, we're going so fast sometimes… If I understand that I won't finish on time, then I quit. I don't like it either, but this happens. Limited time prevents me from thinking." (N02)

"For instance, I never feel anxious at home. Often I tell myself, "You should feel the same in class." However, as soon as the instruction is given and the clock starts spinning, everything ends for me. Tremor starts. You can't imagine the exams… I feel worse in exams." (N12)

"I don't feel nervous when I do my homework at home. Seriously, no anxiety. I can take my time, I have my dictionary with me, I look up anything as I wish." (N01)

Furthermore, 9 participants associate being anxious during writing with their teacher's attitudes.

"Lessons should be fun. There should be group works. Teacher shouldn't be so strict. What cause anxiety on us are authoritarian manners." (N05)

"Teachers' attitudes matter. Authoritarian teachers lead to anxiety on students. Instead, they should motivate us. Sure, I sometimes understand the teacher." (N04)

"Teacher's attitudes against us matter a lot. They should be sources of motivation not anxiety." (N21)

"I forget my anxiety when the lesson is fun and the teacher motivates us. Time flies by." (N09)

"Generally, all teachers should motivate their students. This is their job. I'm a very anxious person, and I get nervous too quickly. Yet, my anxiety vanishes immediately when the teacher motivates me. I totally forget about my anxiety if the teacher is motivating. To tell you the truth, I experience serious levels of anxiety during writing class." (N22)

5. Conclusion and Suggestions

Writing anxiety is a student's reaction characterized by emotional symptoms such as sadness, fear, and anger or physical symptoms such as blushing, sweating, and stomachache when writing is compulsory (Daly & Wilson, 1983, p. 327). This reaction prevents students from fulfilling the requirements of writing, negatively influences the quality of writing, impedes the acquisition of sophisticated writing skill, reduces motivation and self-respect, inhibits thinking process, and causes students avoid writing (Petzel & Wenzel, 1993).

This research aimed to determine the reasons of writing anxiety via working on French language students and employing several measurement tools.

Findings show that only 2 participants are anxiety-free whereas 14 experience high-levels and 6 go through medium-levels of writing anxiety. Analysis carried out to see if language proficiency was a reason for writing anxiety has indicated that there is a significant relation between these two variables, that language proficiency influences writing anxiety, and that anxiety decreases as proficiency increases. The fact that those two participants with very low-levels of anxiety have high language proficiency supports this finding. 20 participants experiencing medium-to-high levels of anxiety have been noted to have low-levels of language proficiency. Literature review completed by Lefrançois (2001, p. 232) underlies that linguistic features profoundly disturb foreign language students.

As for composing-process questionnaire, failure to employ this process (planning-writing-editing) leads to increase in anxiety levels; an inversely proportional relation has been found between anxiety and composing process: anxiety increases as composing*process is not employed. A similar result was noted in Bloom and Alrich's study (cited in Cheng, 1998, pp. 56-57). In their research, students' anxiety levels increased as participants were not able to plan or were incapable of planning their writing, could not carry out editing tasks, and could not express their opinions in a consistent framework.

Lastly, another finding distilled from quantitative data is that writing anxiety escalates with negative attitudes against writing born by students.

Qualitative data obtained from semi-structured interviews held with 20 students experiencing medium-to-high levels of anxiety are supportive of findings concluded with quantitative data set. Analysis of interviews has revealed that students mostly stated their limited knowledge and inability to complete the requirements of writing as the sources of their anxiety. A majority of participants underlined limited vocabulary inventory as the main source: according to them, knowing many words means being less anxious. Another finding concluded from qualitative data set is that students mostly think that they have enough command of grammar to write. However, none of the participants mentioned spelling or punctuation, which are among important components of writing. In fact, being easily notable, spelling mistakes can degrade the quality of a text, or even can cause the message in the text to be misunderstood. This may be interpreted as/that the participants are not aware of the significance of spelling or not conscious enough to know that it should not be neglected (or, they do not have any problems about spelling/pronunciation!).

Some of the participants noted that they had negative attitudes against writing by stating that they were not motivated for writing and they didn't like it much. This is another further indicator that qualitative and quantitative findings of this research match. Moreover, participants pointed their classmates as the primary reason for their anxiety, which was followed by time pressure and teachers' attitudes.

Of all 20 interviewees, 18 reported that writing in front of others (classmates) caused anxiety and nervousness, that they did not want their classmates to tease them, and that they did not want others to know the mistakes they made. Some of these shy students manifest physical symptoms such as increased heart rate and stomachache. It

is understood that they constantly compared themselves with their classmates, focused on what others thought about them, and never considered themselves as successful and skillful as their classmates. Only the teacher's judgments and feedback seem natural and meaningful for these students whose self-respect levels are low, which is consistent with Krashen's findings (1990, cited in Young, 1991, p. 427) concluding that high-levels of self-respect is associated with low levels of anxiety. Likewise, Price (1991, cited in Wang, 2005, p. 29) states that "anxious learners believed that their language skills were weaker than those of the other students in the class, and that their classmates would look down upon them."

Time pressure was stated as a crucial reason for writing anxiety by 12 participants in this research, and they explained this by referring the homework assignments they did outside the school. They expressed that they were never anxious doing their assignments although the tasks were similar to those they had to do in class. They noted that they spared more time to writing, they were able to use different resources (dictionaries, course books…), and that they appealed to the Internet whenever they wanted, all of which helped them write better and feel less anxious, if any.

Finally, 9 participants said that strict, authoritative, and unmotivating teachers were also another reason for writing anxiety. On the other hand, some students reported that their teachers were not that much rigid while giving feedback or correcting their mistakes, rather they were understanding and tolerant. Furthermore, they stated that they wanted feedback from their teachers not classmates. Therefore, what participants pictured during the interviews as strict and inconsiderate teachers was interpreted as those who do not care much about teacher-student interaction, who ignore creating a positive classroom setting and humor, and who sees intimidation as a necessary component of classroom environment. As also underpinned by Brandl (1987, cited in Young, 1991, p. 428), many teachers consider "a little bit of intimidation a necessary and supportive motivator for promoting students' performance". In fact, "the facilitation of significant learning is largely a function of certain attitudinal qualities that exist in the interpersonal relationship between the teacher and the student" (Weber, 1986, p. 315 akt. Lusignan, 2001, p. 21).

Research findings indicate that the role of teacher is crucial in reducing writing anxiety. It is obvious that teachers' roles and duties are of great importance in terms of both their attitudes and teaching the rules of writing to students, which diminishes levels of anxiety. First of all, teachers should inform foreign language students about the following points:

- Linguistic elements are significant but not the only necessary component of a successful writing; they are just "an additive factor increasing the quality of the text". (Cumming, 1989, p. 81);

- Writing entails use of composing-process: planning, reflecting the plan in writing, reviewing the draft, and correcting the mistakes;

- Developing negative attitudes against writing impedes acquisition of composition skills: students should be more positive about the course, and should talk about the factors that may influence their attitudes.

Besides,

- Considering that his/her attitudes impact students' success, teachers should have more lively classes, be more active during the lesson, provoke desire to learn in their students, have a sense of humor, and display positive attitudes. Only in such settings do students feel free to talk abbot their problems related with the course;

- Promoting interaction, pair and group works should be integrated in lessons more often so that students can know each other better, see they are not worse than others, and witness that even the best and talented students can make mistakes. For instance, creative writing activities prepare students for writing emotionally and offer opportunities for group work;

- Teachers should co-operate with their students about composing-process. Students' written works should be handled in accordance with planning, writing, and editing steps;

- Teachers should not miss the chance to teach linguistic features such as grammar and vocabulary; they should incorporate them into writing class whenever possible and necessary. For example, word-hunt games can be played through brain-storming, which enhances fun and participation;

- Students should be given enough time to plan how to start writing and what to write. Teachers should take this into account while planning class time;

- Teachers should guide students, praise them on the spot, and comfort them by telling that they should not be afraid of making mistakes.

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Appendix

Retrospective Composing-Process Questionnaire

Read the following statements on how you have written the composition. Answer "Yes" or "No".

Pre-Writing		**Yes**	**No**	**Points**
1.A	I thought about content before beginning to write.			3
1.B	I thought about organization before beginning to write.			3
1.C	I thought about audience before beginning to write.			3
2.A	I read the instructions in the task several times.			1
2.B	I wrote an outline.			1
3.C	I listed ideas.			1
3.D	I jotted down words			1

While-Writing		**Yes**	**No**	**Points**
3.	I thought and wrote in French from the beginning.			1
4.	I avoided writing whatever idea came into my mind.			1
5.	I tried to write as much as possible.			1
6.	I seldom stopped in the middle.			1

7.	While I wrote my composition, I paid attention to the following aspects of writing:			
A.	Content			3
B.	Audience			3
C.	Organization			3
D.	Vocabulary			2
E.	Grammar			2
F.	Spelling/punctuation			1

Post-Writing		**Yes**	**No**	**Points**
8.	After I wrote my composition, I reread my composition by paying attention to the following aspects of writing:			
A.	Content			3
B.	Audience			3
C.	Organization			3
D.	Vocabulary			2
E.	Grammar			2
F.	Spelling/punctuation			1
9.	I revised my composition by paying attention to the following aspects of writing:			
A.	Content			3
B.	Audience			3
C.	Organization			3
D.	Vocabulary			2
E.	Grammar			2
F.	Spelling/punctuation			1

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Practices of and Roadblocks to Teacher Leadership in the United Arab Emirates' Schools

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Abstract

This study investigates teachers' perceptions of their leadership practices in United Arab Emirates schools and the contextual and personal factors which support or deter them from becoming teacher leaders. The study used a mixed research design. First, a self-administered questionnaire was completed by 937 teachers in one big city in the UAE. Then, individual interviews with ten teachers were conducted. The study found that while certain leadership roles, as measured by the questionnaire items, are often practiced by teachers, other activities such as leading action research or participating in professional groups, are practiced infrequently. Interview data revealed that teachers perceive that school administrators usually encourage them to take on leading roles, but that administrators also rely heavily on "in-group" teachers to take on leadership activities. Further, school contextual factors such as lack of time, language barriers, and style of leadership; or personal factors such as teachers' assumptions about and willingness to take on additional leadership duties are roadblocks to a full realization of the potential for teacher leadership and its associated benefits in UAE schools. Recommendations on how to foster teacher leadership on a wider scale in the UAE schools are presented.

Keywords: teacher leadership, UAE schools, UAE teachers

1. Introduction

The UAE Ministry of Education (MoE) has historically been the only federal government body to manage the affairs of education in all seven emirates. By the turn of the century, schools had been criticized for using traditional teaching methods and the whole system was blamed for producing students who were not ready for college level education. Despite numerous attempts to improve the system through programs such as model schools and Schools of Tomorrow, the results were not promising (Dickson, 2012). The UAE leaders established the Abu Dhabi Education Council (ADEC) in 2005 to oversee education in the Abu Dhabi emirate, the largest and most populated emigrated in the UAE. Since the establishment of ADEC, the Abu Dhabi education system has experienced major changes. A new standards-based curriculum was introduced to focus on critical thinking and problem solving skills. As part of this reform, Public-Private Partnerships (PPP) was initiated to enlist private educational companies in helping schools adapt to the new reforms. Further, new English medium textbooks for English, Science, and Math have been introduced in all Abu Dhabi schools (Farah & Ridge, 2009). At the end of the PPP project, in 2010, the Abu Dhabi Education Council (ADEC) launched the New School Model (NSM) with updated new curricula and teaching methods to encourage students to be creative, independent thinkers, and problem-solvers (Abu Dhabi eGovernment Gateway, 2015). These reform initiatives viewed teachers as leaders and provided them with formal leadership roles through which they can share their expertise (Taylor, Yates, Meyer, & Kinsella, 2011). As educators meet the demands and challenges of reforms, the view of a school principal as the sole leader in a school has been superseded by trends toward distributed leadership (Harris & Spillane, 2008). In theory, the view of "teachers as leaders" stimulates excellence in practice and empowers the school community to participate in school improvement and embrace reforms easily (Childs-Bowen, Moller, & Scrivner, 2000; Wallace Foundation, 2013). As Shah (2014) puts it, with new feelings of responsibility and ownership, change can be easily achieved. However, change is not always easy or linear. New leadership practices can be expected to incur new responsibilities and challenges for educators throughout the educational system. Therefore, this research attempts to explore teachers' perceptions of the extent to which they practice teacher leadership and the factors which support or hinder them in becoming teacher leaders in

ADEC schools.

1.1 Research Questions

The study was guided by the following questions:

1) To what extent do teachers practice leadership in Al Ain schools?

2) How do teachers perceive supporting and deterring factors to teacher leadership in Al Ain schools?

1.2 Significance

The results of this study delineate factors that support or limit teachers in practicing their new roles as teacher leaders and thus will assist in determining the practices that should be adopted to foster teacher leadership in UAE schools. ADEC could build on the findings of this study to improve its new policies by providing training on specific leadership practices and removing roadblocks to teacher leadership. This study should also serve as an impetus for further research on teacher autonomy and development in the UAE context.

2. Literature Review

Studies have shown that school leaders need to empower teachers and build collaborative cultures in order to meet students' needs and improve classroom practices (Waldron & McLeskey, 2010). Giving teachers more autonomy and allowing them to practice leadership roles develop their self-confidence and enhance their classroom practices (Taylor, Yates, Meyer, & Kinsella, 2011). When the school principal shares leadership with teachers, teachers exhibit self-efficacy (Zinke, 2013) which impacts students' achievement positively (Mahmoee & Pirkamali, 2013; Mojavezi & Tamiz, 2012; Caprara, Barbaranelli, Steca, & Malone, 2006). Shared or distributed leadership among the principal, teachers, and members of the school lead to school development and a better school climate (Heck & Hallinger, 2009; Fairman & Mackenzie, 2015).

According to Leithwood, Mascall, and Strauss (2009), distributed leadership maximizes the benefit from teachers' capabilities, encourages interconnection among colleagues, and enhances the sense of commitment to the school, thereby helping schools manage the significant challenges of reform more gracefully (MacBeath, 2009).

Teacher leadership as one facet of distributed leadership does not happen once; it accumulates over time through professional experience and developing self-efficacy (Hunzicker, 2012). Teacher leaders are the ones who interact and learn with others; reach consensus in decision making; act as role models; strengthen teaching skills; focus on classroom and curriculum improvement; and manage time effectively (Stephenson, 2011).

Gordon (2004) delineated three models for teacher leadership: lead teacher, multiple leadership roles, and "every teacher is a leader" model. A lead teacher could be an "advising teacher, staff development associate, and helping teacher" (p. 92). The role of lead teacher is to work with teachers to improve their classroom practices. The multiple leadership roles model consists of many possible leadership roles such as preservice teacher educator, member of a university team that plans, coordinates and supervises preservice teachers; mentor of beginning teachers; teacher trainer; school governance team member; or program developers in areas such as professional development, curriculum, student assessment, school improvement, school-community relations, extracurricular activities, or parent education.

The third model, "every teacher is a leader," is the most inclusive view of teacher leadership in that every teacher is seen as a leader who facilitates the development of others regardless of his/her position in the school. In this model, the teacher is a mentor, peer tutor, and coach who shares experience in an informal context. Gordon (2004) argued that this model of teacher leadership is well suited to reforming schools because it promotes the highest level of teacher investment and efficacy and eases the process of change.

Teacher instructional leadership is developed by working with colleagues to improve content knowledge and pedagogy through critical reflection on teaching practices formally and informally (Stephenson, Dada, & Harold, 2012). In this way, teacher leadership is cultivated collaboratively (Hunzicker, 2012) by engaging teachers in developmental tasks which build positive relations with colleagues and give teachers chances to work together (Gigante & Firestone, 2008).

Teachers who practice leadership roles possess curiosity, commitment to students' learning, and a positive orientation towards internal and external professional development (Taylor, Yates, Meyer, & Kinsella, 2011). They have intrinsic motivation to improve teaching, learning, and assessment (Stephenson, Dada, & Harold, 2012) and they are not afraid of taking on responsibility (Muijs & Harris, 2006). They are humble, search for learning from everyone, and learn from their mistakes (Collinson, 2012). Teachers who are leaders have good interpersonal communication skills; they question the existing practices, and try to solve any conflict that

confronts them (Fairman & Mackenzie, 2012).

Still, it is not feasible for teachers to practice leadership with no difficulties. Challenges come from a variety of sources including a tendency toward top-down initiatives, lack of time, extra work, and lack of experience or confidence. In addition, some school principals are not willing to relinquish or share their power, while others lack effective communication skills (Muijs & Harris, 2006).

Other barriers to teacher leadership include a lack of trust among teachers if individuals receive credit for themselves over their colleagues (Stephenson, Dada, & Harold, 2012). Further, some teachers do not trust their abilities to lead their colleagues, and others describe experiences in which their work was not accepted or noticed by the school principal (Lizotte, 2013). Therefore, building trust and strengthening relationships among teachers is one of the essential roles that a school principal should play to maintain a supportive culture for teacher leadership (Roby, 2011; Gigante & Firestone, 2008).

Having clear expectations for teachers and empowering them to assume leadership roles promotes teacher leadership in schools. Teachers also need to feel that their principal views them as colleagues, and, unsurprisingly, they like their efforts to be recognized (Gigante & Firestone, 2008) with monetary compensation for assuming leadership roles (Lizotte, 2013).

3. Method

The study follows a sequential, exploratory mixed methods design (Creswell & Clark, 2006) that consists of two phases: the first phase is quantitative data collection followed by a second phase of qualitative data collection. These two types of data were used to reach a deeper understanding of how teachers viewed their leadership practices and which factors helped or hindered them in ADEC schools.

3.1 The Quantitative Phase

In this phase, a researchers-developed questionnaire was delivered to all Al Ain city schools and collected two days later by graduate student researchers. The questionnaire consisted of 35 items, drawn from literature on teacher leadership practices. The questionnaire was divided into two parts, the first of which collected demographic information about participants and the second of which contained statements investigating participants' degree of agreement on teacher leadership practices. A four-point Likert rating scale was used to measure responses (4 = strongly agree, always; 3 = agree, often; 2 = disagree, rarely; or 1 = strongly disagree, never). The questionnaire was reviewed for content and face validity by a team of experts consisting of four faculty members from the College of Education at the United Arab Emirates University.

Modifications based on their common suggestions were made before the researchers sent them to schools. Cronbach alpha coefficients for the questionnaire are shown in Table 1. All values are above 0.75 which indicates good reliability.

Table 1. Cronbach alpha coefficients

Questionnaire section	Number of items	Cronbach's alpha
Practicing teacher leadership	18	.92
School factors	9	.91
Personal factors	8	.76
All items	37	.94

3.1.1 Participants

Of the 937 questionnaire respondents, 517 were female and 420 were male. Most respondents had a bachelor’s degree (740), 164 had a master’s degree, and eight had a doctorate degree. The composition of participants shows a mix of Arab teachers (766) and 171 expatriate teachers from South Africa, England, North America, and New Zealand. Table 2 has more details.

Table 2. Demographic information

Participants		Cycle				Total
		cycle 1 (grades 1-5)	cycle 2 (grades 6-9)	cycle 3 (grades 10-12)	more than one cycle	
Gender	Male	40	182	144	54	420
	Female	169	154	158	36	517
	Total	209	336	302	90	937
Experience	5 years	37	34	35	10	116
	5 -10 years	82	118	93	39	332
	11-15 years	81	167	156	38	442
	16+	9	16	17	3	45
	Undefined	0	2	0	0	2
	Total	209	335	301	90	937
Education level	Diploma	9	5	4	0	18
	Bachelor's	162	265	242	71	740
	Master's	32	63	52	17	164
	PhD	2	3	2	1	8
	Others	4	0	1	1	6
	Undefined	0	0	1	0	1
	Total	209	336	301	90	937
School Type	Female school	93	151	158	35	437
	Male school	94	185	144	55	478
	Mixed school	22	0	0	0	22
	Total	209	336	302	90	937
Nationality	Arab	163	270	253	80	766
	Expatriate	46	66	49	10	171
	Total	209	336	302	90	937

3.1.2 Quantitative Data Analysis

Data collected from the questionnaire were analyzed using SPSS. The mean and standard deviation were used to show the central tendency of each response. The researchers used the following scale to interpret the means: *always* for means between 3.25 and 4.00; *often* for means between 2.5 to 3.24; *rarely* for means between 1.75 and 2.49; and *never* for means between 1 and 1.74. In addition, cumulative degrees of disagreement (for choices of never and rarely) were used to show the degree of participants' disagreement to each of the questionnaire statements, providing another lens to analyze the results.

3.2 The Qualitative Phase

Our purpose for the qualitative part of the study was to understand the perceptions of teachers with respect to their "disagree" responses, the realities of practicing leadership roles, and what factors might support or constrain teachers from practicing these roles. Quantitative analysis raised interesting questions and issues to start the interviews: why do teachers have infrequent leadership practices? How do teachers see the school administration as supporting them in taking on leadership roles? Do teachers have the time and willingness to fulfill leadership duties? What are teachers' assumptions of their roles as leaders?

To get a deeper understanding of these issues, we conducted semi-structured interviews with ten teachers in seven schools. Most government schools in Abu Dhabi are segregated by gender. In Abu Dhabi, cycle 1 schools serve grades 1-5, cycle 2 schools serve grades 6-9, and cycle 3 schools cater for grades 10-12. We conducted interviews with four teachers in cycle 1 schools, three teachers in cycle 3 schools, one teacher in cycle 2 schools, and two teachers in KG schools. Each interview lasted for approximately an hour and a half. The interviews were tape-recorded after consent was granted by the participants.

3.2.1 Data Analysis

The interviews were transcribed and we read the transcripts individually. We wrote notes and descriptive codes (repeated words or phrases) in the margins. Then, we developed categories or themes for these codes. Each theme was supported by quotations from the interview transcripts. We shared the themes and discussed them to answer the research questions.

3.2.2 Establishing Trustworthiness

Trustworthiness ensures validity (Johnson & Christensen, 2012) and it aims to accurately present the perspectives of the participants. In the qualitative phase of this study, trustworthiness was established by having the two researchers individually examine the transcripts to verify the interpretations from the data and to check themes as they emerged from the transcripts. Then, the researchers discussed the themes and consensus was reached on important themes, which were once again reviewed in terms of the narratives from the transcripts.

4. Results

4.1 Results of Quantitative Study

On average, male and female teachers often practiced leadership roles as measured by the questionnaire items. The means of most statements are between 2.5 and 3.24. Further, both male and female teachers agreed that they always helped colleagues plan for lessons, prepare activities, and communicate with parents. The data show that female teachers practiced more leadership roles in preparing extracurricular activities with other teachers.

Table 3. Means and % of disagreement between male and female teachers over leadership practices

Items	Means		% of disagreement	
	Male	Female	Male	Female
I help my colleagues to plan for their lessons.	3.31	3.46	14.45	6.09
I help my colleagues prepare classroom activities.	3.27	3.41	12.53	7.94
I help my colleagues prepare extracurricular activities.	3.10	3.27	22.51	17.96
I give my colleagues feedback after observing their classes.	3.18	3.14	16.90	21.20
I orient the beginning teachers about the school policies and rules.	3.36	3.27	11.80	17.61
I advise the beginning teachers in how to accomplish their work.	3.37	3.22	10.57	17.38
I train my colleagues to use different teaching methodologies.	3.06	2.98	20.28	26.17
I train my colleagues to use technology in teaching.	3.19	3.05	18.22	24.60
I provide my colleagues with articles and websites to develop their teaching skills.	3.13	2.98	16.38	26.01
I conduct action research to develop teaching practices in the school.	2.66	2.31	44.20	59.25
I participate in planning for professional development programs in the school.	3.09	2.76	23.00	38.67
I participate in developing assessment tools for assessing students' achievement.	3.14	2.98	18.26	23.19
I lead some school projects.	2.93	2.52	31.15	49.80
I participate in developing school projects as member in different teams.	3.08	3.06	21.01	25.19
I am a member in the school council.	2.59	2.31	43.79	55.75
I communicate with the community institutions to support school activities.	2.72	2.57	41.30	46.09
I communicate with caregivers for the best interest of children.	3.36	3.35	10.047	10.87
I participate in teacher professional associations.	2.27	2.04	58.51	69.16

In general, the responses to questionnaire items suggest that both male and female teachers often practiced leadership roles. The means of most statements were between 2.5 and 3.24. Further, both male and female teachers agreed that certain practices were always performed such as helping colleagues to plan for lessons, preparing for classroom activities, orienting new teachers to school policies and rules, and communicating with caregivers. The data show that female teachers practiced more leadership roles in preparing extracurricular activities with other teachers while male teachers practiced more leadership roles in advising the beginning teachers to accomplish their work. Data show also that there were a number of rare practices. These were conducting action research, being a member in the school council, and participating in professional associations. In fact, the degree of nonparticipation in these practices was strikingly high, ranging from around 40% to 70%, particularly for the male teachers, 69.16% of whom indicated disagreement toward the statement, "I participate in teacher professional associations," as compared with a 58.51% level of disagreement among the female teachers in response to this question. With regard to the statement "I communicate with the community institutions to support school activities," the mean score was above 2.5 which means it is often practiced. However, the percentage of disagreement was still higher than 40% for males (41.3%) and females (46.09%). These quantitative results motivated the researchers to dig deeper into the reasons behind these trends by conducting a qualitative inquiry.

Table 4. Means and % of disagreement between male and female teachers over school factors that support or hinder their leadership practices

Items	Means		% of disagreement	
	Male	Female	Male	Female
Teachers at this school encourage each other to lead different school activities.	3.23	3.22	12.70	13.00
The school provides an allowance to encourage teachers to participate in leadership tasks.	2.60	2.26	12.70	13.00
The Abu Dhabi Educational Council's policies encourage teachers to initiate projects and activities that develop their leadership skills.	3.12	2.75	18.55	34.24
The school principal encourages teachers to join professional development programs that support their leadership skills.	3.22	3.00	16.38	25.73
The school principal encourages teachers to search for new opportunities to improve their leadership skills.	3.23	3.06	16.78	23.00
The school principal distributes leadership tasks among all teachers.	3.34	3.17	12.25	18.30
The school principal gives teachers continued feedback to develop their leadership skills.	3.25	3.19	16.98	19.56
The school principal encourages teachers to work in groups.	3.46	3.50	8.63	5.82
The school principal trusts teachers' abilities to get the leadership tasks done.	3.45	3.48	10.31	8.03

Data on school factors that support teachers' leadership practices were mostly positive. Male and female teachers felt that the principal always encouraged them to work in groups and trusted their abilities to get the leadership tasks done. Male teachers felt, more than the female teachers, that the principal distributed leadership roles fairly among teachers and gave continued feedback. Female teachers, on the other hand, reported that the school rarely provided incentives to encourage teachers to take on leadership roles and that ADEC policies do not often encourage teachers to initiate projects.

Table 5. Means and % of disagreement between male and female teachers over personal factors that support or hinder their leadership practices

Items	Means		% of disagreement	
	Male	Female	Male	Female
I can assume different leadership responsibilities.	3.66	3.44	1.92	7.99
I have enough experience to assume leadership roles in the school.	3.60	3.30	2.16	12.47
I am curious to learn new things about teaching and learning.	3.61	3.56	3.38	4.65
I have enough time to work on leadership tasks.	3.19	2.72	16.19	38.44
I prefer to undertake leadership tasks without a formal request.	3.25	2.94	15.14	27.47
I prefer a formal leadership position which identifies my responsibilities.	3.35	3.22	8.61	14.48
I want my work to be recognized.	3.61	3.54	5.01	6.62
I need training to assume a leadership position.	3.06	2.95	18.57	27.62

The majority of male and female teachers believed that they have the ability and experience to take on leadership roles. They expressed that they were always curious to learn about leading teaching and learning and always needed their work to be recognized. The percentages of disagreement showed that many female teachers did not have enough time to work on leadership tasks (38.44%). Moreover, the majority of them expressed a need training to assume leadership positions (27.62%).

4.2 Results of Qualitative Study

The findings of qualitative data were organized into three main categories. The first category focused on practices that teachers believed showcase their leadership roles in schools, including an activity such as action research, which was not frequently practiced by most teachers. The second and third categories concerned the personal and school-related factors which might have supported or hindered teachers from taking on leadership roles. When approached this way, the findings align smoothly with the quantitative data.

4.2.1 Leadership Practices

When it comes to practices that demonstrate teacher leadership, professional development was usually *the* number one example given by teachers. For the past few years, ADEC hired private companies such as Nord

Anglia, GEMS Education, and CfBT to provide training for the teachers. This changed last year. Presently, professional development is to be done locally by teachers and administrators, and ADEC requires every school to organize and deliver professional development sessions. Schools work on reorganizing teachers' schedules to find the time for all or most teachers to attend the sessions, either during the school day or after school. This change helps bring the school community together and allows teachers to take on leadership roles in their schools and support the professional development of their colleagues.

Another leadership practice, which directly includes the element of student development, is leading student projects. Some teachers believe that the curriculum itself allows them to take on leadership roles or develop service learning projects with their students. According to Hessa, a female Islamic cycle 3 teacher, the "curriculum [has] certain activities, which help teachers in attaining leadership roles" related to those activities. Teachers and students in Abu Dhabi schools work collaboratively on many such projects, some of which were subject-related and served the content being taught. For example, in Biology, students conducted outreach programs for families to examine blood pressure and screen for diabetes. As Hessa expressed, "for every subject, we are asked to lead projects with students. We plan for and carry out those projects together."

Teachers were also involved in leading community service learning projects, in which teachers of given subjects cooperated with relevant community service units to facilitate student projects. In one such example, social studies teachers collaborated with the Family Development Foundation on "the 'supply basket' [program] where students brought food items such as sugar, flour, oil, milk, etc. and gave out those baskets to needy families," as Aysha, a female social studies cycle 1 teacher, described. Students in other schools "bought calling cards for the workers and gave them gifts," said Anna.

It was obvious that the work teachers do with students does not stop at leading projects but extends to forming student-teacher relationships, where students start to trust their teachers and seek their advice, thus forming another arena where teachers practice leadership roles. Anna, a female English cycle 3 teacher, is one example of a teacher who listens deeply to student concerns. "My girls do come to me whenever they have problems or issues -- whenever, I would say. Other students as well come so I actually have to help with that." We found this attitude with other teachers. Ali, a male Islamic cycle 2 teacher, stated that his role is not only teaching the subject but being with students when nobody is there for them. "Some students have social problems, their parents are separated, or one of them is dead; so I need to be with them." Fatema, a female Arabic cycle 1 teacher, reiterated, "I love working with my students especially those who need assistance and those for whom I know that I can make changes in their lives. I always look for those students and I love to release their potentialities."

On the other hand, as the quantitative data showed, action research was infrequently practiced in schools. This was confirmed in the interviews. Not all teachers are aware of how to do action research. They try to solve school or classroom problems but these solutions are not pursued through a formal action research approach. Some teachers articulated that they sometimes collected information from the students and their parents to solve problems related to students, but they were not aware that what they did could be formulated as action research. This is what Ali, a male Islamic cycle 2 teacher, stated, "We try to look at why some students behave in certain ways that distract their classmates. We meet with their parents to find out means to solve the problems." But these efforts went undocumented and thus the resulting benefits were not shared with other teachers.

4.2.2 School-Related Factors

School-related factors can be divided into two main sections: supporting and deterring factors. One important factor that helped teachers to take leadership roles is when their school administration is supportive. ADEC emphasizes that teachers should work together in teams to attain school goals. To do so, each school divides the teachers into committees according to the school improvement plan. This is one way for teachers to practice leadership. In fact, as Aysha, a female social studies cycle 1 teacher, mentioned, "Every year, ADEC sends a letter to all schools asking principals to divide the schools into teams to carry out the school improvement plan." On the other hand, this could raise a problem if, as Fatema suggested, "The teachers have to be assigned to teams even if teams do not fit their needs or desires. There is no motivation, only we have to be in teams!"

Another supporting factor is when "the assignment is clear and there is trust from the administration," as Zahra, a female English cycle 1 teacher, expressed. Heather, a female English cycle 1 teacher, added, "when choosing someone to lead is not instigating any bad feelings in fellow teachers," this would be a supporting factor.

In addition, evaluating teachers based on their contributions to extra activities encourages teachers to assume leadership roles in schools. "One of the teacher's evaluation criteria is to show incidents when you lead school projects or other teachers," Zahra said. "When I do extra work outside their classroom, I get credit for it… the

administration keeps track of teachers' activities," Noura, a KG teacher explained. This encouraged teachers to volunteer for leadership roles. In some schools, however, this was not perceived to be true. Rhonda, a female special education cycle 1 teacher who leads many initiatives said, "My evaluation was the same as other teachers who did not do much."

While we found a handful supporting factors, the deterring factors were many. The first among deterring factors was lack of time. The teachers we interviewed argued that they were overwhelmed by too many classes and administrative work. Every day "new tasks pop up and are thrown to [teachers]." According to Ahmed, a male chemistry cycle 2 teacher, "You cannot be a leader and inspire others with all these demands from the school, the Council, and work. We are multitask teachers. We have no time!" Heather explained, "They ask you to lead some activities like Open Days but they keep your other duties unchanged… it is hard to cope with those demands, especially with no other privilege or support." Zahra concludes, "Do not expect an exhausted teacher to give… the thinking of a pressured teacher is usually negative even if you provide good facilities… we need time."

Lack of recognition was an important deterring factor. When leading teams or activities came with no recognition, teachers tried to withdraw or run away from leadership work. Fatema explained, "The status of those who work hard is the same as those who do not work at all; at the end we have the same salary and the same benefits. Why should I bother myself to do extra work?" Further, Ahmed said, "some of us have family commitments and home responsibilities; we are not willing to take extra work for nothing… without incentive or formal position."

Another deterring factor is fear of sharing power or authority. In some schools, the administration believes that "as far as we give some teachers more leading roles, this might have adverse effects on us," said Heather. Some administrators seem to feel threatened by teachers who have informal authority over other teachers or students, and some teachers might share these feelings as well. Zahra expressed, "a powerful teacher is to be feared. I remember one teacher from New Zealand who was seen as a leading figure in the school. Once he objected to one of the decisions of the vice principal; many other teachers started to support him."

Another deterring factor was when the administration overwhelmed willing teachers through assigning more and more leadership roles. Teachers were selected to take on leadership roles because of their abilities. Anna, who was given leadership tasks not the least of which was the coordinator of the English department at her school, said, "I have a strong work ethic, and they know if they give me something, I'll do it. I think it's a personal preference for the administration, to be honest, about who they prefer, who they trust to do things." However, it seems that trust invested in those teachers can easily become a burden. Heather explained, "I would say that administration does pick a certain group that certainly does the leadership things in this school… but I think that gets me in trouble sometimes because then, I'm overworked." Speaking to the administration about the issue would not have changed the situation because the administration believed that those were the able teachers who got things done. Noura viewed this as a mistake: "If you always select certain people to do the work, other teachers will know that even if they abstain, others will do it." The administration should plant "a sense of responsibility in teachers." The problem, as Rhonda viewed it, was "when you show abilities and do something creative, you are given more assignments… This made [her] withdraw and hide [her] skills for fear of getting more work."

Language barriers were yet another deterring factor for taking on leadership roles. Teachers in ADEC schools are of three categories: nationals, expatriate Arabs, and native speakers of English. This composition created a noticeable language barrier and consequently it was not easy for all teachers to take on leadership tasks because teachers inside a school could fully comprehend each other. English-only teachers also faced communication difficulties with Arabic-speaking parents. Heather explained, "Because there is lack of communication, the English department does have a severe language barrier. For example, when we have parents' conferences, we have to have one of us on a different table with Arabic speaking teachers who are trained to talk with the parents." Sometimes circulars are distributed in Arabic and this is another hassle to English native teachers. In a context where communication is an issue, teachers cannot fully commit themselves to leading activities.

Another important school-related factor which hinders teachers from taking on leadership roles is when they identify with their departments, rather than the school, creating leadership within the department, but not at the school level. It was clear that some leadership effort is done within individual departments, but it does not spread out to other departments which raise concerns about school-wide leadership practices. This was a feature of an English department in which, Anna explained, "We lesson plan together, we meet, we cling together, and I know for a fact that the other departments don't, and each person does tons of things alone." Heather described the situation in her school: "Before, each one did their own thing; now they are very much working together, so

there's a big difference than before." However, this is not the norm in many schools. Many teachers still prefer working individually and when they are asked to work collaboratively, they do it in a technical sense.

4.2.3 Personal Factors

Qualitative data revealed two major personal factors which can support or hinder teachers thinking of taking on leadership roles. These are how teachers perceived the definition of teacher leadership; and the extent to which they were willing to take on leadership roles. While a few teachers understood the true meaning of the leadership role they could play, many of those we met were not familiar with the concept of "teachers as leaders." Ahmed correctly understood teacher leadership as inspirational -- "inspiring each other and being a role model for teachers and students." Hessa, however, views it as using new methods of teaching. "We had frontal teaching before, but now we use different strategies." She defined her leadership role as a teacher in mostly managerial and pedagogical terms, "I suppose a teacher leader is not to carry all the load by herself; she should distribute the work, she has to become a facilitator, not controlling teaching." Other teachers thought that dividing and organizing work amongst themselves was teacher leadership, as when a group of teachers sit together and agree on who is going to plan for what lessons. Or as Rhonda said, "to be in a group… to help organize and to assign roles… to give them ideas." This limited view applies to administrators as well. Ali explained, "Administrators in some schools understand teacher leadership in terms of assigning teachers to teams and having team leaders according to the school improvement plan." These examples suggest that the term itself is not commonly used in the schools we visited.

One last supporting factor for taking on leadership roles is gaining better understanding of what happens in the school. This occurs when a teacher has the willingness to come forward and volunteer for leading roles. It usually happens with newly-hired teachers or native English teachers who come from abroad to teach in ADEC schools. Anna explained, "You'll kind of create a bigger picture of the school… I can actually see the connection, where other people who don't get to see every detail of it … they really don't see the connection."

Our data revealed that many teachers preferred to be asked formally to do a certain leadership task. Hessa said that in a school of 100 teachers, only 10 would come forward with ideas and suggest to do something. "Others would want the administration to assign tasks." Fatema said, "I would like to have leadership work assigned to me by a decree, so I know my responsibilities." According to Anna, "Very few actually volunteered to do outside things… It's only a handful of people who have this desire to volunteer." Anna explained the fact that "on their own teachers will refuse any 'extra' work."

On the other hand, when teachers are assigned leadership tasks or forced to take them on, they do them without much desire." As Noura expressed, "The message is: you go do it. Ahhh! Let's go, let's do it. Or do you [want me to] bring more to it? They are not the same." Hessa explained the "do the job" attitude by saying, "I prefer to have the desire… I will do more, I will feel my achievement. Giving me a task becomes a must and I have to do it, but it does not have the same impact."

5. Discussion

This study utilized a mixed research method to explore teachers' leadership practices and the factors which helped or hindered them from being teacher leaders in ADEC schools. The quantitative results showed an optimistic picture of leadership practices in schools; however, the qualitative data showed a rather different reality. The quantitative results indicated that male and female teachers often practiced leadership roles, as ADEC and school principals require teachers to work collaboratively to establish and implement improvement plans in their schools. This result is supported by the qualitative data as ADEC schools establish themselves through many reform and change attempts. It is not surprising that teachers in ADEC schools often undertake active leadership roles in teaching and learning as part of the new school reform. For instance, they are required to plan their lessons and activities collaboratively. In fact, school principals always encourage teachers to work in groups. Also unsurprisingly, and in line with the same idea that ADEC requires teachers to do certain tasks to support the new reform, the results of the interviews indicate that two of the most common leadership roles teachers currently play is being providers of professional development sessions and being advisors to students. Providing professional development for colleagues, Gordon (2004) stated, is one mode of leadership that teachers could practice to improve schools (see also Heck & Hallinger, 2009).

Moreover, both qualitative and quantitative data confirmed that there were some rare teacher leadership practices such as conducting action research and collaborating with community institutions or professional associations. Many teachers did not practice action research. Indeed, they were asking us what we meant by action research during the interviews. The reason for not having action research in schools might be that the current educational changes by ADEC do not emphasize it, but it could also be attributed to the lack of attention to action research in

teacher preparation programs and internship training. As to why teachers were not collaborating often with the community or participating actively in professional associations, this could be due to system-wide policies and cultural norms. During the interviews, we came to know that whenever an activity involving a visitor from outside the school system was planned, security clearances were needed to protect schools from intrusion by religious or political interest groups. The government discovered at one point, for example, that the Muslim Brotherhood was attempting to penetrate the professional associations of teachers. Therefore, teachers had limited their activities or become hesitant to seek membership in such associations.

Most teachers perceived their "leadership" roles as mainly focused on teaching students in the classrooms and trying to have students improve their achievement. In fact, the term 'teacher leadership' is not commonly used in the schools we visited. Many of those we met did not know what was meant by "teachers as leaders," and they associated the term "leadership" with formal leadership positions. This could be because they understood that, as Fairman and Mackenzie (2015) found, their work focused on teaching and learning, not on leadership. This conclusion is evidenced by the fact that none of the teachers we interviewed mentioned coaching or mentoring among the roles they believed they should play. Similarly, Xie and Shen (2013) found that most teachers understood their leadership roles as limited to the classroom level.

The quantitative data revealed that school administrations mostly supported teachers' leadership practices. The principals encouraged teachers to work in groups and trusted their abilities, distributing leadership roles fairly among teachers and giving them continued feedback. However, qualitative data pointed to plenty of factors that deterred teachers from practicing leadership roles. It is true that principals routinely encouraged teachers to work in groups. However, fair distribution of leadership roles was an issue since in most schools, the principals had a preferred group of teachers who were given more chances and support to claim leadership roles than others. This suggests that leadership roles in schools are not as equally distributed as the questionnaire responses indicated.

The bureaucratic and centralized nature of the education system in ADEC explains why female teachers perceived schools as rarely providing them with incentives to take on leadership roles. In addition, while ADEC promulgates a culture of teamwork in schools, the policies and procedures were silent about incentives for teachers to work on projects or lead teams.

In contradiction to the questionnaire data, teachers in the interviews expressed that they were loaded with teaching and administrative duties, and did not have sufficient time to perform their leadership tasks. In fact, the percentage of disagreement to the statement that teachers have enough time reached around 40% for female teachers. This finding concurs with Muijs and Harris (2006) who found that lack of time was one challenge to teacher leadership.

Some teachers felt that they would be overworked if they were known as hard workers. If true, this attitude from school administration toward hard work would make diligent teachers not only keep a low profile and avoid showing leadership skills, but also do the assigned tasks in a mediocre fashion so that they would not be selected in the future for leadership tasks.

Qualitative data showed that some school administrators felt insecure when teachers showed leadership charisma. It is widely considered acceptable for most schools to have multiple formal and informal leaders (Spillane, 2005), and Fowler (2014) argued that "wise administrators are able to identify these people and welcome their cooperation in building a good school; foolish ones seek to dominate them, showing them 'who's the boss.'" (p. 41). Our data showed that in most cases, school principals, while encouraging teachers to claim leadership roles, were watchful of the fact that charismatic teachers can influence school operations. This indicated a traditional leadership style where principals feel overshadowed by effective teachers and therefore try to keep things under control. Unfortunately, most school principals in the schools we visited held to the traditional view that they were the only leaders based on the hierarchical system in their schools and teachers should be limited to teaching and the extra work given to them by the administration.

At the same time, many teachers felt that they were forced to be in teams and they asked for incentives if they were to be assigned leadership duties. Many of them preferred to be asked formally to do leadership tasks. We consider the views of principals and teachers as explained above to be serious roadblocks to genuine teacher leadership practices in schools. Gigante and Firestone (2008) supported the same concept by stating that limited views do not build teacher leadership in schools.

Qualitative data showed that departmentalization is one barrier to the practice of leadership roles in ADEC schools. In fact, most teachers see themselves as belonging to departments and assuming roles within those departments, but they tended not to identify as strongly at the school level. Although ADEC schools have mission and vision statements which should direct the schools as integrated units, it seemed that school

principals were not able to foster a sense of unity among teachers, and this needs to be addressed as Roby (2011) posited. This issue is compounded by language barriers that affect oral and written communication in ADEC schools. Whether a native English speaker or native Arabic speaker is given a leadership role at the school level, communication is an issue.

5.1 Implications

Based on the findings of this study, the following recommendations and implications could be adopted to foster teacher leadership in UAE schools and to eliminate the roadblocks to teacher leadership:

- Educational policies should be reviewed to empower teachers. ADEC's new policies require that school principals demonstrate the ability to lead people. The same should be required from teachers. Leadership ability should become one of the evaluation criteria for teachers. Those teachers who show clear evidence of leadership should be rewarded.
- Teachers should be oriented to and trained on teacher leadership. Traditional views of teaching and teachers should be examined and changed accordingly. ADEC should target this change as one of the means to foster current reform.
- Obsolete views of leadership and the fear of influential teachers should be dealt with through training.
- School principals need to distribute leadership roles fairly to all teachers and encourage all teachers to participate. They should not overload hardworking teachers; otherwise, they may withdraw from undertaking leadership roles in schools.
- Teachers should be consulted on the formation of school teams. This will increase their investment and motivate them to work with other teachers and ensure the quality of the work.
- Teachers need to be trained on how to conduct action research in teacher preparation programs and during their in-service training.
- School leadership should provide teachers with needed support to practice leadership roles whether it is time or some other incentive.
- Teachers who are capable of leading their colleagues or students should be asked formally to assume leadership positions, and to document their work as such.
- Collaboration among school departments should be encouraged to exchange experience and share best practices to the whole school.

School leadership should encourage Arabic teachers to reach out to and communicate with English native speakers, especially because most Arabic teachers are bilingual.

5.2 Further Research

Among the most salient results from this study are the discrepancies that we observed between the quantitative and qualitative data that we collected. We believe that in most quantitative studies in the UAE, respondents give the socially acceptable responses. Many factors come in when they complete questionnaires. Therefore, we advise future researchers not to be satisfied with quantitative data alone, as multiple tools will likely be needed to obtain credible data. Further, it is important for researchers in the UAE to be open to other researchers who could audit their data collection, data analysis, and interpretations. As a continuation of this research, we suggest collecting qualitative data from school principals to explore their perceptions of the leadership opportunities for teachers in their schools and how teacher leadership could be enhanced. Another study can investigate teacher leadership and principal leadership in a few schools through detailed interviews and observations.

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"Careful, Now You Are both the Learner and the Teacher!": Student Teachers' Evaluation of Inquiry-Based Peer Lecturing as a Tool in Teacher Training

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Abstract

Linking between pedagogical content knowledge and high-level subject-matter knowledge in science teacher training remains a challenge. This paper analyses the reaction of beginning student teachers to an activity designed for this purpose, *peer lecturing*. This activity was a part of the requirements of an introductory zoology course, and included students' literature inquiry processes oriented to answer a question linked to the course's contents, followed by whole class presentation of the knowledge acquired in the inquiry. According to students' view, it seems that the inquiry component and the peer learning component of the activity induced original characteristics in the activity concerning student teachers' self-concept, students' beliefs about the level of knowledge needed to teach science, their treatment of prior conceptions, and multiple sources of reflective thinking on science teaching. On the basis of these results, the further development of teacher training activities is envisioned.

Keywords: teacher training, subject-matter knowledge, pedagogical content knowledge, reflection

1. Introduction

1.1 The Centrality of SMK in Teachers' PCK Development

Beside disciplinary knowledge (knowledge in the subject matter which the teacher is teaching), and general pedagogical knowledge, the concept of pedagogical content knowledge (PCK) was introduced by Lee Shulman (1987, p. 15) to express "the capacity of a teacher to transform the content knowledge he or she possesses into forms that are pedagogically powerful and yet adaptive to the variations in ability and background presented by students." In scientific disciplines, PCK can be broken down into the following components (Magnusson, Krajcik & Borko, 1999): (a) orientations toward science teaching, (b) knowledge and beliefs about science curriculum, (c) knowledge and beliefs about students' understanding of specific science topics, (d) knowledge and beliefs about assessment in science, and (e) knowledge and beliefs about instructional strategies for teaching science.

According to all authors dealing with PCK formation, teachers' learning in the subject matter they teach is fundamental not only as a source of subject matter knowledge (SMK), but also as a source of pedagogical knowledge (Kind, 2009). The first reason for this importance can be found in the definition of the teaching profession as a profession dealing with people's behaviour and not with objects, such that contains the possibility for the professional to verify on herself the application of the principles of her profession. Therefore, adequate preparation for teaching requires from the teacher not only learning how to help others to learn, but also learning how to learn, that is, developing as a "professional learner" (Parker & Heywood, 2013). This implies the necessity for teachers to acquire strong learning strategies (Hwang & Vrongistinos, 2002), to develop an understanding of the learning process allowing them to link it to the teaching process (Vermunt & Verloop, 1999),

and to stay constantly engaged in continuous learning in the subject-matter they teach or in learning new topics in order to teach them (Feiman-Nemser, 2001), that is, in "learning for teaching" (Shulman, 1986). The second reason for the importance of teachers' disciplinary learning in PCK development, is to be found in the nature of pedagogical content knowledge. For Shulman and his colleagues (Wilson, Shulman, & Richert, 1988), PCK is not the sum of subject-matter knowledge (SMK) and of general pedagogical knowledge, but an original form of knowledge which teachers develop by transforming their SMK and other types of knowledge (Loughran, Mulhall, & Berry, 2008; Magnusson et al., 1999). The idea of PCK developing from SMK has at least three consequences in what concerns the link between PCK and SMK in teacher training. First, it means that it is impossible to instil disciplinary pedagogical skills to prospective teachers without grounding them on disciplinary knowledge (Ball, Thames & Phelps, 2008; Capraro, Capraro, Parker, Kulm & Raulerson, 2005; Friedrichsen et al., 2009). Conversely, it implies that it is not logical to expect disciplinary pedagogical skills to bloom automatically in prospective teachers from the mere study of the discipline they have to teach (Mellado, 1998). Third, it suggests, in a fully constructivist perspective, that teacher training should not only instil theories and strategies of disciplinary teaching, but also serve as a mediator in student teachers' personal process of acquiring PCK, that is, help student teachers develop self-regulation in learning to teach (Ball & Cohen, 1999; Randi, 2004). The active role of teachers in developing their teaching skills in general, is developed in a model of learning to teach based on the concept of self-regulated learning (Corno & Randi, 1999; Kramarski & Kohen, 2015), where self-regulation in learning (SRL) is defined in general as the active and conscious effort of learners to manage their motivation, cognitive and metacognitive activity, and behaviour when learning (Zimmerman, 2008). This model of self-regulation in learning to teach gives a theoretical basis to the focus on reflective thinking in teaching to teach (Lackner-Saylor & Johnson, 2014; Schön, 1987; Zeichner, 1996).

In summary, disciplinary studies are the basis of multiple aspects of teacher development: learning the discipline, learning how to learn in the discipline, learning to understand the learning process in the discipline, and building a basis for disciplinary teaching skills, that is, PCK.

1.2 Teacher Training Programs Helping Preservice Teachers to Build PCK on SMK

The recommendations provided for teacher training by different authors highlight the importance of disciplinary studies in teachers' PCK development. The study of subject-matter knowledge appears, for instance, in all the steps proposed by Magnusson, Krajcik and Borko (1999) for effectively helping preservice teachers to develop PCK:

"1. Helping teachers examine their pre-existing ideas and beliefs

2. Addressing the relationship between subject matter knowledge and PCK

3. Situating learning experiences for teachers in meaningful contexts

4. Using a model of components of PCK to guide learning-to-teach experiences"

Similarly, in Desimone's (2009) "core conceptual framework for professional development", "content focus" is a central preoccupation.

In practice, the way in which subject matter instruction is involved in initial training remains a concern for professionals in this field. After Shulman's (1986) seminal call for a more significant inclusion of subject matter knowledge in teacher training programs, the next generation of researchers in the science teaching field expressed a concern about the abundance of training programs which do reinforce disciplinary knowledge, but without transforming it into pedagogical content knowledge (Poulson, 2001). Up to the present, efforts for adequately relating SMK and PCK are the core of a variety of teacher training programs which offer the students many possibilities to develop self-regulation in learning to teach and in teaching (Evens, Elen, & Depaepe, 2015).

The most sophisticated programs of this kind belong to the category of "integrated curricula", and are curricula which concurrently teach new scientific contents and pedagogic knowledge in the same discipline, while the students teach related contents in the field application schools and finally lead a reflection on their experience (Rubba, Campbell, & Dana, 1993). One example is the program presented by Briscoe, Peters and O'Brien (1993), including a general science course whose contents are related to the contents experienced in field application schools, guided reflection on science and on inquiry, and inquiry learning followed by peer teaching sessions of topics which the students chose by themselves (see also Justi & van Driel, 2005). Similarly, Sperandeo-Mineo, Fazio and Tarantino (2006) report a teacher training program centred on several topics of secondary physics where the pre-service students were offered the following steps: they studied pupils' misconceptions and reflected about their possible sources, conducted a short experimental scientific inquiry on the same topic,

applied mathematical modelling tools to their experimental results, reflected on the way they learned, and finally built learning units at school level in the field of the activities they experienced.

Integrated curricula are not always practicable, since that would imply the investment of a large amount of time and means into a small amount of subject matter, and require a careful adaptation of courses' schedules and contents in the institution (Magnusson et al., 1999). Simpler programs combining SMK learning and PCK development in one single course are also reported. For instance, Luft et al. (2011) describe a science-induction program where in-service beginning teachers were mentored by science and science education researchers in addition to experienced teachers. Mamlok-Naaman, Blonder, and Hofstein (2010) propose a program involving in-service teachers in graduate science courses followed by special tutoring and application to teaching. Michalsky (2012) reports a science methods workshop where pre-service teachers are induced to solve science problems, reflect on their learning process, try to predict pupils' difficulties, and analyse movies showing teachers teaching similar topics. Similarly, Parker and Heywood (2013) include in a science methods course learning sessions of new physics contents, reflection on learning, discussion on the way to introduce the same contents to pupils, and finally critical consideration of elementary school programs.

Such courses linking SMK and PCK also include inquiry learning as an authentic experience in the learning settings which the students should be applying as teachers (Crawford, 2007). Britner and Finson (2005), for instance, describe how preservice teachers plan and conduct a scientific experimental inquiry on a "topic of personal interest" and subsequently prepare and enact an inquiry-based lesson at elementary school level (see also Magee & Flessner, 2012). Friedrichsen, Munford, and Zembal-Saul (2003) engaged preservice teachers in scientific literature-based problem-based learning which was followed by communications where the students introduced the results of their inquiry to their peers. These studies present self-reported gains in students' ability and motivation to teach, and show also the depth of the reflection which the activities induced.

1.3 Peer Lecturing as a Tool in Preservice Science Teachers' PCK Acquisition

Because of the difficulties student teachers have in translating their experience as learners into teaching strategies (see for instance, Chamoso, Cáceres, & Azcárate, 2012), we wanted to ground PCK building in a situation of high level SMK and authentic disciplinary learning (Parker & Heywood, 2013; Shulman, 1986), and therefore we chose to override the limits of the methods courses and to allow the students to experience a pedagogical process within a disciplinary course itself. At the same time, we set for ourselves the constraint to respect the primary scope and organisation of the course as a fully disciplinary course. In this state of mind, we included in the requirements of a first-year introductory zoology course in teachers college, an activity which we called *peer lecturing* (Seroussi & Sharon, 2017). In this activity, the students had to search in their own time academic-level information intended to answer a question which they chose by themselves and which had to be linked to the scope of the course, and had to teach the result of their search to their peers at college level in the form of a professional scientific communication in the framework of the course's lessons, with the aim of helping the peers understand the topic of the lecture as well as possible.

1.4 Purpose and Research Questions

The general goal of the investigations reported in this paper was to check whether and how *peer lecturing* helps preservice teachers in their pedagogical development.

As a tool in disciplinary teaching, like we already showed (Seroussi & Sharon, 2017), *peer lecturing* is a form of project-based learning in which the social context adds original sources of motivation to learn, original cognitive scaffolds, and multiple contexts for reflecting about the learning process. For preservice teachers, this means profitable gains in disciplinary knowledge, as well as in knowledge about learning process (Seroussi & Sharon, 2017).

As a teacher training tool, *peer lecturing* instils in a regular peer-teaching exercise the components of high-level disciplinary knowledge, of inquiry, and of peer learning (Seroussi & Sharon, 2017). Therefore, as summarised in Table 1, it seemed very appropriate to most requirements established for the development of PCK in preservice teachers (Magnusson et al., 1999) and to some of the guidelines given for their SRL development (Corno & Randi, 1999).

Table 1. Characteristics of *peer lecturing* as they relate to requirements for activities designed to develop PCK and SRL in student teachers according to a constructivist view of teacher training. The symbols * and # refer to the two different sources: * (Magnusson et al., 1999), # (Corno & Randi, 1999)

Requirements for teacher training activities designed to develop PCK	Characteristics of *peer lecturing* and research hypotheses
"Allowing the students to actively develop their PCK" #	The task matches the situation in which teachers find themselves when preparing their lessons, regarding the degree of autonomy in learning, and the demands of self-regulation imposed upon them (Kramarski & Michalsky, 2009).
"Encourage teachers to invent, rather than imitate instructional practices" "Afford teachers choices about instruction" "Places students at the center of teacher learning" #	According to the principle of *discovery learning*, it seemed to us that before preservice teachers are taught a deeper knowledge in science education, they could benefit from an early, student-centred, and rather non-directive experience in teaching, that is, from some "discovery teaching" (Feiman-Nemser, 1983). In order to grant the students relative freedom in their PCK development during this first experience, only a small number of constraints (time limit and college level) were set concerning the way the student teachers had to teach their lesson. We expected the activity to rise students' awareness of the need to develop PCK in science teaching.
"Situating learning experiences for teachers in meaningful contexts" *	The format of the activity as project-based learning allowed the students to experience by themselves as learners one of the teaching methods they will use as teachers in schools (Crawford, 2007; Michalsky, 2012). The inclusion of the activity as a requirement in a disciplinary course ensured that the students involved themselves in learning with a sustained effort.
"Helping teachers examine their pre-existing ideas and beliefs" *	The necessity of discovering and studying by themselves the topic they have to teach, was expected to enhance student teachers' sensitivity to their prior conceptions on the topic (Parker & Heywood, 2013)
"Addressing the relationship between subject matter knowledge and PCK" *	The inclusion of students' first experience in science teaching in a disciplinary course instead of a science teaching methods course was expected to make students aware of the centrality of disciplinary learning in PCK development and of the necessity to develop PCK in order to teach science at any level. The requirement of discovering and studying by themselves the topic they had to teach was intended to allow the student teachers to link between the learning and teaching processes.

Our research questions were:

What did the students feel they gained from *peer lecturing* concerning teacher training?

How did the students think that *peer lecturing* generated these gains?

Because the characteristics of *peer lecturing* fit well the requirements for PCK developing activities (Table 1), our hypotheses were that the activity should (a) strengthen students' awareness of the centrality of disciplinary learning in PCK development, (b) rise students' awareness of the need to develop PCK in science teaching, (c) help the students to assimilate inquiry-learning as a teaching strategy, (d) enhance students' sensitivity to their prior conceptions on the topic they teach, and (e) prompt the students to link between the learning and teaching processes.

In accordance with the constructivist conception of PCK which we presented here, we examined our research questions within the theoretical framework of the self-regulated learning model, which breaks down students' monitoring of their learning process into three dimensions: affective, cognitive, and regulative (Pintrich, 2004). Because the student teachers were still lacking theoretical literacy in science teaching, a more sophisticated framework for PCK analysis was not adapted. We chose to use the tools of qualitative research, because we expected to encounter unpredicted parameters. Data collection was mostly based on students' self-report, since students' perception of the activity in which they learn influences the success of the activity (Entwistle, 1991), and since, when the students are preservice teachers, it influences the ability of the students to assimilate the pedagogical principles of the activity and their readiness to use it in their future activity as teachers (Crawford, 2007).

2. Method

Additional details about the participants in the research, the activity, the interview procedure, and the way the data were analysed, are found in a previous report (Seroussi & Sharon, 2017).

2.1 Participants

The participants in the activity were first-year preservice teachers specializing in science teaching (at elementary or junior high school level, with no strict distinction between them at this stage) at a small teachers' college in northern Israel: 21 females and 2 males, 17 from Hebrew speaking and 6 from Arabic speaking high schools. These students learned a year-long introductory zoology course and in parallel, they participated, together with other non-science students, to a year-long general teaching method workshop (6 weekly hours), during which they began to train in microteaching sessions in the second semester, independently from our activity.

2.2 Format of the Activity

Peer lecturing took place after one semester of participative professor's lectures in zoology. During the first three weeks of the second semester, each student (or pair of students if they wished) was asked to choose a topic linked to one of the chapters remaining to be taught and to define a research question linked to this topic. Students' inquiries were done outside the course and they had to report their choice to the lecturer. Example of questions were "What are the causes and expression of albinism in animals?", "What is Jacobson organ in snakes and how does it function?". After receiving the permission to start, each student begun (outside the course) to search for academic information on her topic, and to build a ten-minute presentation for the class. One week before their lesson, the students had to publish a one-page summary of their lecture in the course's forum. This last assignment served as a scaffold which obliged the students to focus on a limited topic and to clearly formulate their findings. During the whole process, the students were free to ask the professor for help by e-mail or during talks before the lectures; did used this possibility without exageration, and the issues about which they mostly sought help were the choice of the lecture's topic, information sources and seeking strategies, the explanation of some complex scientific aspects, and sometimes the scientific format of the summary (particularly the order of the different topics).

2.3 Data Collection

Several days, after she gave her lecture (and not after the final examination), each student participated a 30-minute semi-structured interview with the first author. Before the interview, the student was instructed to tell about each part of the activity (information search, presentation building, lecture), what she did, what she liked in this part, what was difficult, and what she learned. 4 months after the examination, several short talks were made with some students. The interviews' and talks' scripts, along with students' summaries of the lectures, presentation files, written comments in the courses' forum, and final examination forms served as data for this report.

3. Results

In the interviews, half of students' speaking time focused on their own learning process (information search, definition of a research question, data understanding). The other half bore on teaching aspects and on students' evaluation of the activity. As previously reported (Seroussi & Sharon, 2017), the transcripts of the interviews underwent a content analysis according to the principle of the grounded theory methodology (Charmaz, 2006), and this process yielded 43 categories pertaining to learning (dealing with subject choice, information search and processing, conception of science) and 22 categories pertaining to learning to teach. The latter categories were clustered again according to the three dimensions of SRL and to the different aspects of PCK as summarized hereunder.

Students' reactions to the activity differed according to students' initial academic level, and therefore, in the results, we grouped the students into three groups accordingly in our analysis of *peer lecturing*: **"A** (9 students with grades over 85), **B** (10 students with grades between 70 and 84) and **C** (4 students with grades below 70). Students' talk showed that A students expressed both high competitiveness and high level of interest in the activity, B students rather displayed a willingness to do a good job and to enjoy the activity, and C students expressed interest in the activity but did not report as strong an effort as the others.

As will be seen, students' discourse matches the results reported by Britner and Finson (2005) in their study of an experimental inquiry activity for preservice teachers: for instance, an increased motivation to teach science, a readiness to use the activity as a model for future teaching, and a more sophisticated concern for future pupils' coping with inquiry.

3.1 Affective Gains in Teacher Training

Like every teaching exercise, *peer lecturing* was reported by all the students as fostering the development of their **self-concept as a teacher** and of their **feeling of self-efficacy** (Bandura, 1986), due to the success in managing the audience or in answering questions during or after the lecture.

Additional affective gains were related to the originality in the subjects of the lessons brought by the inquiry dimension of the activity:

> *"At the beginning I was afraid. But when I saw the [look of surprise on the] faces of the students, my self-confidence got a real boost!"* (Jasmine, C).

The possibility to choose the topic of one's lecture yielded an enhanced motivation for teaching in all the students, as Maria (B) explained:

> *"The most important thing is that the topic of your lecture interests you, because if not, you won't introduce it in an attractive way."*

According to the students, the inquiry aspect of the activity added in *peer lecturing* sources of motivation to teach which were not present in the lessons they gave in their general methods workshop:

> *"In regular microteaching, what interested the students in the audience were the pedagogical strategies of the lecturing student. The subject of the lecture - they knew it. Here, what was interesting them was the topic of the lesson itself, because it was unknown. It was exciting.* (Jasmine, C)

The "discovery" aspect of peer lecturing yielded **specific "orientations toward science teaching"** (Magnusson et al., 1999) in the preservice teachers. Although the academic requirements of the activity made most lectures structured according to a "didactic orientation", that is, focused on the transmission of scientific facts (Magnusson et al., 1999), the lectures were also the opportunity for the students to discover other orientations and specific motivations to learn and teach science (Seroussi & Sharon, 2017). 6 students from all academic levels (Amal (B) and Jasmine (C) on the blowfish, Abigail (A) and Deborah (B) on the chameleon, Hannah (A) and Merav (A) on the peacock) expressed in the interview teaching goals corresponding to a the "conceptual change orientation" (Magnusson et al., 1999), that is the willingness to correct peers' misconceptions on the topic of their lecture, and two A students reported the willingness to introduce ecological values (protection of bees or avoidance of pointless destruction of ants) as a leading thread in their lecture.

3.2 Regulative Gains in Teacher Training

It seemed that **the students used *peer lecturing* as a form of microteaching** (Grossman, 2005) with academic instead of school-level topics. Indeed, they spontaneously included in their lessons strategies they had learned in the general pedagogical methods course, they made special efforts for classroom management when lecturing, and they assessed their own performance and that of their peers on the basis of pedagogical requirements. Yet, the pedagogical aspects of the lessons were not as developed in *peer lecturing* as in regular microteaching, due to our decision not to cross the boundaries of the zoology course and due to the limited time given to students' lectures. The purposely high scientific level and information concentration of the lectures, as well as their limited length, left less room in the lectures for demonstrating pedagogical skills. One of the students who turned out three years later as an outstandingly skilled teacher but a less enthusiastic science learner (Randi, 2004) expressed her appreciation in these terms:

> *"The lectures were too much like a marathon, we concentrated on delivering as much information as possible, and this was at the expense of pedagogy.*" (Merav, A)

In this framework, the students did not display much creativity about the technical format of their lesson: all lessons were teacher-centred (some called for active participation of the audience in the introduction), only one student (Elyiah, B) produced his presentation with software which was not the same as the one used by the professor, and only another one (Ofrah, B) presented a self-edited movie instead.

Similarly, our willingness to dedicate most of the time in the course to disciplinary learning did not leave much time in class for pedagogical feedback and reflection.

> *"In zoology, whenever there was something wrong with the pedagogy, they [the peers] didn't mention it because it was not so important."* (Amal, B)

Yet all the students appreciated the opportunity given to them to **apply to science teaching the skills learned in general teaching methods courses**. Even the lowest achievers briefly described the strategies they included in their lesson,

> **"***We took the learners into consideration. We asked them if they had questions, if they understood… we shared with them."* (Amal, B),

while the most competitive students explained how they used their lecture as a deliberate display of teaching proficiency:

> *"We took the knowledge from all the general teaching methods courses and we crammed it into our ten-minute lecture! For instance, if I say creative learning, we brought feathers, because it is really creative to bring something from the animal itself, new technologies, we brought the film…"* (Merav, A).

The lecture was the place for the students to **experiment with co-teaching formats**. Cooperative teams were formed by half of the students, and these teams acted in different ways in front of the class. Some pairs spontaneously divided their lecture into two parts, each student teaching her part, but in other cases (Amal (B) and Jasmine (C), Abigail (A) and Deborah (B), Maria (B) and Amira (C)) each student introduced an alternating slide in the lecture, and this obliged both of them to be knowledgeable about the content of the entire presentation.

3.3 Cognitive and Meta-Cognitive Gains in Teacher Training

Concerning the link between PCK and SMK, *peer lecturing* seemed to display original advantages.

Peer lecturing seemed to influence **students' beliefs about the level of SMK needed to teach a scientific topic**. Indeed, all the students reported that in *peer lecturing*, compared to regular microteaching, the undiscussed proficiency of the professor and the literacy of the audience in the academic field of the lessons enhanced their awareness of the necessity for a high level of knowledge and enhanced the academic level of their lectures:

> "*In comparison to general microteaching, I have to come to the lecture twice as ready*." (Bathsheba, A)

This situation also enhanced students' awareness of the necessity for a critical assessment of educational sources.

> *"… what they put on this internet site was wrong: a picture with the colours of the chameleon one on the top of the other - this is wrong! So if you explain it to the students using the picture, she [the professor] will lower your grade, because the picture is wrong, because she will know it's wrong."* (Abigail, A)

Yet, some low-achieving students felt that along with the requirement for a high scientific level which it induced, the audience's literacy reduced its criticism about the formulation of basic knowledge:

> *"Here [contrary to microteaching sessions with non-science students], it is easy to manage the class and to explain, because they already have basic knowledge: if I get stuck with something, they will help me." (*Morgane, C)

For two pairs of (A) students, *peer lecturing* was an opportunity to teach non-certain knowledge, that is, scientific phenomena lacking a single explanation:

> "*We simply introduced the three approaches and explained them. And we explained why we thought that one of the approaches was better."* (Merav, A)

In an attempt to assess the link between the lectures' scientific level and their impact on student's learning, we tried to relate students' answers on the final examination and the scientific level of the lectures. Yet there was no correlation between the grades given to the students' lecture, and the number of students who chose to answer the question related to this particular lecture in the final examination (Figure 1). For instance, the topic chosen by the majority of students in the examination (the blowfish - 11 times) was taught in the lecture which received one of the lowest grades, whereas some of the best lectures were not chosen at all in the examination. This reminds us that the factors which influence knowledge retention include not only the lecture's academic quality, but also many additional features, like the attractive nature of the topic, how easy it is to learn it, or the motivation originating from the strength of the social bond with the lecturing person.

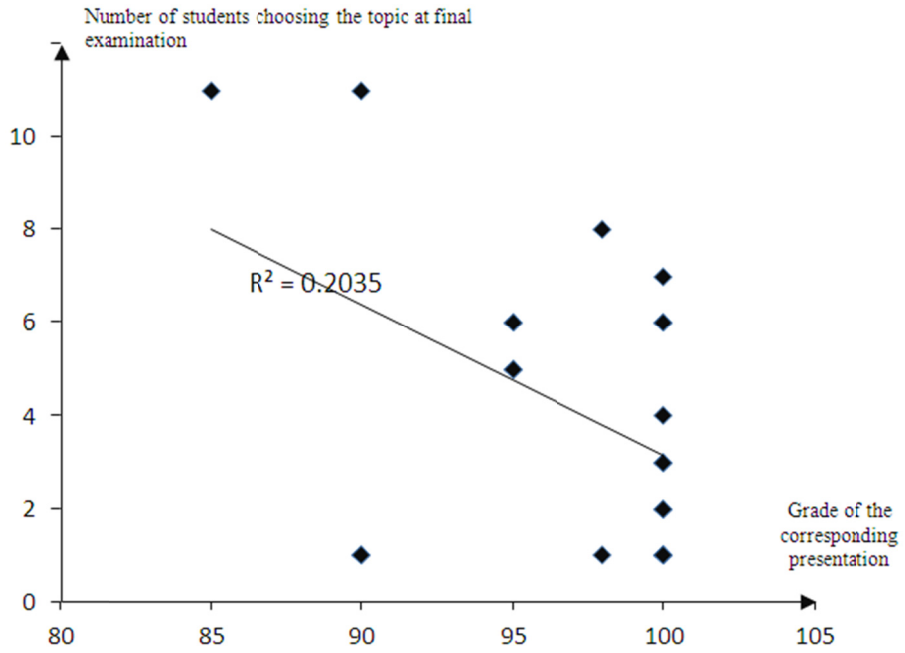

Figure 1. Number of students choosing to answer the essay question on a definite topic as a function of the scientific level of the presentation on this topic (as assessed by the grade received by the students who taught the topic in their presentation)

The preparation of the lectures appeared to be for all the students an opportunity to tackle **"knowledge and beliefs about instructional strategies for teaching science**" (Magnusson et al., 1999) and to develop a personal view in this field. In the interviews, the time devoted to reflection on teaching was as long as the time devoted to reflection on learning (Seroussi & Sharon, 2017). On a formal basis, only a small number of students explicitly acknowledged *peer lecturing* as an opportunity to **develop an original teaching style** in science. Many students declared:

"I taught the way I thought was better",

but were unable to describe what was special in their teaching style. Some declared:

"I taught as I learned in methods courses" (Amal, B),

but their lessons were not always different from those of other students. Some explained why in their opinion, such an activity could not foster new ways of teaching (Feiman-Nemser & Buchmann, 1985):

"I think that according to my level as a first-year student, I taught exactly like I am used to seeing people teach, the teachers who taught me, from the professors here. –Purposely or spontaneously? – Spontaneously, because I don't know anything else. As yet I don't know another way." (Naomi, A)

Yet, on a practical basis, it seems that the activity did induce an intensive reflection about ways of teaching, as can be seen, for instance, in the thorough justifications all students gave about the relative weights they gave to words and images in their presentations:

"See, I looked at a presentation, let's say like those of X and Y [professors in the college], and I understood that in science: say it less, show it more. But in practice, when you teach me new material, I do want to see it written. This is why I wrote down the main sentences in the presentation. –Contrary to what the lecturers do in the college? – Yes, they hardly write anything." (Abigail, A).

"When you use the white board, it is more efficient in giving a lesson, because it requires you to think more, to understand more, you are more active. But, you know, when everything is written in the presentation, it seems all right if you don't remember something. And this is definitely wrong." (Michal, B)

The "project-based learning" activity, which the students experienced as learners, was assessed by them as a teaching strategy. When asked, all the students declared that as teachers, they were willing to transfer the experiment to their pupils – although C students stated they would introduce simplifications in the activity. And

indeed, in their field-application classrooms, the following year, most A students did actually organize small literature inquiry activities ending with pupils' presentation of their results to the class (this happened both in classes where the mentor teachers used literature inquiry themselves as a teaching tool, and also in classes where they did not). This observation suggests that most student teachers internalized the principles of *peer lecturing* enough to transfer their knowledge to the situations where they were the instructor.

"Knowledge and beliefs about students' understanding of specific science topics" (Magnusson et al., 1999) appeared to develop in *peer lecturing*, due both to the discovery component and to the peer teaching component of *peer lecturing* (Seroussi & Sharon, 2017).

Many students explained how their **ability to teach for conceptual change** was supported by their acquaintance with their own difficulties when learning the topic they had to teach (discovery learning component) (Parker & Heywood, 2011) and with their peers' difficulty in zoology in general (peer teaching component).

> *"I was sure that if I didn't know that, then most of the class didn't know. […] We are all more or less at the same level, so I just looked at myself as a student, and so I could identify with them."* (Naomi, A)

> *"Everybody was thinking like kids, like, the chameleon changes its colour according to what it is sitting on. I thought like that too. […]. You have to search and to understand that, in fact, you also change your own conception."* (Deborah, B)

Two students, Avigail (A) and Deborah (B) even developed a thoughtful theory of misconceptions corresponding to the newest insights in the field.

The acquaintance with peers' learning in zoology also helped some **A students to address different types of learners** in their lecture:

> *"Here, since I know the level of the class, like, I know the students personally, it becomes something else."* (Rebecca, A)

But all C students explained that accounting for differences was too heavy a task for them, given their other difficulties, and B students reported they did not address students' differences by choice:

> "*You cannot adapt to everyone, because in the final analysis, the lecture is for the whole class*." (Elijah, B)

Beyond the link between learning and teaching, which was induced *de facto* by the format of the activity–as revealed by the findings above–students' comments show that they themselves saw **the processes of learning and teaching as intrinsically related**. Their description of their work shows how they were involved in the co-construction of "knowledge for learning" and "subject-matter knowledge for teaching" (Shulman, 1986), with one activity sustaining the other: learning in order to understand sustained their ability to teach, and learning in order to teach sustained their understanding of the subject (see also Seroussi & Sharon, 2017).

The link between learning and teaching also explicitly appeared on a reflective level, when the students expressed that they see self-concept as a learner and self-concept as a teacher as one single concept. On the one hand, self-concept as a learner was described as involving the transfer of information as a part of the mastery of the subject they learned**:**

> "*I really felt that I was a real science student. – Why? – Because I was researching by myself, I brought what looked right for me, I brought something that I understood, and I brought that to my friends."* (Tasnin, B)

On the other hand, self-concept as a teacher was described as including information searching and understanding:

> *"Yes, this experience involved us in the course, it helped us to understand, to search in academic papers, it helped. It's not just science that I have to know, I have to know beyond it, I am also a teacher, I am first and foremost a teacher, this is education to science. So it helped me a lot, to find new information, and not only the material that was supposed to be in the course." (*Amal, B).

In addition to students' personal endeavour to prepare their lesson, the human environment in *peer lecturing* seemed to supply a lot of data to **students' reflection about teaching**. While only some students (overall 3 spontaneous reports) acknowledged that listening to the lectures of peers brought them insights under the form of positive or negative teaching examples, all the students expressed in the interviews a very intense analysis of their professor's pedagogical choices in building the activity. The activity's requirements were discussed very liberally and critically. On the one hand, the students acknowledged that the specific requirements of writing a summary and limiting the lecture to ten minutes helped them, from a pedagogical viewpoint, structure their

lesson and focus on a limited topic. On the other hand, the requirement of publishing a summary before the lecture, or the use of peer assessment in the format adopted in the activity) raised contradicting opinions, which the students devoted a part of the interview to explaining:

> *"She [the professor] also asked us to send to the forum before the lesson a summary of what we were going to teach. I think it is inappropriate, because attention should be paid here to the surprise effect." (Abigail, A)*
>
> *"But what she [the professor] did was good! The summary allows the teaching student to teach quicker. Instead of starting to explain what the core concepts are, the students in the audience already read, and they already had questions about what they wanted to know…"* (Rachel, A).

In some cases, lack of agreement with the activity's requirement yielded an additional pedagogical effort, which included additional learning (see Seroussi & Sharon, 2017).

The student teachers' better capacity to analyse the organization of the activity from their point of view as participants than to analyse their own learning in zoology, confirms the finding of Chamoso et al. (2012) about student teachers' reflection when learning subject matter knowledge in an academic course.

4. Discussion

The analysis of student teachers' reactions to *peer lecturing* supports our hypotheses about the benefits of *peer lecturing* in teacher training, but depending on the type of student concerned (A, B, or C).

The importance of disciplinary knowledge as a prerequisite to teaching was explicitly stressed by all the students participating to the activity. *Peer lecturing* had the advantage of giving students' lessons an assessor who was a specialist in the subject matter, and this seemed to generate a more ambitious atmosphere regarding the scientific level of the lessons' background and format. The question remains whether the students will stick to this attitude once they start teaching primary school.

Students' conception about the importance of PCK when teaching scientific contents was not explicitly stated (it seems logical that at this stage of their training, the students did not have the language to do that), but it was salient in students' descriptions and justifications of their teaching strategies. As shown, students' reports spontaneously expressed 3 out of 5 components of PCK in the model of Magnuson et al. (1999) – the two remaining components being irrelevant to the activity.

The awareness of the existence of prior conceptions in science was acknowledged by some students at different levels, but a thorough reflection about the right management of prior conceptions in teaching was proposed only by two high-achieving students. The following year, in order to improve this aspect of the activity, the first author added in a later run of *peer lecturing* the requirement to address in the lecture one misconception about the topic of the lecture, accompanied by explicit instruction on the subject of prior conceptions. Most students gave an appropriate treatment to the misconception they chose to include in their lesson. Two years later, in application school field-work, several A students spontaneously recalled the misconceptions part of the activity as a basis for a lesson in application school.

Students' formulation of the intrinsic proximity between the teaching and learning processes matches current conceptions about this matter (Baird, Fensham, Gunston, & White, 1991; Vermunt & Verloop, 1999). Indeed, because learning and teaching are based on similar cognitive steps, one of the processes automatically involves the other: deep learning implies knowledge organization and mastery, which is required for teaching, and concurrently, efficient teaching requires deep consciousness of the difficulties involved in learning the topic of the lesson.

Various forms of reflective and analytic thinking about learning and teaching were displayed by the students in their analysis of the activity. In our previous paper on *peer lecturing* (Seroussi & Sharon, 2017, Table 2), we showed how the environment in this activity allowed the students to experience almost concurrently a variety of roles with respect to the teaching processes (learning in a regular lecture, learning by inquiry, teaching one's teammate, and, finally, teaching the class), and to adopt a variety of points of view in reflecting about teaching (as individual learners trying to self-regulate, as learners analysing professor's teaching practice, as teachers planning their own lesson, as participative observers in peers' lectures). The present report suggests that this multiplicity of situations helped the students to reflect about teaching as well, as it helped them to reflect about learning. Indeed, in general, reflection about teaching is based mainly on the comparison between the actual teaching situation and similar reference situations (Sparks-Langer & Colton Bernstein, 1991). For instance, as reported earlier in this paper, when justifying the balance between words and images in her presentation, Abigail focused on her own needs as a learner and took both the position of the professor and that of the student, and

Michal called upon her own needs as a teacher and compared her own teaching experience to the performance of a peer in teaching. In regular microteaching, the students have to recall the reference situations from their memories of past situations. In *peer lecturing,* the advantage is that the students experience not only the actions of preparing and giving a lesson, but also most of the reference situations (Parker & Heywood, 2013). The situational proximity of the reference situations seems to improve their understanding (the difficulty to understand a lecture is felt more deeply when the student in difficulty is a friend rather than a distant memory). The temporal proximity of these situations seems to improve the retention of the reference experience and therefore the depth and accuracy of the analysis (it is easier to remember the details of a situation which has occurred in the recent past). Such a situation ensures more chances for reflection on teaching to be conducted, and with more depth.

Among the different analyses which the students conducted in the framework of *peer lecturing*, the critical assessment of the modalities of the activity itself and of the professor's behaviour as a coordinator in this activity should be especially noted. In *peer lecturing*, the habit of students to analyse their own teachers' intentions (Elen & Lowyck, 1998) became a source of inspiration for them as future teachers. This is a possibility which is original to teacher training. Indeed, while there are other professions in which the professionals can check the relevancy of their knowledge on themselves (like psychologist or doctor), the teaching profession is the only profession whose object is a situation analogous to the training situation itself. In consequence, for teacher trainees, the training situation is like a picture including a *mise en abyme* of their personal situation as a teacher teaching her own audience, in a larger picture which shows the general training situation where the professor instructs all the teachers. This situation enables the students to analyse concurrently two teaching processes (own teaching and professor's teaching), under different points of view (learner and teacher), and to gain additional insights (Chamoso et al., 2012). Additionally, in our case, since in *peer lecturing* the teaching role of the students does not correspond to a very constructivist view of teaching (the lectures are even plain "transmission teaching"), the analysis of the professor's pedagogy was an opportunity for the students to relate to the issue of "teaching inquiry" and to prepare themselves to lead such activities with their pupils in the future.

5. Conclusion

In previous work (Seroussi & Sharon, 2017), we showed how in *peer lecturing*, the addition of the *peer teaching* component to an inquiry activity, brings several original benefits regarding students' motivation and students' cognitive activity as learners, because the social context in which it occurs induced new motivational goals and an additional opportunity to construct knowledge. The current analysis shows that from the point of view of teacher training, the addition of a common learning situation and of disciplinary inquiry-learning in *peer lecturing* creates two valuable highlights for student teachers' behaviour and reflection: an emphasis on SMK, and the possibility of multiple perspectives for reflecting on learning and teaching. The field of teacher training is constantly searching for instructional frameworks encouraging preservice teachers' reflection about teaching (Richert, 1992). It seems that *peer lecturing* could be considered one of them.

Peer lecturing was used here as an introductory activity in science teaching for first-year student teachers. The activity was intended for students learning in a concurrent pattern (that is, receiving in parallel scientific and educational instruction), but it may be adapted to consecutive pattern curricula. In this activity, the interviews served as an opportunity for the students to express their conceptions and refine their thoughts in science teaching, but no institutional framework was attributed to the expression and the development of students' reflection about learning and teaching and to the ordered assimilation of the skills acquired in the activity in order to transfer them to other contexts. On the basis of the present results, we are now testing whether the addition of additional features to *peer lecturing* could turn it into a training tool dealing with different additional teacher education.

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Developing Learning Model Based on Local Culture and Instrument for Mathematical Higher Order Thinking Ability

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Abstract

This research aims to develop a student-centered learning model based on local culture and instrument of mathematical higher order thinking of junior high school students in the frame of the 2013-Curriculum in North Sumatra, Indonesia. The subjects of the research are seventh graders which are taken proportionally random consisted of three public junior high schools with 86 students and two private schools with 40 students. As a Developmental Research, the work is done within three stages. The results obtained in the second stage, both learning tools (books of students, teachers, and students' activities sheet) and research instruments are valid with minor revisions, and the results of the trial showed that the reliability scores of the tests comprising of Comparison (MAT-1), Social Arithmetic (MAT-2), Triangle (MAT-3), Quadrilateral (MAT-4), and Transformation (MAT-5) respectively 0.835, 0.588, 0.438, 0.833, and 0.908. The findings showed that the student-centered learning based on local culture model and the instrument for higher order mathematical thinking ability are valid and effective to use in teaching mathematics for junior high school.

Keywords: students-centered learning model, local culture, higher order mathematical thinking

1. Introduction

Higher order mathematical thinking ability is part of a major vision of mathematics education. The vision stated that mathematics education is devoted to understand the concepts and ideas of mathematics which are then applied in solving routine and non-routine problems through reasoning, communicating, and developing connections within mathematics and beyond. To the extent, students are expected to be creative, have the habit of working hardly and self-contained, be honest, be discipline, have good social attitudes, have self-confidence, and have sense of beauty to the regularity of the nature of mathematics, as well as develop an attitude of open and objective mind indispensable in facing future ever changed.

The vision above is described in mathematical learning objectives proclaimed by the KTSP-Curriculum (2006) and 2013-Curriculum, and in accordance with the recommendation of NCTM (2000), which aims to develop: 1. The ability to solve mathematical problems emerged from real life; 2. The ability to use mathematics as a tool of communication; 3. The ability to relate the idea within mathematics; 4. The ability to reason mathematically in any circumstances, such as critical thinking, logical, and systematic; be objective, honest and disciplined in looking at and solving problems.

Recent studies revealed that high level mathematical thinking skills of junior high school students are still far from adequate. Saragih and Habeahan (2014) showed that student's problem solving ability is low. Some of them were not able to mention what information is given and either it is sufficing or not to solve the problem. Others were not able proposing a plane. The others were neither capable execute strategy chosen nor look-back to their work. Elsewhere, Yuliani and Saragih (2015) reported that private school eight graders students in Medan showed lackness of mathematics critical thinking, almost all of them committed falsity while synthesizing. They failed analyzing the problem, providing incomplete work, and drawing conclusions.

Likewise, another result Saragih and Yusra (2016) found that MTs students of grade VII have low math communication skills. Most of them only answered questions directly, unfocusedly and irreasonably. When asked to explain they cannot express how to get the answers. They only see the existing number and directly add it up.

The low ability in higher order mathematical thinking indicates that the learning process teachers' conduct has not been able to foster and facilitate students to achieve the vision and goals of mathematics education. Consequently, the learning process needs reform, i.e. the learning paradigm should shift from "teacher-centered" to "student-centered learning".

The changes in the 2013-Curriculum, which is currently being put into effect is a consequence of the reform of learning processes. In fact, from the in-service teachers training (PLPG) which was held from 2007 to 2015 as well as several studies (Saragih 2007, 2009, 2010, 2013), and the last research of Saragih (2015), almost entirely of the teachers conduct learning using teacher-centered paradigm. They begin lecturer by giving explanations or examples on the materials to be covered without associating environmental conditions (real-world contexts) then continue by giving assignments that are similar to the example problems and end with giving homework (tasks). Interaction among students and students to teacher rarely exists. Teacher dominates the teaching and learning process which implies less chance to students to develop themselves through learning that designed to invent concepts. This shows that the teachers do not have knowledge on concept of learning according to the new paradigm that is student-centered.

Some learning approaches that have characteristics consistent with student-centered, among others are problem-based, contextual, realistic, open-ended, problem solving, and so on which should be implemented by mathematics teacher in the classroom. For that purpose, it is truly important to create a learning model together with its devices which enable and foster students improve their imagination and creation. This is in accordance to Cooney (Sumarno, 2005) and Saragih (2015) which encourage initiating classrooms by giving students challenging problem which requires cognitive and metacoginitive strategies, study groups and interactive learning. It requires students to examine, explore, communicate, make conjecture, submit justification, and give argument. The present of contextual non-routine and open problems is expected giving context to students, foster habits to learning the local culture so they will be close and fun to the students. Learning to solve problems based on local culture will create new atmosphere which is exciting and fun and in turn motivate students to learning.

The cultural context can be used as a tool for learning to motivate students to apply mathematical concepts, working in groups, and perceived linkages between the various subjects. This happen because mathematics is a form of culture that is integrated in all aspects of human life (Bishop in Tandililing, 2013). The including mathematics with the culture of mathematics was also stated by Pinxten (Tandililing, 2013) which states that the essence of mathematics is symbolically technology that grows on the skill or activity is cultural environment. Thus it is possible in the presence of the local cultural context on mathematics learning, the meaningful learning process will occur as expected. This is supported by Yusra and Saragih (2016) which reported the existence of positive changes in students' mathematical communication ability, the answering process, and motivation in implementing joyful learning based on Malay culture.

A number of preliminary studies (Saragih, 2007, 2009, 2010, 2013, 2015; Herman, 2006; Suryadi, 2005; Haji, 2005) which implemented student-centered learning with different approaches reported an increased among others in critical think critically, logical thinking, communication skills, reasoning, understanding, mathematics connection, and positive attitude toward mathematics of middle school students. Now arises an interesting and important question to seek resolution, that is how do to develop a student-centered learning model based on local culture and instrument of higher order mathematical thinking? Relating to the problems proposed above, this research aims to develop a student-centered learning model based on local culture and instrument to measure higher order mathematical thinking of junior high school students within 2013-Curriculum in North Sumatera.

2. Method

2.1 Population and Research Sampling

The research population was all grade VII students in public and private junior high school in North Sumatra. Samples were selected proportionally-random and chosen three public schools and each is represented by one classroom. All of them amount 86. Two other schools are private and represented by two classrooms of amount 40. Therefore, the students engaged in the research are 126.

2.2 Data Collection and Analysis

The data were obtained from varies techniques collection, such as test, questionnaire and observation sheet. The test is used to analyze and validate the level mastery of higher order mathematical thinking. The questionnaire used to determine student response related to the learning processes and mathematical concepts. While the observation sheet used to determine the degree of implementation of the strategy learning model used in the classroom, which in this case relates to the activities of teachers and students in learning. The test has been

validated by an education expert prior to use outside the classroom first tested the samples, and then analyzed to obtain validity and reliability. Product-moment correlation formula is used to calculate the validity of the test (Sugiyono, 2013). While for counting the readability coefficient, the Alpha formulation is taken (Arikunto, 2009).

2.3 The Research Approach

This is a research & developmental study which orient to product development. Van den Akker (1999) called it formative research that the activities carried out repeatedly (cyclic) and designed and tested a mathematical model of learning material products (Figure 1).

The second phase of research activity is part of three phases of the study. These three stages are described as follows:

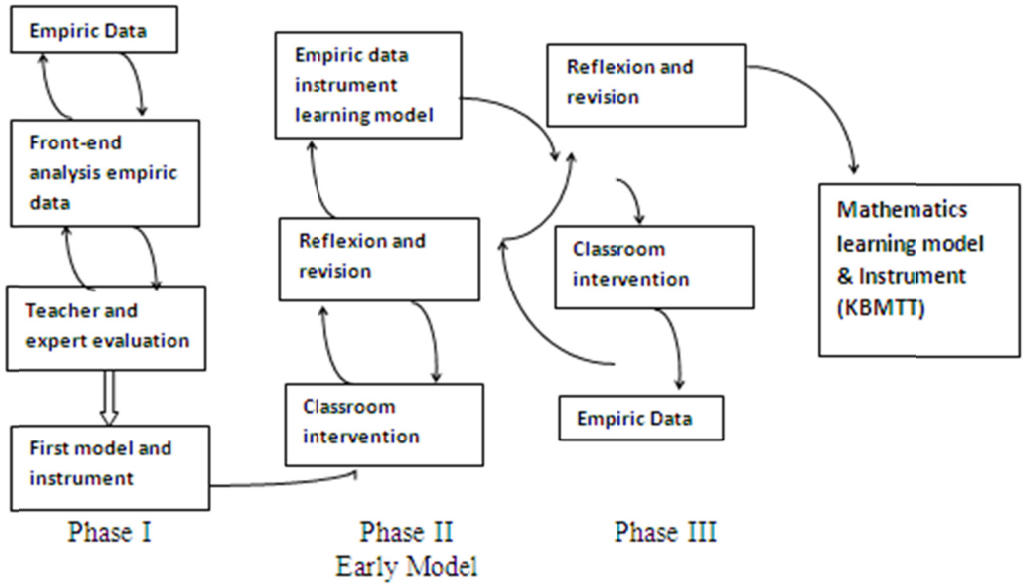


Figure 1. Phases and Activities of Developmental Research

Phase II of this study is referred to *Stage Analysis of Formative* which aims to develop, analyze, tested, evaluate, and fix the learning model and to validate the instruments of higher order mathematical thinking ability. The model will be tested on sample schools to see its quality (effectiveness and efficiency). The research activities focused on two aspects: (1) analysis the learning process conducted by teachers using the learning model developed at Phase I; (2) analysis and validate the higher order thinking ability instrument. Phase II produces the learning model fix and the valid higher order mathematical thinking ability instrument.

3. Results and Discussion

Both learning model and research instruments declared valid by the validator. From the field tests, it is obtained that the validity of higer order mathematical thinking ability is significant at 0.05 and 0.01 level. While the calculation of reliability tests of the five teaching material consisting of Comparison (MAT-1), Arithmetic Social (MAT-2), Triangle (MAT-3), Quadrilateral (MAT-4), and Transformation (MAT-5) respectively scored 0.835; 0.588; 0.438; 0.833; 0.908. The five materials are presented based on local culture as well as the instrument. Table 1 below shows summary of the results of the instrument test for the five items.

Table 1. The validity of questions item test high level mathematics thinking

Correlations						
		MAT_1	MAT_2	MAT_3	MAT_4	MAT_5
ITEM_1	Pearson Correlation	.775**	.666**	.666**	.700**	.737**
	Sig. (2-tailed)	.000	.001	.001	.000	.000
	N	30	20	20	26	30

ITEM_2	Pearson Correlation	.707**	.691**	.691**	.786**	.839**
	Sig. (2-tailed)	.000	.001	.001	.000	.000
	N	30	20	20	26	30
ITEM_3	Pearson Correlation	.637**	.588**	.588**	.860**	.739**
	Sig. (2-tailed)	.000	.006	.006	.000	.000
	N	30	20	20	26	30
ITEM_4	Pearson Correlation	.757**	.526*	.526*	.789**	.839**
	Sig. (2-tailed)	.000	.017	.017	.000	.000
	N	30	20	20	26	30
ITEM_5	Pearson Correlation	.703**	.455*	.455*	.707**	.737**
	Sig. (2-tailed)	.000	.044	.044	.000	.000
	N	30	20	20	26	30
ITEM_6	Pearson Correlation	.686**	.484*		.560**	.839**
	Sig. (2-tailed)	.000	.031		.003	.000
	N	30	20		26	30
ITEM_7	Pearson Correlation	.730**	.469*		.632**	.739**
	Sig. (2-tailed)	.000	.037		.001	.000
	N	30	20		26	30
Cronbach's Alpha Reliability Statistics (R)		0.835	0.588	0.438	0.833	0.908

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

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

From the aspect of validity, it is obtained that the entire tests designed fulfilled valid criteria with a high level significance. It indicates that the test measure properly what should be measured in accordance with the material taught. Likewise, the calculation results with high reliability, which means that the test will produce the same results (consistent) when performed repeatedly at different times. Thus the test items are eligible to use. The results of this study support the research of Saragih and Napitupulu (2015) previously and in accordance to Arikunto (2013).

One of the test items is as follow.

To get the attention of the visitors, a shop gives discount on one of the traditional music tools *Batak Angkola Gordang Sambilan*. See the Figure 2 below.

Figure 2. Gordang Sambilan

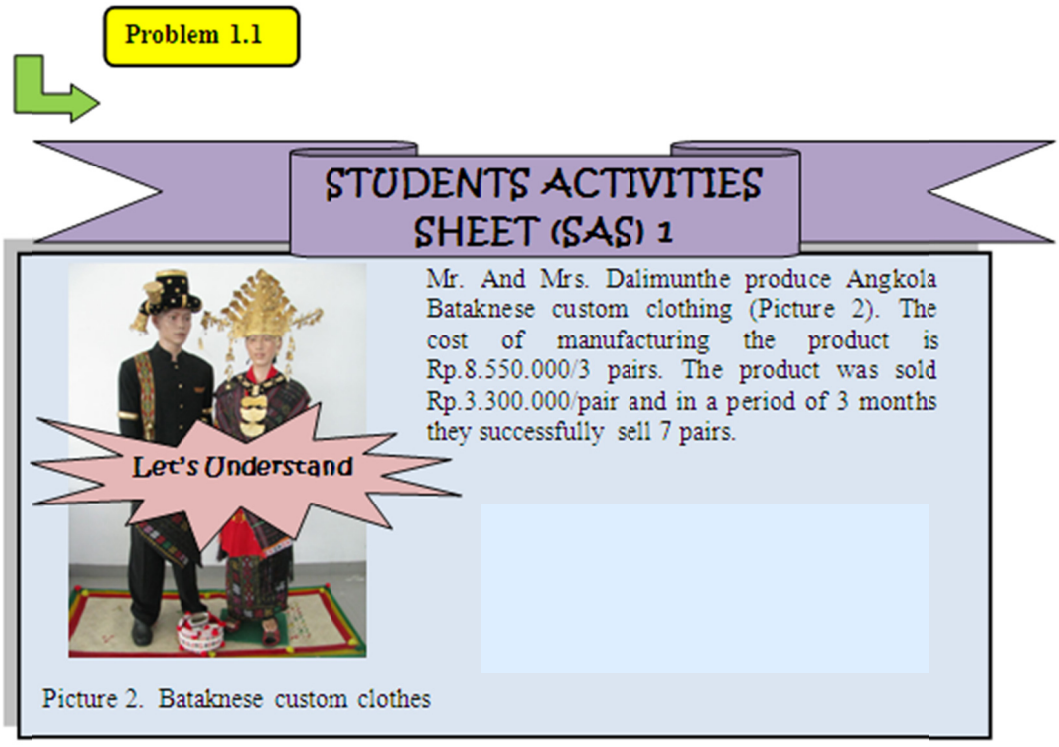
a. Based on the picture, explain the meaning of Price: 8 Million Rupiahs and Discount 20%.

b. if Mr. Andi want to buy a set of the *Gordang Sambilan*, make a mathematical model to calculate the amount of the discount. Then compute the price of the music tool after discount.

Most of the students have been able describing the idea or the situation from a picture, able making a mathematical model from the problem given. This showed the existence of positive changes on students' higher order mathematical thinking. Based on observation sheet, result of trial on learning model revealed the enhancement of students' activities. It was seen that they felt freely posing many ideas and it was contributed by

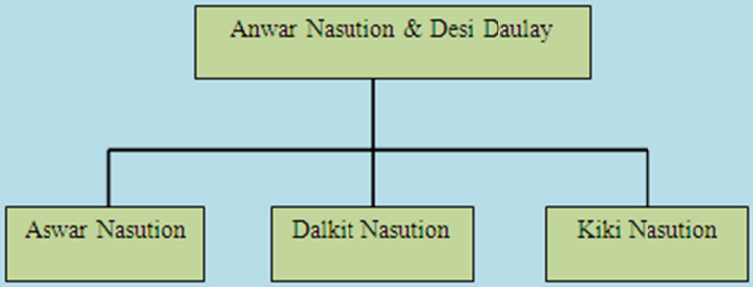
their understanding on the problems based on local culture given. Similarly based on anquette, they felt enjoy and motivated by the learning process. They did not feel anymore learning mathematics as usual by means of full of pressure and boring with the numbers they faced without any relationship to their daily life.

Particularly, relating to Students' Activities Sheet, it existed some revision among others on social arithmetic and comparison materials. The revision especially on pictures, sentences, design, and context of the local culture used is family relationship in the comparison concept and cultural custom in the trading concept. The engagement of family relationship and the cultural custom in learning process is intended to make interesting and meaningful learning would take place, since they have had knowledge on both. Part of the sheet is presented below.



Problem 1.2

Consider the following Family Pedigreen below



Mr and Mrs. Nasution had two sons, Aswar and Dalkit, and a daughter, Kiki. His first son married to Diana Lubis and has two sons. The second son married to Rina Hasibuan and has two daughters. Their daughter Kiki married to Kemal Daulay and has three sons.

From the above information, determine:

a. The total number of the family with surname Nasution. Explain your answer.

Answer:

b. The number of the family of Daulay's Surname. Explain your answer!

Answer:

c. Comparison of the amount of the Nasution's surname and Daulay's Surname?

Answer:

d. Comparison of the amount of man and woman of Nasution's surname.

Answer:

Based on Problem 1.1 and 1.2

a. Explain the meaning of comparison?

_____

_____

_____

b. Explain the meaning ratio?

_____

_____

_____

Learning devices, especially LAS is very important and vital in learning process. For LAS contains concepts or material that will be taught should be able be digested well by students individually or in groups. Changes in the context of the problem designed in LAS aim to make it easier for students to understand the concepts being studied, and in accordance with the focus of this study, the local cultural context with the local cultural environment in the learning process is expected such that meaningful learning takes place. This is in accordance to Trianto (2011) and Saragih (2015) which states that the process of meaningful learning can occur if concepts that will be studied is associated with other conditions. Opinions not much different proposed by Davis (1996) that in the process of learning new information must be associated with past experiences through a logical framework that transform, organize, and interpret experiences and knowledge built in the mind through the process of assimilation and accommodation. The process of assimilation or accommodation is not separated from the significance of the learning process

The presence of the local cultural context in mathematics learning should be on the agenda for a mathematics teacher. This is in line with Bishop (Tandililing, 2013) which says that mathematics is a form of culture that integrates all aspects of people's lives wherever they may be. The connection of mathematics with culture was also stated by Pinxten (Tandililing, 2013). He states that the essence of mathematics is symbolic technology that grows on the skill or activity which is cultural. Thus the presence of local cultural context in mathematics learning endorses meaningful learning process occurs as expected.

The development of learning model based on local culture mentioned above supported the previous results (Yusra & Saragaih, 2016). The writers developed joyful learning model based on Malay culture. Similar results were reported by Mahrani and Saragi (2016) and Hutagalung (2016). The first researchers developed problem-based learning with problems designed based on Aceh culture, while the second developed guided-discovery learning based on Batak Toba culture.

When viewed from the aspect of learning, the overall study discussed above used student-centered learning approach with local culture-based. It indicates that the active role of students which is claimed as an obstacle has been developed. Similarly, an environmental factor such as local cultural context is able to provide a positive impact on the development of students. As it was explained previously that the student-centered learning based on local culture endorses learning process becomes meaningful.

According Saragih (2009, 2010, 2015), the views of student-centered learning and meaningful learning is very close to the core of constructivism. This was confirmed by Suparno (1997), that the principles constructivism is, (a) the knowledge built by students actively, (b) focused in learning process lies in part of students, (c) to teach is to help students to learn, (d) the learning is more emphasized on the process not the end result, (e) teacher is a facilitator.

Teacher as facilitator demands the role of teacher is no longer as source of information, but rather provide learning resources such as preparing teaching materials (SAS), media, visual aids, and managing classroom either students learn individually or in groups. Certainly it should be designed before the learning process starts. As previously explained, preparing teaching materials (SAS) need to pay attention to students' everyday environment or culture. It should encourage students more actively involved individually or in groups in the learning process, especially in observing, investigating, drawing conclusions from the given data, or create hypotheses. This enable students' creativity, skills and abilities develop. Mathematical concepts understanding achieved through a learning process involving the daily or local culture of students believed learning to be more meaningful.

While in classroom management students work in groups are needed such that they interact positively each other in constructing mathematical concepts. This is in line with Vygotsky (Suharta, 2004; Suparno 1997), that knowledge construction which regards social environment called social constructivism can be formed individually and socially, so that the study groups can be developed. According to Von Glasersfeld (Suparno, 1997), the study group should reveal how he sees the problem and what he should do to overcome it, this means that students have to reflect on what they think.

There are two important concepts in the theory of Vygotsky (Slavin, 1997; Suharta, 2004), namely *Zone of Proximal Development and Scaffolding*. According Zulfikri (2008) *Zone of Proximal Development* is the development gap between actual and potential development, where between whether a child can do anything without the help of an adult and whether a child can do with the direction of an adult or collaboration with peers. Meanwhile, according Prayudi 2008) scaffolding is to give a child a number of great assistance during the early stages of learning and then reduce the effort and provide the opportunity for the child to take over increasing responsibility as soon as he be able to do himself. Therefore, based on the underlying concept, it is reasonable to

expect an improvement in higher order mathematical thinking skills of junior high school students who taught using student-centered learning model which based on local culture.

4. Conclusion

Based on the results of the study, it is concluded that:

1) Results of the trial on higher order mathematical thinking test instrument which consists of five teaching materials namely Comparison (MAT-1), Social Arithmetic (MAT-2), Triangle (MAT-3), Quadrilateral (MAT-4), and transformation (MAT-5) showed each having reliability value respectively 0.835 ; 0.588 ; 0.438 ; 0.833 ; 0.908 with significant validity at the level of 0.05 and 0.01.
2) The trial of student-centered learning model based on local culture showed that the model is effective to use in the teaching and learning mathematics for junior high school students.

5. Suggestion

The study suggests:

1) To mathematics teacher, to improving accuracy, consistency, as well as the effectiveness of learning and the students' answers to the problems of mathematical thinking skills, especially higher order mathematical thinking, teachers should first conduct trials on the tests and the learning devices before using them.
2) The mathematics teacher is expected to implement student-centered learning model based on local culture as an alternative model in the teaching and learning mathematics in junior high school. Therefore, it is suggested that schools develop the model as an effective one to other topics in mathematics or beyond.
3) Principals and schools are expected to be open and receptive to effective learning model innovations one of which is a student-centered learning model based on local culture.

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The Application of Problem-Based Learning Strategy to Increase High Order Thinking Skills of Senior Vocational School Students

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Abstract

This research is to apply and develop a strategy of problem-based learning to increase the ability of higher order thinking skills of senior vocational schools students. The research was done due to a fact that the quality of outputs of the senior vocational schools has not met the competency needed by the stakeholders in the field, that has made the outputs difficult to get jobs, or fail to run a private business of their own. This research is a quasi experiment applying *Nonequivalent Control Group Design,* done at X TKR 1 class of 38 students and X TKR 2 class of 38 students of Senior Vocational School II, Kupang, NTT Province, Indonesia. The normality and homogeneity of tests were done to obtain the test of analysis requirement. T-test was done to analyze the data obtained. The results show that: (1) the use of problem-based learning strategy is superior to the conventional study; (2) the application of problem-based learning strategies capable of improving high order thinking skills of students, which is implemented in problem solving skills, teamwork, and self-confidence better. (3) in the future, the high order thinking skills will be very important in winning the job competition, find solutions to problems in the workplace and establish good cooperation with others, so it will support the success of their careers in the future.

Keywords: problem-based learning strategy, high order thinking skills

1. Introduction

In a learning process, it is expected that a learner is able to increase his cognitive, affective, and skill competences to prepare himself to be able to run his future life in the society. However, it is a fact that the quality of learning result does not meet yet the competence needed, particularly the outputs of Senior Vocational School II . The lowness of the quality is also acknowledged by Semiawan (2000), where learning emphasizes more on describing facts, knowledge and laws, and on memorization, not on relating emipirical experiences in the real life. Then, Zamroni (2000) and Sumarna (2004) contend that students' weakness in applying knowledge is caused by a tendency that the learning in the classroom does not relate the learning content with the daily life. Further, Waras (2003) has proved that output of senior high school outputs are more accepted by the stakeholders compared with those of senior vocational schools. One reason is that the senior vocational school outputs are less able to apply high order thinking skills compared with those of senior high schools. The same fact is also shown by Nuh (2011) that the work productivity of senior vocational school outputs are still low. The expectation, that senior vocational school outputs are new generations of private businessmen to open new job fields, which is also the main aim of the education in senior vocational schools, has not met yet. To increase the quality of vocational school outputs, adding one more year for practice in Industries or in Politechniques is needed to be well prepared before they come to the fieldwork.

The insufficiency capability of the senior vocational school outputs needs learning process reorientation. In this case, the perspective of student-centered not teacher-centered learning must be highlighted and implemented in the teaching proces. The students are given more opportunity to perform activities covering minds-on activities or hand-on activities. So, the strategy applied in learning engineering must be the one that creates comprehensive learning system, motivates inisiative and responsibility, develops investigation habit for rich and meaningful information or knowledge, and shows dynamic activities in high order thinking process, which is a quality indicator in the problem-based learning strategy (Owens & Smith, 2000).

So, this research sets forwards and concentrates on how problem-based learning strategy is implemented to

increase high order thinking skills of the senior vocational school students that leads to increase work competition in the field in the future. This is based on the opinion that, the strategy is capable to overcome learning problem that causes low quality of senior vocational school outputs.The strategy is an active progressive learning approach and student-centered. It is based on real problematic world for the learning process to develop the students' own knowledge, the inquiry, and high order thinking skills.

2. Materials

2.1 Problem-Based Learning Strategy

In the problem-based learning strategy, the students are involved in a sequence of investigation activities to solve problems by integrating skills and concepts of content of the teaching materials. This is going with the idea of Arends (2008) stating that the problem-based learning places the students in position of solving authentic problems in order to order or arrange the students' own knowledge, develop inquiry and high order thinking skills, and develop self-confidence.

Then, Silver et al. (2004) says that problem-based learning is an active, progressive, and student-centered learning approach, where unstructured problems (from the real world or simulated) are used a initial start of learning. Further, Kelly and Kelam (2009) state that in problem-based learning that is related with real world can increase the students' high order thinking skills towards various problems faced, in order to make the students easy to adapt with future work. The application of problem-based learning can increase the senior vocational school students' high order thinking skills. Further the problem-based learning strategy in this research is applied by adapting with the syntax of Arends (2008)

2.2 High Order Thinking Skills

The high order thinking skills is a thinking activity involving the high hierarchy cognitive level of Bloom Taxonoy. Hierarchically, Bloom taxonomy consists of six levels: recall, understand learned facts, apply what has been learned to new situations, analysis ("take apart" information to examine different parts), synthesis (create or invent something; bring together more than one idea), and evaluation (consider evidence to support conclusions).

Further, Anderson and Krathwohl (2001) revise the Bloom taxonomy as the following: remembering, understanding, applying, analyzing, evaluating, and creating. The revision is found easier for many scientists to understand and accept it to be referred in learning theory development. This research for example uses taxonomy of Bloom as the main theoretical reference. In its development, remembering, understanding, applying are categorized as low order thinking skills. So, the high order thinking skills is a result of cognitive learning at the level of analysis learning result, evaluation, and creating.

3. Method

3.1 Research Design

This research is a quasi experiment applying *Nonequivalent Control Group Design"* of Tuckman (1999). It was done in the X TKR 1 class of 40 students and X TKR 2 class of 40 students at the Senior Vocational School 2 (SMK N 2) Kupang, in the academic year of 2015/2016. So, the total number of research subject is 80. However, after ten learning meetings, four students failed to join on because of two reasons: 1) failing to follow all learning activities because of falling sick, and 2) failing to join posttest.

Table 1. The distribution of research subject based on the learning strategy

Learning strategy	Frequency	Percentage (%)
Problem-based learning	38	50.0
Conventional learning	38	50.0
Total	76	100

The treatment applied in the research is a problem-based learning and conventional learning. A lottery technique was done to determine a experiment class (problem-based learning treatment) and control class (conventional learning). The treatment for the experiment class is based on the learning of set of equipments. The implementation of research covered: a) pretest for both, experiment and control classes; b) research process, where experiment group was treated with problem-based learning while control group with conventional learning; c) after eight meetings, a posttest was given to both groups, to get data about high order thinking skills.

3.2 Research Instrument

Research instrument is designed according to the learning topics in syllabus of Motor-Cycle subject, based on which, the indicators of learning results are developed. The indicators are the contents of the test instrument in the form of learnng result blue-print.

To test the validity and reliability, the instrument test is tried out first, to students who have passed Motor-Cycle subject. The product moment correlation and formula of KR20 (Sugiyono, 2011) is used to obtain the validity and reliability coefficient. The test instrument was then used to measure the result of high order thinking skills after the tried out instrument showed its validity and reliability.

3.3 Data Analysis

Before the experiment was done, both groups of research subjects presented in the front were given a pretest to have general picture about the initial ability of both groups.

This research uses: 1) normality test of Kolmogrov-Smirnov, and 2) homogeneity test of levene's test to have result of analysis prerequisite test. After the data showed normal and homogenous, the analysis was continued with the descriptive data analysis and t-test analysis, by using SPSS of 16.0 version.

4. Result

4.1 The Description of Pretest Data as High Order Thinking Skills

Table 2. Result of descriptive analysis of pretest data

Learning Startegy	N	Mean	Std. Deviation	Std. Error Mean
Problem-Based learning	38	39.53	6.644	1.077
Conventional Learning	38	40.23	6.028	.965

The result of normality test of pretest data by using Kolmogorov-Smirnov test, it is found that the SIG coefficient of problem based learning is 0.130 and the conventional learning is 0.200, higher than 0.05. So, both groups of pretest data show normal distribution. Meanwhile, the result of test by using Levene Test shows the SIG coefficient of 0.185, higher than 0.05 (0.185 > 0.05), meaning the pretest data are homogeneous (Santoso, 2004).

From the result of the t-test of two independent samples, it is found that t value = -0,487, and the SIG value of learning result of Motor-Cycle subject pretest between the group of problem-based learning and the group of conventional learning is 0.627 (p>0.05). This shows there is not significat difference betwen the two groups in pretest data, meaning the initial ability of both groups is equal.

4.2 Data of Posttest Learning Result of High Order Thinking Skills

4.2.1 By Using Problem-Based Learning Strategy

Based on the result of measurement during the research, it was known that the mean of students' learning result was 78.026 with the deviation standard of 9.2925. Then the data distribution of learning result using problem-based strategy is shown by Table 3 below.

Table 3. Students' learning result by applying problem-based learning strategy

No	Learning Result	Absolute Freequency	Relative Freequency (%)
1	0 - 59	0	0.00
2	60 - 69	5	13.16
3	70 - 79	17	44.73
4	80 - 89	10	26.32
5	90 - 100	6	15.79
	Total	38	100.00

4.2.2 By Using Conventional Learning Strategy

Based on the result of measurement during the research, it was known that the mean of students' learning result was 71,487 with the deviation standard of 7.531. Then, the data distribution of learning result using conventional

strategy is shown by Table 4 below.

Table 4. Students' learning result by using conventional learning strategy

No	Learning Result	Absolute Frequency	Relative Frequency (%)
1	0 - 59	2	5.26 %
2	60 - 69	9	23.68 %
3	70 - 79	22	57.90 %
4	80 - 89	5	13.16 %
5	90 - 100	0	0.00 %
	Total	38	100.00 %

4.3 Result of Data Analysis

4.3.1 Result of Test of Analysis Prerequisite

The result of analysis of Kolmogrov-Smirnov is (SIG) 0.172 > 0.05, meaning the data of learning result shows normal distribution, and the homogeneity test is (SIG) 0.06 > 0.05, meaning the data of learning result is homogeneous. Since the data show normal distribution and homogenous, the analysis can be continued with t-test statistics.

4.3.2 Result of Hypothesis Testing

The result of hypothesis testing is displayed by Table 5 and Table 6 below.

Table 5. The result of descriptive analysis of learning result of high order thinking skills

	Learning Strategy	N	Mean	Std. Deviation	Std. Error Mean
Learning result	Problem-based learning	38	78.0263	9.29250	1.50744
	Conventional learning	38	71.5789	7.61092	1.23465

Table 6. The analysis of t-test for the data of high order thinking skills

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Learning Result	Equal variances assumed	2.791	.099	3.309	74	.001	6.44737	1.94853	2.56485	10.32989
	Equal variances not assumed			3.309	71.235	.001	6.44737	1.94853	2.56234	10.33240

Table 5 shows the result of t-test analysis of both independent samples, that is, the mean of class 38 students treated with problem-based learning treatment is 78,026, and the conventional class of 38 students is 71.578. Meanwhile, table 6 shows the t-test result of the two independent samples. As it is shown by table 6, the t-value is 3.309, and the p value (Sig 2 tailed) is 0,01. By using significant level $\alpha = 0.05$, it is found that p value (Sig 2 tailed) is $0.01 < \alpha$ (0.05). This means that the posttest result between the group of problem-based learning and that of conventional learning shows significant difference at ($p<0.05$).

So, the use of problem-based learning strategy in the learnng of Motor-Cycle subject in X TKR 1 class is more superior (better) than that of conventional learning in X TKR 2 class.

5. Discussion

The pretest result shows that the mean of learning result of the group treated with problem-based learning strategy is 39.53 ad the SD = 6.644. Meanwhile, the mean learning result of the one treated with conventional strategy is 40.23 and the SD = 6.028. The normality and homogeneity tests of pretest data is normal and

homogenous, so the analysis can be continued with the t-test. The result of t-test analysis shows that both groups have equal initial ability. It means that the treatment used to the both groups of research subject treated with different learning strategy are not affected by the initial ability.

The application of problem-based learning (table 3) does not affect to value distribution between 0-59. The value distribution of the subject taught is more dominant at the score of 70-100. Meanwhile, the application of conventional learning (table 4) still shows 5.26 % of research subjects that score between 0-59. Then, the scores scatter between 60-89, and there is no research subjects that score between 90-100. Based on the score distribution comparison of the research subjects, the problem-based learning strategy has more superior score distribution.

From the t-test analysis it is found that the t-value is 3,309 and the probability significance is 0.001. The value of probability significance is 0.001<0.05. So, the problem-based learning strategy has significant influence towards the learning result of high order thinking skills.

If viewed from the mean score, the cognitive learning result (high order thinking skills) from the group of students to whom the problem-based learning strategy (78.026) is applied is higher than that of the group of students to whom the conventional learning strategy is applied (71.578). This means that the application of the problem-based learning strategy results with better influence towards the achievement of learning result compared with that of conventional learning strategy. Based on the research result, it can also be seen that the problem-based learning strategy can make students motivate to learn more individually or in group to look for the problem solution being discussed. Further, such condition has made problem solution ability of the students increase because the students can directly identify all data relevant with the existing situation, that in the end will make the students increase their own high order thinking skills. Besides, the situation of learning by using problem-based strategy makes the students have high motivation to learn more and finish their assignments on time. So, the learning model applied to a specific learning needs a special care because such kind of learning situation has positive influence towards the students' learning results eventhough of the same teaching materials and facilities.

The problem-based learning is a strategy of contextual learning model having seven main principles that is: (1) constructivism, (2) inquiry, (3) questioning, (4) learning community, (5) modelling, (6) reflection, and (7) authentic assessment. The principles must be implemented in learning process to cause independent learning, meaningful learning, problem-based learning, while applying the high order thinking and integration of other disciplines. This process persuade the students to be more active in discussing the learning topic together with their friends using their own strategy to solve the problem, to share ideas, and to formulate or conclude concepts. The teachers play role only as motivators and facilitators in learning. Besides, the benefit of problem-based learning using group work method will practice the students to develop their thinking capability and inisiative, to increase helping each other in social life, and to cooperate in presenting their group work. By such cooperation, the students are in habit in doing tutor among the same age groups done in turn explaining the materials to other friends. In discussing the problem, the critical and creative students present the way to solve problems related to materials being discussed with high order thinking skills. In relevance with that, Arends (1997) states that the purpose of learning by problem solving strategy is not to give so many information to the students, but to help the students develop their own thinking ability, solve the problem and intelectual skills. Differently from the process of problem-based learning, the conventional learning, has very small probability to increase high order thinking skills, because the problems are sterile from students' environmental condition, and there is only one correct answer. The students only learn the steps of solving problems, but not how to solve the problems. Besides, the evaluation of learning result is done by looking at the process and learning result, in the form of performance assessment, project, portofolio, and written test. Such condition can make possibility for the application of problem-based learning more superior than conventional learning.

The application of problem-based learning strategy in a learning process give positive influence towards the students' learning results. This is in line with the research conducted by Danielson, et al. (2003) stating that, by problem based learning strategy, the ability of students' problem solving can increase because the students are habitually faced with learning problems and their solutions. Further, in their research, Sungur and Tekkaya (2006) stated that the class applying problem-based learning has high intrinsic motivation, influences meaning in doing the job, increases the ability to think critically and creatively, has metacognitive and self regulated learning, if compared with the class applying conventional learning.

The other superiority (excellence) of problem-based learning strategy is that it can positively affect the conceptual development of the students and maintain the misconception of the students at the lowest level

(Akinoglu & Tandogan, 2007). Then, in their research, Franz et al. (2007) said that the problem-based learning is a learning strategy which is able to increase the skills in solving problems and high order thinking skills based on the real problem situation. In his researh, Raharso (2007) showed that the learning process by applying problem-based strategy give optimal result if compared with that of conventional learning.

Besides, some factors in problem-based learning that can positively affect higher achievement of learning results are: (1) the use of problem-based learning strategy can accelerate the students' graduation. The reason is the students learn the teaching materials from the real context that can help the students to memorize, (2) the students are more motivated to learn when the students know the relevance of learning with real life in the future, mainly forte students who easily get bored going to school (Smith, 2010). Then, there are some strengths of problem-based learning compared with that of conventional learning as said by Suparman (2013), to mention two of them are the following: (1) the students taugh by applying problem-based learning strategy significantly can write better compared with those taught by applying conventional approach, (2) students with high and low achievement motivation treated with problem-based learning strategy significantly can succeed more highly compared with those treated with conventional learning strategy.

Further, the strength of problem-based learning is influenced by the involvement of the students in learning process. In groups, the students actively involved in the process of problem solving in accordance with context of real world around the students, and the teachers act as motivators and facilitators in such learning process. So, the students will be motivated to look for solution of problems accordance with their experiences, so based on knowledge or capabilities that already exist, students will construct new knowledge based on solving problems that have done. This is in accordance with the findings by Sartiani et al. (2012), concluding that the use of problem-based learning strategy in English writing activity has given six excellences including: (1) increasing the students' involvement in writing activity, (2) increasing students' motivation to actively participate, (3) helping the students in developing writing skill, (4) helping the students in solving problems, (5) making students accustomed to discuss or interact with their friends, and 6) helping students in summarizing and reflecting lessons.

From the description above, it can be concluded that the application of problem-based learning strategy will increase the students' learning results. Besides that, the strategy will increase the habit to work in team, to solve real problem, all of which will increase the students' high order thinking skills. The more important thing is this strategy will grow the habit of lifelong learning of the students. This capability in the future will be very important, in winning the job competition, looking for solutions to problems in the workplace and establish good cooperation with others, so it will support the success of their career in the future.

Therefore it can be recommended to teachers to be able to consider the use of problem-based learning strategies in teaching and learning activities, because it has many advantages

6. Conclusion

There is significant difference between group students treated with problem-based learning and that of treated with conventional learning. By using SPSS of version 6.0 it is found that the t-test is 3,309 and the probability SIG value is 0,001 lower than 0,05 (0,001<0,05). In other words, there is significant difference in high order thinking skills between the students of treated with problem-based learning strategy and the students of treated with conventional learning strategy. The achievement of the group of students treated with problem-based learning strategy (mean 78,026) is more superior compared with that treated with conventional learning strategy (71,578).

The application of problem-based learning strategy capable of improving high order thinking skills of students, which is implemented in problem solving skills, teamwork, and self-confidence better.

In the future, the high order thinking skills will be very important, in winning the job competition, looking for solutions to problems in the workplace and establish good cooperation with others, so it will support the success of their career in the future.

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Modern Standard Arabic and Rural Palestinian Dialect: Patterns of the Active Participle

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Abstract

This paper was mainly concerned with analyzing the processes of active participle formation in Modern Standard Arabic (MSA). It also aimed to examine the Rural Palestinian Dialect (RPD) in order to reveal the derivation of the active participle in this dialect and to describe any patterns that might vary from MSA. The study was based on the traditional notions of root and pattern which characterize Arabic morphology. The data for this study were collected from various sources. These sources are not researchers but they are people originated from Palestine. Then the data were analyzed in terms of morphology.

Keywords: word-formation, active participle, root, pattern

1. Introduction

Arabic is a Semitic language spoken by around 350 million people, but it is understood among Muslims around the world that is four times larger, (Abdel-Monem et al., 2009). In Arabic, there is classical Arabic, Modern Standard Arabic (MSA) and spoken Arabic. Classical Arabic is the Arabic used in the Qur'an and in the Arabian literature. MSA is the variety of Arabic which is used as the official language in Arab countries. Ziadeh and Winder (2003) report that MSA is widely used in the "media, official documents, correspondence, education and as a liturgical language," (p. 122).They add that it is a modern variant of classical Arabic and it is learned at school and in the daily news, religious practice, and print media. Spoken Arabic, on the other hand, which is often referred to as colloquial Arabic or dialects is a mixed form, which has many variations. These variations may be difficult to understand from one area to the other (Ziadeh & Winder, 2003). Thus, an important quality of the Arab communities is the existence of diglossia. According to Ferguson (1959), diglossia is a characteristic feature of the Arabic world and MSA is the language used for writing but it is not a native language of anyone.

The Arabic language is morphologically based on the notion of the root, which are three consonants which show a meaning. According to Aronoff (1994), the nature of Semitic languages' morphology is clear when one considers that "roots are mere collections of consonants from which all individual word-forms are quite dramatically given form by the laying of templates and affixes," (Aronoff 1994, p. 3). Ryding (2005) also defines the root as a "relatively invariable discontinuous bound morpheme" which has a lexical meaning (p. 47). Neme and Laporte (2013) agree with the Aronoff and Ryding and add that the grammatical differences among these forms make new patterns as the lexical items are classified as biliteral, triliteral, quadriliteral, quinqueliteral depending on how many letters the root has (Neme & Laporte, 2013).

According to Hudson (1985), the application of MSA morphological pattern rules is not difficult. He explains the traditional Semitic grammarians have documented a few examples to show derivational processes, but these examples are effective and the patterns are very clear, and they prove that root and pattern morphologies are not difficult to learn.

The morphological patterns of MSA are used in the colloquial varieties; however, new patterns have arisen by time. These patterns need to be studied as the dialect is considered a powerful means of communication which has its own characteristic features which make it unique. Many studies were conducted in order to investigate the linguistic variability in the Palestinian Arabic. However, few of these studies concentrated on the morphological patterns of the active participle. So, the researcher believed that this study might generate interest in this issue.

This study aimed to analyze the formation of the active participle in MSA. It intended to explore the patterns used in MSA and the Rural Palestinian Dialect (RPD). The researcher believed that an understanding of the manner in which the active participle is derived might have important implications on understanding the morphological variation between this dialect and MSA.

The linguistic description which this study presents was of two parts, the morphological features of the Active Participle in MSA and PRD. The data for the first part came from the studies which examined the active participle in MSA. The data concerning the Palestinian dialect were gathered by the researcher from individuals of a Palestinian background, including the researcher's family as a native Palestinians. The researcher, then, analyzed the data collected in order to reveal the PRD patterns which may be inconsistent with MSA.

2. MSA Morphology

Bohas and Kouloughli (2006) mentioned that the traditional schools which had a great role in establishing Arabic grammar are the Kufa School and the Basra School. These two schools agree that the majority of the Arabic lexis have a trilateral root (f ʕ l). Alkaleel-Bin-Ahmed used this root as a criterion for rhyming in poetry.

To convey information, the Arabic language uses sounds (Ryding, 2014). With these sounds, it creates patterns or templates where roots fit and by which stems are produced and inflected. These sounds are called *zawaaʔid* in Arabic (singular *zaaʔida*)) and are usually referred to as *formatives* in English terms as they are used to form words. Aronoff (1994) defines formatives as "serving to form words: said chiefly of flexional and derivative suffixes," (Aronoff, 1994, p. 2). Ryding (2014) mentions that Semitic vowels are components of derived word-stems and form three long and three short: /aa/, /ii/, /uu/, /a/, /i/, and /u/, whereas the consonantal derivational affixes used in Arabic are: hamza, taaʔ, miim, nuun, siin, yaaʔ, and waaw. These thirteen forms (six vowels and seven consonants) form the patterns in Arabic (Ryding, 2014, p. 65).

Morphologists used these patterns as a morphological scale to indicate the various processes that a word may show during its formation. These processes may involve affixation, letter shifting or sometimes deletion, among other processes. Of course, these changes take the form of patterns which have to comply with the language morphological scale. Examples to show how the morphological scale works are:

1- t a ʃ a a ʤ u r

ʃ ʤ j r

f ʕ l

t a f a a ʔ u l

2- i s t i b a a n a t

b y n

f ʕ l

i s t i f ʕ a l a t

In the first example, (*t a ʃ a a ʤ ur*) there isn't either deletion or shifting in the root (ʃ ʤ r). However, in (*istibaanah*) both deletion and replacive shifting occur; in the verb (*bayan*), the [ya] is deleted. As a result, the [ʕ] of the morphological scale is deleted also and the morph (t) is added at the end of the noun. It should be emphasized that in Arabic it is not acceptable to produce several stems from roots without considering the limitations of MSA root productivity, (Ibrahim, 2010).

Affixation also works as part of the pattern formation. For example, the prefix *–mu* is a morpheme used with participles which are derived from the verb, active or passive. Consequently, it can be part of the patterns such as *mufʕil* (e.g., *mumkin* 'possible,' or *mushrif* 'supervising') or *muftaʕal* (e.g., *muħtaram* 'respected'). This shows how the Arabic language is systematic in the word-building process (Bohas, Guillaume, & Kouloughli, 2006).

3. The Active Participle in MSA

The active participle is a form which is used in MSA as well as its varieties. It indicates the agent or doer of an activity such as teacher, writer, copier, worker, and director in the English language.

In MSA, the active participle has many patterns which can be listed as follows:

1- With trilateral roots in which the /ʕ/ (second consonant) of the verb is followed by the vowel /aa/, the active participle follows the pattern faaʕil . The following are examples where the trilateral verb and active participle are listed consecutively, (Ziadeh & Winder, 2003).

kataba	kaatib	‘writer’
nasaxa	naasix	‘copier’
ʕamila	ʕaamil	‘worker’
qaqḍa	qaaḍi	‘judge’

However, if the verb has /u/ vowel or *đamma,* it follows the pattern faʕiil such as:

ḍaʕufa	ḍaʕiif	‘weak’

Halwani (1993) mentions that with hollow verbs, which have the long vowel /aa/ in the middle, the active participle follows the pattern faaʔil. This is the case where the /ʕ/ of the verb is transformed into a hamza /ʔ/. Examples of this pattern are:

baaʕa	baaʔiʕ	‘seller’
naama	naʔim	‘sleeper’

2- With quadrilateral roots, the active participle follows the following pattern:

- Using the imperfective form of the verb, then substituting its marking consonant (y) with mu- and using a kasra for the pre-final consonant, thus producing the pattern mufʕil. Examples are:

aslama	yuslimu	muslim	‘Muslim’
aħsana	yuhsinu	muħsin	‘benefactor’
anʕama	yunʕimu	munʕim	‘granter’

Schulz (2004).

4. The Active Participle in the Rural Palestinian Dialect (RPD)

The Palestinian society has known a great deal of turmoil and destruction for a long time as it has been divided, and colonized and forced to learn other languages. This complicated the linguistic scene in Palestine. However, the Palestinians have been able to maintain their linguistic identity as Arab Muslims. Hallloon (2009) asserts that despite the various forms of colonization under which the Palestinian community fell, morphological patterns have been the least categories varying from MSA.

RPD is the variety spoken in Palestinian countryside and by Palestinians outside, who come from rural backgrounds but have maintained it for more than 60 years of exile. After meeting with members of native Palestinian, including the researcher’s family members, the following patterns were found. The researcher compared the patterns with MSA.

1- Using the pattern faʕʕaal instead of faaʕil with trilateral verbs.

Examples:

kaðaba	kaððaab	kaðib (MSA)	‘lier’
xadama	xaddaamih	xaddima (t) (MSA)	‘female servant’

It should be emphasized that faʕʕaal is a noun of intensity in MSA, which shows a great deal of the noun, and follow the pattern faʕʕaal. Rural Palestinians tend to use these patterns so frequently as in the examples stated above. Other examples are ‘sayyah nayyah’ to show the vastness of the house, and ‘kassiib’ for the person who earns a big amount of money.

2- Producing the pattern fuuʕlaan/ faʕlaan instead of faaʕil in MSA. An example of this is:

dʒaaʕa	dʒuuʕaan	dʒaaʔiʕ(MSA)	‘hungry’
zahiqa	zahkaan	zahiq(MSA)	‘bored’

3- In other trilateral patterns, Palestinians tend to also add the suffix –*i* at the end of active participles which are formed from defective verbs such as qaḍa, and maʃa.

PRD	MSA	
kaḍi-I	Qaḍi	‘judge’
maʃi-i	maʃi	‘walker’
daʕi-i	daʕi	‘propagandist’

In these examples, the -*i* in MSA marks the *kasra*, whereas, the -*ii* in PRD marks the consonant /ī/ in Arabic.

This distinction is caused by nunation in MSA. Examples to illustrate this are:

MSA	PRD	
haaða qaadi	haaða qadi-i	'This is a judge'
zarana daaʕi	zarana daaʕi-i	'we were called on by a propagandist'

Qaadi and *daaʕi* here are marked with *-i (kasra)* due to nunation. In non-nunated constructios, MSA retains the *ii* (consonant ī), which shows conformity between it and PRD. Example of non-nunated constructions in MSA are: *marra alqaḍi-I* 'the judge passed' and *ansaftu alʃaaki* 'I was fair with the defendant.'

4- There are patterns used in PRD which are derived from trilateral geminated roots in MSA such as (ħabba, ħassa, ħalla, falla), For example:

ħab-ib	'lover of'
ħal-il	'solver'
fal-il	'a runner away'

In fact, this pattern in PRD indicates a derived active participle (as they represent the person who does the action). However, the researcher looked for a similar derivation in MSA and found *hall* 'solver' and *radd* 'replier,' (Ryding, 2014). These forms indicate a geminated */l/* and */d/* not doubled ones as in PRD (ħal-il, rad-id).

5- Sometimes PRD speakers use the active participle instead of the passive participle (e.g., maṣoon 'preserved', mutawwafaa 'deceased') in constructions such as as *ħakkak musaan* 'your right is preserved, and *abooh mitwwafi* 'his father has passed away.' According to Ryding (2014), the MSA version of these constructions is the passive participle: *ħakkak masuun*, and *aboohu mutawwafaa*.

6- PRD speakers use the pattern *mifʕil* instead of the pattern *mufʕil* in MSA. Examples are:

MSA	PRD	
mu-slim	mi-slim	'Muslim'
mu-ħsin	mi-ħsin	'benefactor'
mu-nʕim	mi-nʕim	'granter'

As mentioned above, MSA forms active participle from quadrilateral verbs by replacing the imperfective marking consonant (y) with *mu-* and using a *kasra* for the pre-final consonant, thus producing the pattern mufʕil. These examples show that PRD speakers partially retain the way the active participle is formed in MSA as they keep the –i-(*kasra)*, but use the prefix *mi-* instead of *mu-* of MSA.

It is noteworthy to mention that there are several derivational affixes used in the Palestinian dialect, which do not exist in MSA. These forms are the result of foreign influence on Palestine throughout history and contact with neighboring countries. Some of these affixes are:

1- Some noun which refers to the agent are derived by adding the suffix –ji. This suffix is usually used to indicate people's professions. Examples are:

Kundar-ji	'shoe mender'
kahwa-ji	'coffee maker'
Kabab-ji	'kebab seller'
Hamam-ji	'pigeon seller'
kola-ji	'goal keeper'

2- Adding the prefix baʃ- to career nouns such as muhandis (engineer), kateb (clerk).

Examples:

Baʃ-muhandis

Baʃ-katib

In the examples, kateb and muhandis are derived according to MSA patterns. However, the prefix baʃ- does not exist in MSA. It is one of the prefixes which the Palestinians adopted from Turkish in addition to the suffix –ji during the Turkish rule over Palestine. In the Palestinian rural society, the prefix baʃ- is used as a title which shows respect and a good social and professional rank (Hallloon, 2009).

5. Conclusion

This study aimed to analyze the active participle used in MSA and RPD. The data for this study were collected from different sources. The analysis of the data revealed the patterns used in MSA. These patterns were listed and investigated morphologically. The PRD was also examined in order to find the different patterns. It was found that PRD uses the MSA patterns of the active participle such as *faaʕel, faʕeel* and *mufʕill*. However, other different patterns were found and were morphologically examined. These forms showed that PRD active participle did not only vary morphologically from MSA, but it also developed some affixes which are non-Arabic at all such as -ji and baʃ-. The researcher would like to point out that the limited framework of this study did not make it possible to make an extensive examination of the active participle. The researcher believes that PRD morphology deserves a more comprehensive study.

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Faculty Members' Attitudes towards the Performance Appraisal Process in the Public Universities in Light of Some Variables

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Abstract

The present study aimed to detect the level of faculty members' attitudes at public universities towards the performance appraisal process and its relationship with some variables (gender, college, scientific rank, university, teaching experience, and age). The study sample consisted of (320) faculty members of both sexes in three public universities in northern Jordan, namely (Al Yarmouk University, Jordan University of Science and Technology, Al-Balqa Applied University). The results showed that the attitudes of faculty members towards the performance appraisal process was moderate, and the results showed that there were no statistically significant differences at the significance level ($\alpha = 0.05$) in the degree of attitudes of faculty members towards the performance appraisal process in the public universities due to gender, college, scientific rank, teaching experience, and age. As for the university variable, the differences between the averages were not statistically significant.

Keywords: faculty members' attitudes, public universities, performance appraisal process

1. Introduction

Universities play a vital role in all parts of the world by participating actively in establishing the knowledge of societies, which ultimately leads to the rapid economic growth, and that the universities in any country working on human capital development (students) to contribute to the best in the various professions and the society as a whole. Universities are responsible for the development and success of open and democratic civil society, which gives students insight and reflect the theme of knowledge as well as to provide social skills of communication and interaction, to prove that it is a model of a modern civil society and a good place for education.

Moreover, the universities share work between the faculty member and administration together, but the primary responsibility for the development of students professionally comes at the hands of a faculty member. Perhaps the achievement of global standards and effective management, and the good performance of the faculty members constitute a major concern in any university. The sustainable process of performance evaluation of faculty members at universities should be poured into its main interest that operate in turn to enhance the performance of students and improve education and training for them as the next human capital. The blossoming of learning and enrich the academic and intellectual knowledge to students in the university environment as a whole and the quality of higher education in universities cannot be achieved without evaluate and continuously improve the performance of the teacher (Ibrahimi, 2013).

The performance of the faculty member related to the society around him such as spreading culture, counseling and conduct studies and research that address the problems of the society as well as to strengthen the relationship of the university community institutions and activating the role of government and private institutions in the University Student Service (Kubaisi, 2010).

The university professors' tasks are achieved through the development of students to participate actively in the tremendous knowledge management theory and relevant context, and this matrix of tasks for university professors make them more practical and renewal. Professional development for university professors requires a system for assessing the effective performance during their careers (Aslam, 2011).

Stronge (2006) explains different types of methods of assessment such as assessment of institutions or students or assessment by peers, but all these methods aim to identify the gap between performance and provide opportunities to overcome these gaps in the colleges of higher education (Sheikh, 2007). We must encourage

faculty members to perform evaluation because of its convenient positive results, and improve effective teaching process on a larger scale, where it leads ultimately to increased insight to those responsible for the university to prioritize on the learning environment and create an atmosphere better education for students (Reddy, 2006).

The performance evaluation process is seen as the teacher's guide in order to improve his ability to teach in order to give the best of what he has, and faculty members need more accurate and valid data for self-improvement in weak points, when the evaluation based on facts faculty members will have better measures of positive improvement. This means that the performance of faculty evaluation system must transfer teachers to improve teaching methods and bring about the desired change and increase productivity by improving the weaknesses pointed out by the results (Aslam, 2011).

Peterson (2000) confirms that there is compulsory and multi-tasks as an idea of accountability to ensure that the teacher offer the services according to the requirements of the enterprise, and improving performance leads to professional growth and improve the performance of teachers. Stronge (1995) also confirms that the accountability and performance improvement is supportive interests are inevitable to develop and enhance the delivery of educational services, and there must be cohesion between the various tasks and evaluate teacher performance. This multi-tasking is one of the evaluation processes, and the improvement in this aspect is not limited to the teacher only, but to improve the university as a whole, and that the goal of performance in universities evaluate is to reach decisions on personnel such as promotion, decisions to get performance bonuses, and guidance in hiring decisions or termination.

There are many methods for evaluating the faculty members such as Likert Scale in the questionnaires which is designed to evaluate the performance, then extract the means and use it as an indicator of performance. Formative evaluation or summative through collecting assessments and express it as a percentage of the general classification, then ask questions for students to evaluate the overall performance (Davies, Hirschberg, Lye, Johnston, & McDonald, 2007).

Ways and methods of performance evaluation

There are many methods and techniques used in the performance evaluation of faculty members and the most important of these methods and techniques include:

First: traditional way

1) Gradient graphic way: It is a measure consists of several estimates begin with low-grade and end high estimate, as if the estimates (low, moderate, good, very good, excellent) and expressed in numbers, and then those estimates are combined and the total is a representative of the level of the screened individual.
2) Sort method: The personnel order the subjects belonging to him in a descending order from best to worst in the way. The basis for the ranking is the overall performance of the work and not the characteristics or certain qualities, this method can be learned and applied more easily in the case as the number of faculty members are few and does not exceed twenty individuals (Shawish, 2005).
3) Forced distribution method: to compel the administrator or department head on the distribution of faculty members on the ratings are determined by the university, which is called the normal distribution. Since the majority of faculty members are taking an intermediate degree of assessment, the proportion of members is taken whenever a departure from this intermediate class either rise or fall (Maher, 1999).
4) Evaluating method through freedom of expression: This method relies on what is he doing, in charge of writing his impressions about the faculty member. Not using tables and there are not specific lists or any other means, and these impressions can be arranged as headings subset, such as: the nature of the assessment of the task, recipes of faculty member, things that need to be developed and others (Shawish, 2005).
5) Dual comparison between the workers: the administrator compares the performance of each faculty member with the other members, and by dividing the members of their departments into pairs. This method provides dramatic objective. It is a complex process in the case of large numbers and weaknesses and shortcomings appear in the performance of a faculty member.
6) Checklists: This method is based on studying each type of jobs, and selecting the questions that include descriptive phrases which describe good performance. There is no specific number, but the number depends on the job and its nature, the official answer to the questions "yes" or "no" according to what applies to a faculty member to be evaluating his performance. Then combining grades obtained by the faculty member after the completion of the answer and turn it into a descriptive value to reflect his performance (Abu

Sheikha, 2000).

Second, modern methods of performance evaluation

The traditional way of evaluation was criticized because of its reliance on the personal characteristics of the officials and heads of departments and prejudices rather than reliance on the objectives to be measured for performance, so thinking to develop better ways to assess the performance of faculty members has been started (Abdelbaki, 2000), and these methods include:

1) Critical incidents method: This method relies on the collection of facts affecting the performance of a faculty member, and then the administrator observing the performance to know exactly what the facts that happened to carry out his duties and responsibilities of the job, and after the performance is evaluated based on the number of incidents that have occurred in the performance
2) Compulsory selection method: This method to choose the president in charge of ferries two phrases from four phrases describe a faculty member, and one to be the best he has had and the other will be far from the description, and this way is characterized with objectivity in the evaluation, and is characterized by forcing resident to study the performance accurately and analyze phrases to find out the extent of overlap between the behavior and characteristics of a faculty member (Abu Sheikha, 2000)
3) The way of field research: it depends mainly on the active participation of the management of faculty members in the performance appraisal process. And it is based on an oral procedure during the interview and is then formulating answers and a written description, and the members are assessed on the basis of the order of one estimate (excellent, good, acceptable, unacceptable).
4) Collective assessment method: The Members performance evaluation by the Commission, one of its members have a direct head of a faculty member, and after the meeting, some things will be discussed as standards of performance, and the completion of the same group and private business to improve its performance in the future.
5) Evaluation based on results: based on the idea of the progress made by the faculty member from the results as a basis for evaluating performance, and focusing on specific safeguards provide them with objectivity in the assessment, develop a spirit of cooperation between the President and his subordinates.
6) Style of management by objectives: This method is based on the idea of the involvement of faculty members with their boss in setting goals and achieving and completing them, and this method has become commonly used in recent years (Shawish, 2005).

The evaluation of effective comprehensive teaching must be fundamentally conducted on certain principles to reach the designed goal of the foundation and the evaluation must be the best possible measure and an essential part of the educational process. Collecting data for scientific assessment should be clear and accepted by both students and teachers. it is a must for every student to give a fair and realistic reaction to teacher performance inside the teaching hall, and here is the responsibility of the teacher to make efforts for a better learning environment and improve himself for effective teaching (Reddy, 2006). It must be considered that both the students, colleagues, administrators, and the teachers themselves are key elements in the collective judgment of the performance of teaching. Actually, the students are always able to provide the correct information about teachers' performance, and effectiveness in teaching, and the co-teachers in the same job for them positive evaluation process contributions. The teacher's evaluation of himself also is instrumental if conducted properly and in a constructive way to be an inherent part of the evaluation and effective information to improve performance (Seldin, 1980).

1.1 The Problem of the Study and Its Questions

Universities in various countries are seeking to gain access to advanced ranks in the classification of international universities, the evaluation process is used as one of the things for organizational restructuring to access advanced mattresses. Public universities' administrations in Jordan assess performance of faculty members periodically, it is semi-routine process that is not used in achieving the desired goals, and the university departments do not benefit from the evaluation process to take appropriate decisions as a contract training courses inside or outside the university, or the granting of physical or moral bonuses and rewards. This makes the evaluation process has no role in the work of faculty members. Some parties may do this process also subject to prejudices and personal relationships, and the assessment of teachers randomly. Hence, the problem of the study appeared which is the attitudes of faculty members about the performance appraisal process in the public universities, the study attempts to answer the following questions:

1) What is the degree of the attitudes of faculty members about the performance appraisal process in public universities?
2) Are there significant differences at the significance level ($\alpha = 0.05$) in the attitudes of faculty members according to gender?
3) Are there significant differences at the significance level ($\alpha = 0.05$) in the attitudes of faculty members depending on the college variable?
4) Is there a statistically significant differences at the significance level ($\alpha = 0.05$) in the attitudes of faculty members depending on the variables of scientific rank, university, teaching experience, or age?

1.2 Significance of the Study

The importance of the study from the theoretical aspect appeared by identifying the degree of attitudes of the faculty members about the evaluation process in universities in northern Jordan, and its implications on the professional status of workers in these universities, and its role in stimulating or not to stimulate the performance process of the faculty member. From the practical side, the study is working to provide the managers of these universities and the Ministry of Higher Education with the results. This will help them to shape the future plans of these universities and develop to reach the advanced levels at the level of higher education institutions, as this study provides important data to improve the performance of faculty members and the progress they have of their better performance.

1.3 The Objectives of the Study

This study seeks to achieve the following objectives:

1) To detect the level of the attitudes of faculty members in governmental universities towards the performance appraisal process
2) To identify the differences between the attitudes of faculty members according to gender
3) To identify the differences between the attitudes of faculty members depending on the college variable
4) To identify the differences between the attitudes of faculty members depending on the variables of scientific rank, the university, teaching experience, and age.

1.4 Procedural Definition of Terms

Attitudes: it is a state of psychological readiness and be a guideline or a dynamic effect on the individual for all subjects and situations that evoke this response (O'Keefe, 2002). Moreover, it is defined procedurally through grade the obtained from the questionnaire prepared for measuring faculty members attitudes.

Faculty members: they are qualified and efficient personnel to carry out the educational process within the college within the framework of his university, and are working on a follow-up study plans for programs and disciplines and development, which is in charge of supervising the students.

Performance: The evaluation of a system designed to measure the performance and behavior of individuals while working through continuous and systematic observation to get an estimate of the effort, activity, and behavior, and the efficiency of each individual separately, so that it is all done objectively to determine the strength and promotion points and vulnerabilities and encountered the (Sabah, 1997)

Public universities: it is one of the public universities of the Jordanian Ministry of Higher Education, which are located within the province of Irbid in northern Jordan.

The limits of the study

1) This study was limited to public universities in Irbid Governorate and did not include the rest of the public universities in Jordan, so the generalization of findings should be limited to this category of universities.
2) This study was limited to faculty members in public universities at Irbid Governorate and did not include the faculty members at private universities of the same province.
3) This study was implemented during the second semester of the academic year 2015/2016.

2. Literature Review

Jaffery (2002) conducted a study, which aimed at identifying the views of graduate students about the teaching performance of faculty members at the University of Umm Al-Qura. The researcher used a questionnaire from her preparation, she applied it over a sample of (298) female students in the Master stage in six colleges at the University of Umm al-Qura: (Education, social Science, Applied Science, Arabic, law, advocacy). The results of

the study indicated that there were no statistically significant differences between the mean of the responses of the students about the teaching performance of faculty members, male and female in different colleges, except Arabic language and advocacy colleges. Results also indicates the absence of significant differences between those averages about teaching performance for faculty female faculty members is due to the colleges' differences, with no statistically significant differences between the arithmetic mean of the responses of the study sample on the performance of the male faculty member is due to the different colleges.

The study of Hassan and El-Khouly (2003) aimed at recognizing different estimates of the students of the performance of faculty members at the University of Qatar according to the variables: the gender of the student and the cumulative GPA and the college where he studies, the type of the course he registered in. The study sample consisted of (2590) students and 632 faculty members. The results indicated that there were statistically significant differences in the estimates of students about the performance of the faculty members in the theoretical courses due to the gender variable in favor of male students. On the other hand, there were no statistically significant differences between the averages of estimates of students for the performance of the faculty members in the process courses due to the gender of the student. The results also found that there were statistically significant differences between the estimates of the students about the performance of faculty members in the theoretical courses, and it was attributable to the different colleges and for the benefit of both colleges: College of Education and the College of Management and Economics. There were also statistically significant differences between the means of estimates of students about the performance of the faculty members on the theoretical and practical courses due to the different colleges in favor of the colleges of education, engineering and science. While there were no differences between the students' assessments of the performance of the faculty members in the practical courses are attributable to the differences in colleges with the exception of the faculty of Engineering and the average student estimates came to perform smaller than the rest of the college.

Nono (2004) held a study that aimed to assess the evaluation of the performance of faculty members in public higher education institutions in the Gaza Strip policies, the study sample consisted of (140) Researched. Results showed that there was:

1) The system is a lack of scientific and objective criteria derived from accurate job descriptions,
2) Lack of the system to a variety of means to gather the necessary evaluation process information,
3) Process performance rests with the direct head assess located only without the participation of any other parties,
4) There is a weakness in the level of staff efficiency based on the evaluation process,
5) Feedback on the assessment results are not available, leading to ignorance of the employee's level of performance,
6) Do not rely on the assessment results in personnel decisions, such as training and motivation.

The aim of Khoury (2004) study is to determine the obstacles faced by the application of performance appraisal process of full-time faculty members in the Palestinian universities in the West Bank. The study has reached the following conclusions:

1) Performance evaluation for instructors in the university system is a traditional routine system with a slow mechanism,
2) Performance appraisal process does not have a strong impact on the teachers because there is no feedback system,
3) There was considerable support for the idea that the evaluation process of applying a better way leads to improved performance of academics.

The aim of Razek (2006) study was to detect the attitudes of faculty members of the College of Education, King Saud University, about the methods and ways to evaluate the performance of a faculty member, The study was conducted on a sample of (93) faculty members of the Faculty of Education, King Saud University. The results showed the agreement of the study sample on the importance and vitality of methods and ways to evaluate the performance of a faculty member. The order of the methods from the viewpoint of the respondents was as follows: evaluation of the heads of departments method 80%, self-evaluation method 72%, the way students evaluate faculty members 53%; evaluating colleagues method 49%. The results also indicated that there were no statistically significant differences between the attitudes of faculty members about the ways and methods of evaluation between males and females, but in the students evaluate faculty member method there were

differences in favor of females.

The Filimban's (2007) study was aimed to know the positive and negative aspects of the academic file to evaluate the performance of the faculty members at King Abdul-Aziz University, the study sample consisted of (71) of the administrative leaders and 90 faculty members who have scientific ranks of Assistant Professor, Associate Professor, and Professor. The results showed that the evaluation played by the Vice Dean and Dean of the faculty member is not considered enough to judge the adequacy of competency and there are differences between the responses of academic leaders and faculty members in key aspects of the performance. Moreover, that some file items do not apply to the actual reality and the potential for the performance of academic profession.

The study dealt with Ajlouni (2011) tackled the attitudes of faculty members at the University of Science and Technology about the process of student assessment of their performance and the factors influencing these trends, the study sample consisted of 200 faculty members. The results showed that the personal relationships and the difficulty of Article are influencing factors in the evaluation of students' performance of faculty members. and not for the life-time of a faculty member or academic rank the impact of the trends, and the results showed no differences in these trends are attributed to the University of graduate faculty member, and did not there were differences in experience and age, academic rank variables, and that those who hold the doctorate degree more positive.

Islam (2011) study aimed to explore the performance gaps in public and private universities in Pakistan and focus on the performance of faculty members and evaluate it, the sample consisted of (100) researched divided between three layers are the deans, heads of departments, and faculty members. The personal interviews and questionnaire were used to obtain the data. The results showed that the decline in motivation to evaluate and less share in decision-making, culture and organizational competitiveness and standards of the classroom system are of the most important factors and challenges faced by universities in the performance assessment. And that the methods of performance evaluation become old and outdated decade, and the lack of training of the person is a resident of the performance hurdles for the effective performance evaluation of the system in Pakistani universities.

Moreno-Murcia, Torregrosa, and Pedreno (2015) held a study aimed to design and verify the validity of the measuring tool for evaluating the performance of teachers in the education process; the sample consisted of (1297) university students. The appropriate statistics and internal consistency have been made, and the link between each paragraph of the paragraphs. The results showed up with a suitable structure for the questionnaire consisting of three dimensions which are the planning, development, and the result, and that the tool is valid and honest in its construction to evaluate the performance of a university faculty member.

3. The Methods and Procedures

3.1 Research Methodology

In the research, the descriptive analytical method was used to determine the degree of trends of faculty members at public universities about the performance appraisal process and its relationship with some variables; where a questionnaire designed by the researcher was used to see the degree of faculty members' attitudes.

3.2 Population of the Study

The population of this study consisted of faculty members at Yarmouk University, The university of Science and Technology of Jordan, and Al Balqa Applied University in Irbid Governorate during the second semester of the academic year 2015/2016 and who form (1819) faculty members.

3.3 Sample of the Study

The study sample consisted of 320 faculty members, was chosen purposely and according to different variables of the study, and Table 1 shows the distribution of the sample according to these variables.

Table 1. The study sample distribution according to independent variables

Variable	Level	N.	Percentage
Gender	Male	160	50%
	Female	160	50%
College	Humanitarian	160	50%
	Scientific	160	50%
Academic rank	Professor	58	18%
	Associate professor	92	29%
	Assistant professor	103	32%
	Lecturer	67	21%
Teaching experience	1-5 years	44	13.8%
	5-10 years	167	52.2%
	10 years and above	109	34%
Age	Less than 35 years	87	27.2%
	36-45 years	172	53.8%
	More than 45 years	61	19%
University	Al Yarmouk	110	34.4%
	Jordan university of Science and Technology	110	34.4%
	Al-Balqa Applied university	100	31.3%

3.4 Variables of the Study

The study included the following variables:

First: Independent variables

- Gender: It has two categories (male, female).
- College: It has two categories (humanitarian, scientific).
- Academic Rank: It has four categories (professor, associate professor, assistant professor, and lecturer).
- University: It has three categories (Yarmouk University, The University of Science and Technology of Jordan, Al Balqa Applied University).
- Teaching experience: It has three categories (less than 5 years, 5-10 years, 10 years and over).
- Age: It has three categories (less than 35 years, from 36-45 years old, more than 45 years).

Second: The dependent variables

- The performance appraisal process

3.5 The Study Tool

The study tool was built by reference to the literature and previous studies on the subject of performance evaluation of faculty members such as Ajlouni (2011) study, the study of Shaheen (2010), the study of the Abu Madi (2007), and the study of Nono (2004). Then this tool was built according to a sliding scale as follows:

(1 = Strongly Disagree, 2 = Strongly Agree, 3 = neutral, 4 =Agree, 5 = strongly agree). The study tool included two parts: the first part, regards information about the independent variables of the study, namely, (gender, academic rank, university, teaching experience, age, college). Part II contained passages study tool, which has been drafted (15) paragraphs describing trends of faculty member about the performance appraisal process.

3.5.1 The Tool Validity and Reliability

The researcher gave the study tool to a group of arbitrators' jurisdiction who are holders of PhDs in educational research and educational supervision, to ensure its validity. They were asked to give their views on the tool, and to add what they see fit, and they were asked to express their views in the following: the extent of the paragraph clarity, and the extent of the possible presence of paragraph in the evaluation system, and the availability of important paragraphs in the evaluation process. Some items have been deleted and some paragraphs added based on the opinion of the arbitrators, it has been taken into account when finalizing the study tool, so check the internal validity of this tool. As the researcher extracted the construction validity of the scale applied on a prospective sample of 47 faculty members, and then calculated the correlation coefficients debugger paragraphs with the measure as whole values, as shown in Table 2.

Table 2. The values of correlation coefficients (debugger) to items of the study tool

Item number	Correlation coefficient	Item number	Correlation coefficient
1	0.68	9	0.84
2	0.57	10	0.52
3	0.54	11	0.59
4	0.61	12	0.75
5	0.52	13	0.66
6	0.48	14	0.68
7	0.43	15	0.42
8	0.62		

Notes from the data in Table 2 that the link to the paragraphs of the study tool transaction values ranged between (0.43 - 0.84), all of which are statistically significant values. The researcher has adopted a standard for accepting paragraph that at least linked dimension and a whole list coefficient (0.30). As the researcher calculates the reliability of study tool as a whole using Cronbach's alpha coefficient, reaching (0.87) which is suitable for the use of the tool value for the purposes of the present study also as the researcher sees.

3.6 Data Analysis

After collecting the data of the study, the study questions were examined through the following statistical tests:

1) The arithmetic means and standard deviations were used for each paragraph of the study tool, and extraction of the total performance score.
2) To answer the gender differences in college, T-Test was used to these differences.
3) To answer the differences in degrees of trends of faculty members, contrast Four Way ANOVA was used, also (Scheffe-Test) for posterior comparisons was used.
4) The paragraphs of the tool were corrected by giving the paragraphs the following responses grades: (1 = Strongly Disagree, 2 = Strongly Agree, 3 = neutral, 4= Agree, 5 = strongly agree). Where the grade increases with the arithmetic mean and less class, the less the arithmetic mean, and to judge the degree to which in the light of results and their interpretation, the adoption of three levels as follows: the arithmetic mean (3.75 and above) refers to a high degree. The arithmetic mean (2.50 to less than 3.74) indicates a moderate degree. The arithmetic mean (2.49 or less) refers to a weaker class.

4. The Results of the Study

Results related to the first question: "What is the degree of attitudes of faculty members about the process of performance evaluation of public universities?"

To answer this question averages were extracted, standard deviations, and assess the degree of paragraphs that measure the degree of the attitudes of faculty members, and Table 3 show the results.

Table 3. Means, standard deviations, and the degree of attitudes of faculty members through the tool items

Ranking	Item	Mean	Standard deviation	The degree of performance
1	The evaluation of the faculty member for himself (self-assessment) in the performance appraisal process is taken into consideration.	3.74	0.81	Moderate
2	Personal factors of the faculty member and his attributes take part from the performance appraisal process.	3.71	0.89	Moderate
3	The tendency to randomness and lack of seriousness by the students in the performance appraisal process	3.68	0.78	Moderate
4	the evaluation process provides feedback for a faculty member to review teaching methods	3.67	0.92	Moderate
5	the performance appraisal process is Characterized by flexibility to face the changes in teaching	3.66	1.01	Moderate
6	The University is reviewing the terms of performance evaluation and its amendments based on the latest developments and the requirements of the present time	3.64	0.99	Moderate

7	Research and scientific papers and participation take part of the performance appraisal process	3.64	0.82	Moderate
8	The university benefit from the performance appraisal process in making appropriate decisions	3.61	0.68	Moderate
9	The performance appraisal process of the faculty member has positive results on the university.	3.58	0.71	Moderate
10	There is an ad hoc committee to evaluate the performance of a faculty member and be within his specialty	3.55	0.84	Moderate
11	Students have the ability to evaluate a faculty member in the hall assess teaching	3.54	0.90	Moderate
12	The university takes into account when choosing performance standards the job description for the faculty member	3.51	0.69	Moderate
13	performance evaluation process is conducted in regular periodic times (each semester)	3.49	0.60	Moderate
14	The performance evaluation system helps the user to know the strengths and weaknesses in the performance of a faculty member	3.47	0.87	Moderate
15	The performance evaluation system helps the user to develop and improve the performance of a faculty member.	3.45	0.66	Moderate
		3.60	0.68	Moderate

* Maximum score (5).

Table 3 shows that the degree faculty members' attitudes were moderate; where the instrument as a whole and all its clauses got responses indicate a medium degree.

Results for the second question: "Is there any statistically significant differences at the significance level (α = 0.05) in the attitudes of faculty members depending on the gender variable?"

To see if there were differences between the sexes on the attitudes of the faculty members on the tool, (t-test) was used. Table 4 means and standard deviations and the results of the (T) test.

Table 4. T-Test results of the differences between the mean scores of both sexes the tool of attitudes of faculty members

Tool	Gender	Mean	Standard deviation	T value	Sig
Attitudes	Male	1.85	0.65	2.63	0.009
	Female	1.97	0.52		

Table 4 shows that the value of (T) reached (2.63) with a statistical significance (P <0.01), it is evident from the table that the average female degrees higher than the average male degrees.

Results related to the third question: "Is there any statistically significant differences at the significance level (α= 0.05) in the attitudes of faculty members depending on the college variable?"

To see if there were differences between the college on the attitudes of the faculty members' tool, (t-test) was used. Table (5) shows means and standard deviations and the results of the (T) test.

Table 5. (T) Test results of the differences between the mean total scores on the tool of attitudes of faculty members

Tool	College	Mean	Standard deviation	T value	Sig
Attitudes	Scientific	2.35	1.27	6.35	0.000**
	Humanitarian	1.82	0.97		

Table 5 shows that the value of (T) reached (2.63) with a statistical significance (P <0.01), it is evident from the table that the means of scientific college degrees higher than the mean humanitarian college degrees.

Results related to the fourth question: "Is there any statistically significant differences at the significance level (α = 0.05) in the attitudes of faculty members depending on the variables of scientific rank, or university, or teaching experience, or age?"

To answer this question arithmetic means and standard deviations of the estimated faculty member attitudes on the tool items of the study as a whole were extracted, according to the variables (faculty members, Academic Rank, university, teaching experience, age), and Table 6 shows that.

Table 6. Means, standard deviations of the estimated attitudes of faculty members on the tool items on the study as a whole, according to the variables (Academic Rank, university, teaching experience, age)

Variable	Level/category	N.	Mean	Standard deviation
Academic rank	Professor	58	2.66	0.70
	Associate professor	92	2.84	0.80
	Assistant professor	103	2.92	0.57
	Lecturer	67	2.87	0.80
University	Al Yarmouk	110	2.88	0.64
	Jordan university of Science and Technology	110	2.89	0.66
	Al Balqa Applied University	100	2.83	0.62
Teaching experience	1-5 years	44	3.63	0.54
	5-10 years	167	2.94	0.62
	10 years and above	109	2.82	0.63
Age	Less than 35 years	87	2.88	0.63
	From 36-45 years	172	2.79	0.61
	More than 45 years	61	2.29	0.51

It is clear from the Table 6 that there are morphological differences between the estimated means of attitudes of faculty members on the study tool as a whole according to the variables of (Academic Rank, University, Teaching experience, age). To find out the statistical significance of those differences Contrast quartet analysis was used (Four Way ANOVA), and Table 7 shows that.

Table 7. Results of contrast quartet analysis of the estimated attitudes of faculty members on the tool items as a whole, according to the of variables (Academic Rank, university, teaching experience, age)

Source of variance	Sum of squares	Df	Mean of squares	F value	Sig
Academic rank	0.806	3	0.269	8.116	*0.000
University	2.606	2	1.303	2.034	0.155
Teaching experience	2.633	2	1.317	8.398	*0.000
Age	2.585	2	1.293	2.835	*0.000
Error	84.758	310	0.273		
Total	93.388	319			

* Statistically significant at the significance level (0.05 = α).

As seen from Table 7 there are no statistically significant differences at the level of significance (0.05 = α) in the average of estimated attitudes of faculty members on the study tool as a whole according to the study variables except the variable of "university" where it did not show any differences in it.

The table showed no statistically significant differences at the level of significance (0.05 = α) in the average of estimated attitudes of faculty members on the study tool as a whole due to the variable "scientific rank", as the value of (P = 8.116), with a statistical value of (0.000). To find out for the benefit of whom those differences was (Scheffe) test for posterior comparisons was used, and Table 8 shows that.

Table 8. Results of (Scheffe) test of posterior comparisons of the estimated attitudes of the faculty members on the tool items as a whole, according to "scientific rank" variable

		Academic rank			
		Professor	Associate professor	Assistant professor	Lecturer
Academic rank	Mean	2.66	2.84	2.92	2.87
Professor	2.66				
Associate professor	2.84	0.31			
Assistant professor	2.92	01.00	0.30		
Lecturer	2.87	*0.47	0.16	0.63	

* Statistically significant at the level of statistical significance α = 0.05).

It is clear in Table 8 that there is a statistically significant difference at the level of statistical significance (α = 0.05) between the means of estimated attitudes of faculty members with scientific rank (professor) on the one hand and with Academic Rank (lecturer) on the other hand, for the benefit of faculty members with Academic Rank (lecturer).

The table also showed no statistically significant differences at the level of significance (0.05 = α) in the means estimated attitudes of faculty members on the study tool as a whole due to the variable Teaching experience, as the value of (P = 8.398), with a statistical significance (0.000). To find out for the benefit of whom those differences (Scheffe) test for posterior comparisons was used, and Table 9 shows that.

Table 9. Results of (Scheffe) test for posterior comparisons pf the estimated attitudes of faculty members on the tool items as a whole, according to the teaching experience variable

Number of students in the class		Number of students in the class		
		1-5 years	5-10 years	10 years and more
	Mean	3.36	2.94	2.82
1-5 years	3.36			
5-10 years	2.94	0.10		
10 years and more	2.82	*0. 70	0.09	

Table 9 showed that there is a statistically significant difference at the level of (α = 0.05) between the mean of estimated attitudes of faculty members whose teaching experience is (1-5 years) on the one hand, and those with a teaching experience (10 years and over) on the other hand, and in favor of teaching experience (1-5 years).

The table also showed statistically significant differences at the level of significance (0.05 = α) in the average of estimated attitudes of faculty members on the items of the study tool as a whole due to the age variable, as the value (P = 2.835), with a statistical significance of (0.000). To find out for the benefit of whom those differences (Scheffe) test for posterior comparisons was used, and a Table 10 shows that.

Table 10. Results of (Scheffe) test for posterior comparisons of the estimated attitudes of faculty members on the tool items as a whole, according to the "Age" variable

		Number of students in the class		
		Less than 35	From 35-45	More than 45
	Mean	2.88	2.79	2.29
Less than 35	2.88			
From 35-45	2.79	0.05		
More than 45	2.29	*0.85	0.15	

Table 10 showed that that there is a statistically significant difference at the level of (α= 0.05) between the mean of faculty members' attitudes on the study tool as a whole due to the Age variable from (less than 35 years old). And with those of (more than 45 years) age on the other hand and in favor of those with age (less than 35 years

old).

4.1 Discussion of the Results

The researcher attributed the result of the first question to the fact that the faculty members believe that the performance evaluation is not objective. especially when it comes from the students because of the low level of trust between them; and they cannot judge a faculty member as non-qualified and trained for the evaluation process although they were closer to it through lectures and through their interaction and it faces them academically, where it affects the personal relationships and supports the grades for subjects. The researcher also attributed this result to the fact that universities do not take into account the positive and negative incentives after the results of the performance appraisal process, and the performance appraisal process becomes annual routine and loses its luster with the passage of days. Universities do not bother doing interviews after the performance evaluation process to provide an opportunity for faculty members to discuss the evaluation results and determine the future goals between the university and a member employed in it. This result is consistent with the study of Razek (2006), which sees the student assessment and colleague came the last rank because of the lack of attention to it.

The researcher believes that female faculty members are seeking to support the scientific status in the field of specialization, which reflects a deep desire to prove oneself and have academic success. The difference between the sexes arising from the reservation and females resulting from the difference in socialization exercised by parents in the home and the educators at the school according to gender, since the childhood stage the parents' demands from females to be reservation and compliance with social standards. Females are more disciplined in the administrative matters relating to the process of improvement and development work, they are initiatives and they look at things more deeply than males who may tend to indifference sometimes. This result is consistent with the study of Razek (2006) that females are more interested in the evaluation process.

Regarding the attitudes of faculty members about performance evaluation which depends on the College variable, the researcher attributed these differences to the fact that faculty members at scientific faculties have more awareness and attention to the skills, and more teaching competencies from faculty members at other colleges. The theoretical courses at the scientific colleges may be more difficult and more abstract from the courses of the rest of the colleges. In addition, the use of English in the teaching of the courses at the faculties of science and engineering which requires students from these colleges a larger effort to understand these courses. Compared to the effort required of the humanitarian faculties, social sciences, which use the Arabic language in the teaching of courses which are almost too abandoned the complex mathematical methods. this would lead to a humanitarian college students estimated to be less than scientific college students estimates of the performance of faculty members, as the researcher attributed these differences to the faculty the humanitarian faculties of social Sciences members may not have the sufficient and serious process of valuation concerns. And the result of this study differs from the study of Jeffry (2002), there are differences in the responses of the students and in favor of humanitarian faculties.

The researcher believes that the lecturer got the difference because he is interested in assessing students, and achieves his desires, and gain satisfaction of being at the beginning of his career within the university; which reflected on the teaching methods and style of communication with students. Unlike the teachers who are at higher academic rank such as Professor and associate professor who reach a level that cemented his status within the university and they reject performance evaluation and its use in decision-making, to consider that students or others are not qualified to assess those in their level. The lower degree of faculty members, the more favorable to be assessed by others, the lecturer looks at the performance evaluation process with interest to see the weaknesses of his development in order to keep the position he reached. The result of this study differs with the study of Ajlouni (2011) that indicated no differences in academic rank.

For those with teaching experience less than 5 years, they gain a statistical significance who perceive the evaluation process. The researcher attributed this it will provide them with the weaknesses and they need to succeed and grow, excellence and speed of proving the presence, in addition to providing them with what is new in the global, they are looking for help to raise their level and improve their needs and increase their self-confidence. Faculty members with vast experience in their field do not look at performance appraisal because they exceeded this stage years ago. While individuals with limited experience, who are less than 5 years, still at work have less social interaction with old teachers. This makes them less consensus which reduces preference for evaluating colleagues, and that with the experience and the passage of time the faculty members acquire self-esteem and mastery of the art of scientific confidence and also there are no longer interested in colleagues' assessing. In addition, experienced teacher have good relations with co-workers, therefore, there is

no fear from his evaluation. On the other hand, those teachers who are with long years of experience are familiar with this type of assessment given that they are assessed through promotions committees that evaluated the quantitative and qualitative aspects of the research and scientific activity when promoted to the rank of professor or associate professor. The result of this study differs from the study of Ajlouni (2011), which pointed to the lack of differences in the experience of teaching.

The researcher believes that teachers with younger age (less than 35) by virtue of their closeness to the students, and form strong personal relationships with each other, care about performance evaluation by students more than others older who are proud of their knowledge. Since and they see that there is no one better than their experience, and that there is no benefit from this assessment, and that this process is a loss of prestige of the faculty member. And the result of this study differs from the study of Ajlouni (2011) that indicated no differences in age.

4.2 Recommendations

In light of the above findings, the researcher recommends:

1) Departments of universities have to give courses and establish awareness meetings for faculty members show the importance of students' assessment of the faculty member and the university's reliance on this assessment.
2) The assessment process must be in an orderly and generally accepted process in terms of target and time by a faculty member.
3) Not giving the student' evaluate the bulk of the fate of the faculty member's report, but the distribution of the assessment on several things such as activities, research, and others.
4) Keep types of assessment (peer-assessment, and management's assessment, self-assessment) seriously.
5) Conduct similar studies concerned with the process of performance assessment on other samples and universities.

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Rethinking What Is Entrepreneurship Education: A Macro Integrative Perspective

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Abstract

Research on entrepreneurship education (EE) has encountered confusing ontological and methodological issues, such as definitional controversy, gaps between research and practice, and lack of theoretical foundations. These are factors holding back the further development of the research and practice in this field. This paper presents a whole picture of EE by exploring key factors involved in EE programs such as objective, audience, content and method, and assessment with a macro integrative perspective. In this way, it points out the disintegrated micro perspectives employed in prior studies is the source of inadequate understanding of EE, which causes issues and confusions in present EE research. The macro integrative perspective offered by this paper provides an innovative way to tackle these issues and hence is expected to contribute to the further improvement of EE research and practice.

Keywords: entrepreneurship education (EE), EE research, macro integrative perspective, entrepreneurial age

1. Introduction

The research and practice of EE has achieved a height of prosperity worldwide in the 21st century. However, controversies and issues have been around it since its preliminary stage. To date there is no universally accepted definition of EE (Brockhaus, Hills, Klandt, & Welsch, 2001; Fayolle, 2010), although there has been consistent effort to define it. EE research seems to be stuck in a definition predicament. Meanwhile EE research has been criticized for lack of theoretical foundation (Fayolle，2013; Naia, Baptista, Januario, & Trigo, 2015), too many gaps existing between research and practice, and therefore being fragmented. All the issues centered around EE research point to a sole fact that we don't truly understand what is EE, which demands us to further contemplate the perspectives applied in previous studies on EE's definition. Perceptions on EE through micro lens just lead to context specified findings which have limited contribution to investigating what is EE. Then what is supposed to be the right angle that can help us secure a true cognition of EE? Given issues and limitations of past studies, it is time to revolutionize ways of investigation which we have been taking for granted (Fayolle, 2013). On one hand, the complex and heterogeneous nature of EE determines that it cannot simply be viewed as a compound of entrepreneurship and education instead investigation of its true meaning should be based on a broader perspective. On the other hand, the advent of the entrepreneurial age (Hebert & Link, 1989; Brockhaus et al., 2001) and the further development of the discipline of EE demand for a macro integrative perspective to integrate EE under the broad economic, political, social and cultural background.

Furthermore, from the stance of education, a review based on a macro integrative perspective of key components involved in EE training and programs leads to a finding that EE is becoming integrated into various aspects of society in addition to the economic realm. The whole picture of EE presented through the macro integrative perspective will help lead to a more concrete understanding of it, which also provides a theoretical ground for addressing the aforementioned issues in EE research and practice.

2. Issues Confronted with EE and Its Research

As a discipline EE is relatively new (Burg & Romme, 2014; Streeter, Kher, & Jaquette, 2011; Robinson & Josien, 2014). Although its prominent growth and positive outcomes are widely acknowledged (Gordon, Hamilton, Jack, 2012; Rauch & Hulsink, 2015; Ghina, Simatupang, & Gustomo, 2014; Kuckertz, 2013), EE and its research have

been surrounded with issues and controversies, for example, debate on whether entrepreneurship can be taught "has continued for many years" (Bliemel, 2014, p. 237), although Drucker declared that it's a discipline which can be learned (Kuratko, 2005), there are still controversies about whether it is teachable.

2.1 Definitional Controversy along with EE's Remarkable Development

There are still controversies over an explicit definition of EE (Lyons, Lynn, & Bhaird, 2015). Alain Fayolle and Heinz Klandt (2006) hold, "As the entrepreneurship concept itself is difficult to define, there is no strong agreement on what entrepreneurship education is and how it could be taught" (Fayolle & Klandt, 2006, p. 2). There have been lots of arguments upon what is entrepreneur or entrepreneurship since their emergence. Pioneers in this field such as R. Cantillon, J. A. Schumpeter (Kent, 1990) and Peter Drucker (Kuratko, 2005) have made valuable theoretical contribution toward what entrepreneur and entrepreneurship are. However there is still in lack of a generally acknowledged definition of entrepreneurship, which has been criticized as a source of inadequate research both in entrepreneurship and EE (Brockhaus et al., 2001; Fayolle, 2010). These definitional controversies over EE are starting to hold back progress in researches and practices of this field.

However, an undeniable fact is that for decade's entrepreneurship, although "not yet fully recognized, is on its way to being a well-established academic discipline" (Klandt, 2004, p. 293). Nowadays entrepreneurship education has achieved great progress worldwide (Naia et al., 2015; Fayolle, 2013), especially in the USA, whose universities "are generally regarded as the pioneers of academic entrepreneurship education" (Klandt & Volkmann, 2006, p. 195). According to Kuratko (2005):

Today, entrepreneurship education in U.S. has exploded to more than 2,200 courses at over 1,600 schools; 277 endowed positions; 44 refereed academic journals, mainstream management journals devoting more issues (some special issues) to entrepreneurship; and over 100 established and funded centers.

2.2 Issues Confronted with EE Research

Beside controversies researches in this field have been frequently perplexed by other issues which are urgent to be addressed (Fayolle, 2013; Naia et al., 2015).

First, EE research and teaching of entrepreneurship are frequently complained for gaps between theory and practice. Gaps between EE research and practice are drawing increasing attention among researchers (Fayolle, 2013; Naia et al., 2015; Morris, 2014; Steffens, 2014). There are gaps between EE research and real issues entrepreneurs and entrepreneurial activities encounter. Ana Naia et al. (2015) found, "There seems to be a gap in the literature on entrepreneurship education that prevents it from making stronger contributions towards practice" (Naia et al., 2015, p. 111); according to Michael H. Morris, a sizable gap exists between the growing demand for EE and our understanding of how to best approach the teaching and learning of entrepreneurship (Morris, 2014); there are also discrepancies between teaching of entrepreneurship and what entrepreneurs and entrepreneurial activities are truly concerned with. Edelman, Manolova, and Bruch "have highlighted the existence of a gap between what we teach in entrepreneurship and what entrepreneurs do" (as cited in Fayolle, 2013, p. 695).

Second, lack of theoretical foundations is another major concern in current EE research. According to Naia et al. (2015) "Theory-building and its role in the advance of entrepreneurship education has been a longstanding concern in entrepreneurship education research" (Naia et al., 2015, p. 111). Their studies on existing literature in 2000s detect problems in EE research, for instance, "poor theoretical frameworks", "absence of theory-building from case studies", and "lack of a metaparadigm perspective" (Naia et al., 2015, p. 131); "lack of theory" together with "fragmentation", "lack of critical approach", and "lack of legitimacy" are the four major limitations in EE research summarized by Fayolle (2013, p. 697). These researchers all find the absence of a theoretical framework and foundation in EE research fails to provide an overall perspective on the practice of EE. This framework is supposed to be fully based on the characteristics of the discipline of EE instead of a miscellaneous collection of borrowed theories from other fields, for instance, social cognitive theory and theory of planned behavior (Winkler, 2013; Lortie & Castogiovanni, 2015). Although the application of theories of other fields contributes to some valuable insights and results, these contributions are limited and the whole picture of EE research remains fragmented. Actually *fragmented* or *fragmentation* are frequently mentioned in literature as a result of a lack of theoretical frameworks for EE research (Fayolle, 2013; Ghina et al., 2013; Winkler, 2013).

3. Reflection on the Angle of Perception of EE

It is evident that the definitional controversy has caught intensive attention from EE researchers and practitioners. It exposes the fact that EE is not truly understood and it proves to be a primary cause for other controversies and issues such as research gaps, fragmentation, absence of theoretical foundation and even skepticism towards

legitimacy of EE (Fayolle, 2013). Then what is on the way of a true understanding of EE? In 2013, Alain Fayolle began his questioning upon the rationality of prior angles employed in EE research, and what he suggested is thought-provoking:

In view of these issues and challenges, I would suggest that, for the future of EE…we need to reflect upon our practices and take a more critical stance, breaking away from the far too common 'taken for granted position'(Fayolle, 2013, p. 693).

3.1 The New Era's Call for a Revolution in Research Stances

To better comprehend the importance of a right angle of perception of a real understanding of EE, we'd better first briefly review changes in the ways of interpretation of entrepreneurship. At the very beginning entrepreneurship was viewed as a concept related to ventures and economic growth by economists such as Schumpeter and Gunderson (Kent, 1990). Now the world is different from which those renowned economists lived in, and approaches to explaining entrepreneurship have therefore shifted from the traditional economic stance to a modern broader one. Some researchers hold that entrepreneurship not only refers to starting up businesses but also it defines a spirit of proactively taking risks and seeking opportunities (Kuratko, 2005); some think it can be viewed as "a matter of culture (institutional point of view) or a state of mind" (individual point of view), it is also "a matter of behaviours" or "specific situations" (Fayolle & Klandt, 2006, p. 2). Although the persistent efforts by entrepreneurship researchers have not yet resulted in reaching a consensus on an universal definition of it (Brockhaus et al., 2001), it is noteworthy that ways of perception of this notion has transcended beyond socio-economic stance toward a more holistic direction, which is leading a once fragmented entrepreneurship research ahead as a legitimate area of academic inquiry to a mature and systematic direction (Acs & Audretsch, 2010; Busenitz, 2014).

Now EE research is confronted with the same bewilderment of definition problem as that of entrepreneurship. EE has been defined by many scholars, yet disagreement still remains about its explicit meaning (Lyons & Lynn, 2015; Fayolle & Klandt, 2006). Although the uncertainty of such concepts as entrepreneur and entrepreneurship makes it an even complicated task to get an explicit definition of EE, it prospers worldwide and now is arguably a legitimate and critical discipline. According to Robert Tonstadt "a new era of entrepreneurial education" (as cited in Kent, 1990, p.71) is arriving. However, the inadequate understanding of EE and fragmented EE research without a theoretical foundation are undermining EE's contribution to the entrepreneurial era. Studies on EE theoretical frameworks or practical methods are often context-specific (Naia et al., 2015), and researches of theory building and testing based on single paradigms are not conducive to more complete cognition (Naia et al., 2015).

3.2 The Need for a Shift from Micro to Macro Perspective

Given the existing problems confronted with EE research, it is imperative that we should meditate again upon what we call the discipline of EE, but undoubtedly with a new critical lens. There are too many micro level data, content-specific cases, and individual level studies that regard EE as an academic discipline based on the combination of knowledge from entrepreneurship and education (Naia et al., 2015; Fayolle, 2013). Static and disintegrative lens focusing on individual cases and groups of participants isolate EE research from the heterogeneous background in which EE is embedded, which is destined to result in more gaps, disconnections and fragmentations. The widely applied micro angles, such as socio-economic perspective, prove to be both blesses and curses for the EE research, whose context specific findings do bring some practical references to the development of EE, but they have resulted in great limitations to the further development of EE, too, for example, Martin Lackeus (2015) states that "the emphasis on economic effects has so far hampered a widespread adoption of entrepreneurial education in the remaining parts of the educational system" (Lackeus, 2015, p. 18). It is evident that EE researches based on a micro perspective can't meet the need for "a unifying theoretical framework that can be universally applied" (Winkler, 2013, p.71-73) in today's entrepreneurial age (Brockhaus et al, 2001).

It is necessary for the angle of perception to change into a holistic and integrative direction to better define EE, to build a cohesive theoretical framework, and to bridge disconnections and gaps in EE research and practice (Fayolle, 2013). A macro integrative perspective is the key to define EE, to address issues of it, and to steer it to the entrepreneurial era.

4. The Internal Demand of EE—A Macro Integrative Perspective

The pursuit of knowledge of nature, man, and society has been an essential task for people including philosophers for a long time. Ideas and theories of the great minds in the West from Socrates and Plato to Hegel

and Feuerbach have inspired us to apply resourceful perspectives to observe the ever changing world. In the East works of ancient philosophers, *I Ching* and *Tao Te Ching*, for example, advocate a harmonious integrity among people, nature and society. Although philosophical perspectives on nature and human society diverse whether it is in the east or west, it is clear that the integrity among nature, man and society has gained wide acknowledgement among people in the past and present. Nowadays modern high technology, transit communications and transportations make the world become a global village, and different aspects of the world are becoming increasingly interrelated. To better understand and adapt to the ever changing modern world, it is necessary for people to view the world with a broad dynamic and an integrative horizon.

4.1 A Macro Integrative Perspective: The Demand of Education in the Entrepreneurial Age

Education as an important aspect of human society and culture has undergone substantial changes as well. Take history of education in the US for example, from schools in families to those in communities, from those exclusively for white boys to those including girls and blacks, from elementary to university, American education system has witnessed a change from isolation to openness, from basic literacy training to holistic education. The development process of education reveals its important role in serving as a bridge between knowledge and human society, a principle inherent in education that still persists even under the increasingly sophisticated circumstances of modern society. With the advent of knowledge economy and globalization, the role of education serving as a driver to generate knowledge into economic growth becomes increasingly evident and crucial. Meanwhile Economic factors play more and more important role in changing educational objectives, curricula, and pedagogies. Under this circumstance the link between education and economy has been strengthened unprecedentedly. In the entrepreneurial age today (Brockhaus et al., 2001), the remarkable growth of EE has exhibited a tremendous demand for education to promote entrepreneurship. However, the inherent tie between education and society as well as culture should by no means be limited to educational effects on economic growth which has been considered of pivotal importance in EE. The encompassing nature of EE determines it should be viewed as a holistic and integrative process (Ray, 1990) in which the educational process of EE interweaves with factors in economy, politics, society and culture. The study of EE's definition and lens for EE research should be based on a philosophy which overviews EE as an integrated part of society instead of a discipline concerning just business and economy. A macro integrative perspective is consistent with the internal demand of EE as a discipline of education.

5. A Macro Integrative Perspective on What is EE

The discussion of components of EE programs usually covers aspects such as: objective or goal (Fayolle, 2013; Kuckertz, 2013; Mwasalwiba, 2010); audience (Fayolle, 2013; Kuckertz, 2013); content and method (Fayolle, 2013; Kuckertz, 2013; Kozlinska, 2011; Maritz & Brown, 2013); assessment (Fayolle, 2013; Maritz & Brown, 2013; Mwasalwiba, 2010). Although the criteria for identification of these factors vary with specific programs under the micro perspective, investigations of the components on the basis of a macro integrative perspective will present us a more comprehensive picture of EE, which is beyond the contextual and individual case of EE program, and hence is conducive to the construction of a real understanding of EE. In the following paragraphs a panoramic view of EE will be presented based on a macro integrative perspective on these key factors EE is concerned with.

5.1 EE's Objective or Goal

The objective or goal of EE under a macro lens includes both narrow and wide views (Nasr & Boujelbene, 2014). There still remains confusion about what EE's objective should be (Maritz & Brown, 2013). At the very early stage of entrepreneurship it seemed a word solely regarding to economic growth (Carland, Hoy, & Boulton et al., 1984; Kent, 1990). Similarly, economic motivation for new venture creation has been at the center of traditional EE objectives. Although it is acknowledged not the same as business management education, it was primarily as "courses in small business management" (Kent, p.9) at the very beginning. At the didactical level, EE is expected to enhance participants' temperament and competency for business creation related activities, for example self-confidence, capability of opportunity detection and venture operation, as well as interpersonal communication skills.

With the goal of teaching and learning skills of initiating new businesses or managing existing businesses remains at the center, modern EE objectives, however, have evolved into a broader sense. Take EE at the university level for example, to cultivate an entrepreneurial mindset or spirit in university students is a crucial goal that EE should meet in a globalized knowledge world (Thorp & Goldstein, 2010; Zhao, 2012). The mindset or spirit is not only concerned with venture starting and revenues but also an engagement with the benefit of society, which can be witnessed through social entrepreneurial activities on some university campuses, for

instance, in Stanford, a top entrepreneurial university in the US. Social entrepreneurship is an organic part of innovation and entrepreneurship in Stanford. There's a magazine named *Stanford Social Innovation Review*, aiming to bring changes to the world through integrating social entrepreneurial spirit into academic theory and practice (Stanford University, n.d.). Besides there are many programs for social entrepreneurship (Stanford Graduate School of Business, n.d.), and there social innovation and social venture are discussed as naturally as technological innovation and business venture. In addition, it is widely acknowledged that entrepreneurs' values greatly affect the businesses they own. Entrepreneurs identifying with the value of serving the society will bring a spirit of doing good deed for society into their business ethics, which is believed to be closely associated with their business economic profits (Besser, 2012; Vranceanu, 2014). Therefore the objective of EE under a macro perspective should be directed by a principle to integrate enhancing entrepreneurial competence with fostering entrepreneurs' values of doing good deed for society. This objective is not only applicable to the practice of specific programs and cases and effective to their short-term outcomes but it contributes to the long-term impact of EE programs and trainings (Nasr & Boujelbene, 2014).

5.2 EE's Audience

At whom EE is supposed to target? Although entrepreneurship courses and programs were predominantly for business students in the early years and have achieved a height of maturity in American business schools, specifically designed EE courses and programs for non-business students have also grown tremendously (Katz, 2003; Kuratko, 2005). America has entered "a new era of entrepreneurial education" (Ronstadt as cited in Kent, 1990, p. 71). Early in 1985, in an address to the nation President Reagan applied "Age of the Entrepreneur" to envisage the US future (Hebert & Link, 1989, p. 40). James O. Fiet (2001) also claimed that "The United States is entering an important new era of entrepreneurship" (as cited in Brockhaus et al., 2001, p. 78). The passion for entrepreneurial activity has been at a height. Donald F. Kuratko's studies found that "approximately one new firm with employees is established every year for every 300 adults in the U.S. … Substantially, more—1 in 12—are involved in trying to launch a new firm" (Kuratko, 2005, p. 578). Under this circumstance, EE at the collegiate level has achieved tremendous development. Gary Rabbior (1990) stated that to judge who are to be likely candidates is pointless, and we should "assign the potential for entrepreneurship to every young person" (as cited in Kent, 1990, p. 54). Nowadays the expansion of EE has swept from higher education to secondary and even the entire K-12 school system (Kent, 1990; Johansen & Schanke, 2013). However, it seems that EE not only involves every student in the educational system from K-12 through collegiate level but it appeals to workers, employees, and even entrepreneurs themselves. Actually in America programs offered by universities "serve many different audiences"(Kent, 1990, p.9), including undergraduate and graduate students in colleges and universities, as well as existing and prospective entrepreneurs who are not students on regular enrollment; teachers at all levels in the educational system are also offered training by many universities to help them teach entrepreneurship; there are even programs designed by universities and colleges for those whose work is supposed to closely related to entrepreneurs, for instance, "bankers, lawyers, consultants, government officials and Certified Public Accountants (Kent, 1990, p.9)". With the world entering an entrepreneurial age it seems that everyone can be the potential audience of EE regardless of the sex, career, nationality and ethnicity.

5.3 EE's Content and Method

Content and method of EE are usually referred to as questions of what to teach and how to teach (Mwasalwiba, 2010; Solomon, 2007; Fayolle, 2013). In some research the instructor is also considered a factor in the observation of this part, which is usually referred to as the question of who to teach (Fayolle, 2013; Kuckertz, 2013).

As the forefront of EE there are in the US various courses and programs offered to teach entrepreneurship. In some degree entrepreneurial and managerial courses, for example, microfinance, economic development, and small business management overlap, however, entrepreneurship courses have their peculiar characteristics. They are often offered in a multi-disciplinary setting, for example indigenous business organization courses in sociology and high-tech entrepreneurship in engineering schools (Katz, 2003). American entrepreneurial universities offer various interdisciplinary courses for EE participants. The Academy for Innovation & Entrepreneurship of University of Maryland for example provides 141 I&E courses designed and taught by a multidisciplinary team of faculty, dealing with tough problems in various fields and disciplines including arts and humanities, as well as behavioral and social sciences(University of Maryland, n.d.). Besides, the importance of liberal arts education in EE has gained increasing approval in theory and practice (Ray, 1990). Stanford values a culture to foster a broad liberal arts foundation for its undergraduate education (Stanford University, n.d.), which has an inseparable relation to its outstanding status as the nation's top entrepreneurial university. More important than academic and theoretical training, the content of EE training and programs is becoming

increasingly competence oriented, which aims at enhancing multi-dimensional competencies and soft skills in various fields, such as venture financing, corporate entrepreneurship, and entrepreneurial strategies (Kuratko, 2005), as well as specific skills in negotiation, leadership (Kuckertz, 2013; Ulvenblad, Berggren, & Winborg, 2013) and "deal-making" skill (Ronstadt as cited in Kent, 1990, p.79). Beside entrepreneurial competences, EE programs start to be engaged in community outreach activities as EE is considered a component of social support system (Mwasalwiba, 2010). Furthermore, as ethics in business has gained rapidly increasing attention (Kent, 1990; Kuratko, 2005; Tesfayohannes & Driscoll, 2010), it is also supposed to be an integrated part in the EE curriculum.

EE pedagogy is changing (Kuratko, 2005; Hägg, 2016). Teaching paradigm has shifted from focus on instructors' how to teach to participants' what to do (Fayolle & Klandt, 2006; Brockhaus et al., 2001; Hägg, 2016). Traditional EE teaching method, mainly in the form of lecture delivery has been replaced by more "dynamic pedagogy" in "blended, online and flipped approaches" (Maritz, Koch & Schmidt, 2016, p.21). The traditional passive teaching which focuses on knowledge imparting has been substituted for active competence-based experiential learning (Lans & Hulsink, 2008; Kozlinska, 2011; Kuckertz, 2013; Rahman & Day, 2015) and action learning(Maritz & Brown, 2013). Examples of experiential learning tools are: business plans, case studies, action researches, behavioral simulations (Kuratko, 2005; Kozlinska, 2011), and internship (Kourisky as cited in Kent, 1990) to name a few. Beside the pedagogical change, the scenario for EE also takes on a new look. The EE practice has extended from classroom and on-campus environment to real business world settings (Kuratko, 2005; Maritz & Brown, 2013).

With the transformation of EE teaching paradigm, the focus has shifted from instructors to learners. There is rarely any systematic research on the problem of who to teach EE, and whether EE educators should possess "prior entrepreneurial expertise" (Fayolle, 2013, p. 695). However, a shortage of qualified EE staff has become a worldwide concern, which is adversely restricting EE's development (Kuckertz, 2013; Katz, 2003). At present, faculties in universities and colleges take major responsibilities to teach entrepreneurship, in some cases, in forms of cross discipline faculty teams, for example the case of UMD. Some researchers find it's effective to involve entrepreneurs as role models into EE training and programs (Rahman & Day, 2015). To get entrepreneurs involved in presentations and interviews on campus or providing students' internship opportunities off campus has been perceived by universities and colleges as an effective way to enhance entrepreneurship teaching and learning. In this sense, qualified candidates of EE instructors are not limited to faculties in universities and colleges, instead they should also include entrepreneurs or anyone who can provide EE participants knowledge and skill related to entrepreneurship.

5.4 EE's Assessment

The assessment of EE is closely related to program objectives, contents, and pedagogies (Maritz & Brown, 2013), and is a difficult and complicated process (Fayolle & Degeorge, 2006). There is much disagreement on the assessment of EE programs and courses (Lyons et al., 2015). The particular criteria and measures for outcomes and impacts of EE programs vary with the different entrepreneurship training contents, as well as different objectives set by different stakeholders (Fayolle & Klandt, 2006). The outcomes and effects are usually multi-dimensional and some of them, for example, venture creation, "cannot possibly be measured during or immediately after training (Fayolle & Degeorge, cited in Fayolle & Klandt, 2006, p. 75)". Although the micro perspectives, for example，the trait theory, planned behavior theory and social cognitive lenses are commonly applied in measuring EE outcomes at the individual level (Lyons et al., 2015), there lacks a systematic perspective for the assessment of EE to construct more cohesive analysis at a macro level (Lyons et al., 2015). The EE training programs that are associated with practices and behaviors at the micro level do have macro level implications (O'Connor, 2013) and contain objectives beyond economic factors (Maritz & Brown, 2013). Under this circumstance, the assessment of EE programs whether at the institutional or individual level should be directed by a broad and integrative stance.

It is evident that discussion of these components involved in EE programs is widely spread, however, the study of "the dynamic relationships and integration of the components" of EE programs has been considered as "a black box" (Maritz and Brown, 2013, p.235), an unknown and key part in discovering the secret of EE. Under this macro integrative perspective, these components are all interrelated and are integrated parts of EE within the broad economic, political, social, cultural and global circumstances of the present entrepreneurial age.

6. Conclusion

There have been lots of studies into what is EE and how to promote EE's practice (Kent, 1990; Fayolle, 2010; Fayolle & Klandt, 2006; Brockhaus et al., 2001). However, EE's development has been confronted with

definitional controversies, research gaps and lack of theoretical foundations, which have sustained for quite a long time and have begun to hold back its further progress. The widely applied micro angles, such as socio-economic perspective, prove to be both blesses and curses for the EE research, whose context specific findings do bring some practical references to the development of EE but great limitations have been exposed too. The entrepreneurial age calls for a methodological revolution in both EE research and practice.

Through an examination based on a macro integrative perspective on key factors involved in EE this study results in a bold finding that EE is becoming integrated into various aspects of society in addition to the economic realm. The panoramic view of what is EE presented through this perspective is challenging our traditional cognition about discipline with a set of new phenomena: it aims to teach knowledge and skills not only necessary for business but for life, as well as the mindset to serve society; it involves nearly people of all ages in all nations and of all walks of life as audiences, instructors, entrepreneurs and policy makers; besides business subjects it integrates courses of science, arts and ethics into entrepreneurial curricula, and it brings a revolution in pedagogy by linking teaching and learning with working and living; it also brings a revolution to the traditional understanding of the role of universities as institutions for intellectual heritage. The ivory tower now is embracing teaching and learning of entrepreneurship (Fayolle & Klandt, 2006). Under this macro integrative perspective EE is viewed as a discipline integrated with the process of economic activities, government policy making, social welfare improvement, and cultural enhancement, encompassing wide participation by various groups of people and institutions, aiming to empower participants entrepreneurial ability and mindset for multicultural and globalized setting. The whole picture of EE presented through the macro integrative perspective lead to a more concrete and holistic understanding of EE, which also provides an ontological ground to the addressing of aforementioned issues to bridge gaps in EE research and practice, and to build theoretical foundations for the discipline. Only when EE research makes breakthrough in the understanding of EE itself can significant improvement be made in EE practice.

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The Effect of Peer Assessment on the Evaluation Process of Students

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Abstract

This study aims at finding out the effect of peer assessment on the evaluation process of students. The hypothesis underlying this study is that assessment is an integral part of the learning process, which should play an important role in the educational model. The current study will emphasize the importance of using peer assessment as a tool to engage students in the evaluation process, clarify the role of peer assessment in promoting student learning, diversify the scope of the evaluation through the frameworks of theory and methodology to get to understand the uses and limitations of peer assessment as a tool for assessment, and discuss the goals and benefits that can be achieved by the students from practicing peer assessment in accordance with scientific standards and bases, which emphasize active participation of the students in their learning and responsibility. Additionally, this study will check the credibility of peer assessments as a suitable tool in the assessment process. Findings show that there is a statistically significant relationship between the assessment of peers to each other, as well as between peer assessment and teacher assessment.

Keywords: peer assessment, evaluation process, assessment tool, credibility of peer review

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1. Introduction

Focus on learning and learners are now a central theme in the educational policies and practices. While there are still huge needs for achieving higher grades as measured in accordance with the evaluation criteria, benefiting of students from their own learning, and involving them in assessing their own learning and the ability to make a decision (Deakin-Crick et al., 2005). Peer assessment is an important element of designing learning environments in order for them to become more participatory among students, which can achieve concepts such as learning between peers, collaborative learning, and problem-solving based learning (Kollar & Fisher, 2010; Tan & Keat, 2005).

Peer assessment in the education field has been achieved at an increasing rate in recent decades, using it as an assessment tool (Gielen et al., 2011). It represents a system for learning built on the basis of that learning directed around the learner with the other in depending on effective learning, which focuses on the full integration of the student in the process of collaborative learning with peers under the supervision of the teacher (Thomas et al., 2011). Peer assessment is used to enhance learning as an effective way to increase motivation for students by engaging them in the evaluation process which has received attention in recent years from a number of international universities (Rimer, 2007), and to encourage peers to help each other to master the topic of learning.

Peer assessment also aims to describe the assessment processes that foster future learning and mitigate difficulties that are expected to occur. It also aims to transform students from mere receivers of knowledge from teachers to memorize and recall on tests to active learners and participants in learning and evaluation process, interact, search and explore, and reach to relationships between objects in order to generate new knowledge characterized by critical thinking and creativity. Peer assessment also helps to ensure a quality education for all

students (Rogers & Threatt, 2000) and develop learner's self-direction as one of the quality measures in education (Papinczak et al., 2005).

Sluijsmans et al. (1998) anticipated that the design of the curriculum should also be linked to designing assessment mechanisms. Curriculum designers should integrate assessment forms, such as peer-to-peer assessment, in order to be a part of the student-centered change process. This change requires a transformation of focus from summative assessment to formative one, and from external to internal assessment, and also from assessing products to assessing the process as well.

Assessment procedures provided to students to assess their competencies by teachers test their content knowledge instead of focusing on areas such as problem solving communication and critical thinking skills, teamwork, and respect others. These competencies are not assessed easily by the traditional forms of content-based measurements of knowledge (Lew et al., 2008). Thus, problem-solving based peer and learning assessments have received an increasing attention in the field of education. The European Commission of Higher Education emphasized the importance of focusing on peer assessment skills as a new perspective where student assessment shifts from traditional testing to giving students an active role in the learning and assessment processes (Lladó et al., 2014).

The evolving needs of the global labor market have promoted the need to train students to take responsibility for their learning and personal and professional continuous development. Problem-solving based learning recommended problem-based learning as an effective methodology for giving the students this responsibility (Kollar & Fisher, 2010; Wesson, 2014; Spiller, 2009). One of the objectives of this study is to investigate the role of peer assessment in learning, considering assessment as an integral part of the learning process, and reaching to an understanding of the uses and limits of peer assessment as an assessment tool for learning outcomes, which emphasizes active participation of students in their learning, responsibility of the learner, measurement of skills of metacognition, and applying a collaborative model of dialogue for education and learning.

2. Review of Literature

Savin-Baden (2004) claims that assessment is one of the most controversial topics in problem-based learning. Students often learn through interaction with the group, and they are often not rewarded in classrooms in spite of the effort and time they spend on their work, and therefore that do not translate into academic degrees (Tan & Keat, 2005). It may be understood what has been written about peer assessment as a tool for measurement and evaluation in problem-based learning, that it falls into three categories when used as a tool in terms of learning, promotion, and authority. The common factor of these three areas is that there is a degree of student participation, and this participation takes different forms and levels (Tan & Keat, 2005).

Peer assessment is the tool with which students evaluate the quality or quantity of their peers' performance, and that stimulates students to reflect, discuss and collaborate (Strijbos & Sluijsmans, 2010).It requires students to make notes or scores or both about their peers' product or performance based on standards of excellence for them. Students also participate in a determining those standards (Boud & Falchikov, 2007).

Spiller (2009) claims that peer assessment is a mutual process between students. The participation of students in commenting on the work of others increases their capacity for making intellectual choices and judgments, as well as the students receiving feedback from their peers helps them acquire a wide range of ideas about their work to promote and achieve development and improvement in their learning. Students' learning opportunities are less when they become passive recipients of assessments results. The future of learning requires the involvement of students in the learning and evaluation process, which reflects to improving results, both short and long-term, as well as learning in the future. (Thomas et al., 2011)

Landry et al. (2014) stress that there is a significant improvement in the performance of students after doing peer assessment on a cumulative basis, where the results showed the importance of using peer assessment as a tool for student-based learning, and that more than 90% of students either agreed or strongly agreed that peer assessment was a valuable learning experience.

Lladó et al. (2014) claim that students have a positive attitude toward peer-assessment methodology before and after its application. It stimulates student performance and facilitates the acquisition of learning at different levels. Lew et al. (2008) also noted in an exploratory study that students agree that peer assessment enables them to aid in the learning of their peers, that it was a fair way to evaluate them, and doesn't let personal relationships with peers influence their evaluations. Additionally, students perceive the process of peer assessment as a learning experience important to the evaluation process. Another study examined the connection between marks of students in higher education who have been evaluated for sustainable development with marks of peer

assessments as a way to measure the sincerity of peer assessment in the evaluation process. The results indicate that students, even those who did not have previous experience in assessing peers, were able to evaluate the work of their peers and make their judgments reasonably accurate in peer assessments (Kearney et al., 2015).

Falchikov and Goldfinch (2000) conducted a meta-analysis study of 48 studies aimed to compare peer assessment to teacher assessment. The results showed that many of these studies have confirmed the existence of some similarities between peer and teacher assessments. Sahin (2008) also claims that peer assessment is one of the alternative assessment methods, which trained students in higher education to use peer assessment as a tool of evaluation and compared it to teacher assessment. The results of the study revealed that peer assessment proved to be similar to teacher assessment, which can be considered as a recognized method and used effectively by teachers.

2.1 Honesty and Credibility of Peer Assessment

Honesty and credibility are measures of consistency of peer assessment, and the higher the consistency the less is diversity. Therefore, the task of improving peer assessment systems does not have a high level of honestly when grades are the only objective at the expense of other factors such as different reactions to a certain task, which needs investigating on how to improve students' perceptions about peer review criteria, and refrain from individual ratings that could lead to questioning the credibility of this assessment (Cho et al., 2006). Many studies confirm that the issues of honesty and credibility are the most difficult in student assessment (Elander, 2004; Rust et al., 2003), which requires formulation of evaluation criteria to reduce bias and errors in grading (Elander, 2004).

Among the many criticisms directed at peer assessment is the difficulty of achieving acceptable levels of honest and reliable assessment results, which requires peer assessment to be seen as a means to improve the learning process rather than a goal in itself. A study done by Marsh et al., (2008) confirmed the importance of establishing common standards to include populations from different backgrounds, as well as relevant external standards to confirm the genuineness of peer assessment results and test potential biasness by populations. Chang (2011) presented some effective methods that help promote the credibility of peer assessment results such as deep understanding of the purpose of evaluation, and the use promotion and diversity methods in the levels of the participants in evaluation. The difficulty of reaching to an agreement among populations may lead to poor peer assessment results, which requires a certain number of people to achieve a more acceptable credibility (Marsh et al., 2008).

Race (2001) argues that peers should be chosen at random because they are less likely to be biased, and can achieve more honest results. He also feels that the work between peers is more effective when each element of the work is evaluated in accordance with the evaluation criteria in order to achieve a high level of consistency. Cho & MacArthur (2010) confirm that those who receive feedback from peers improve their performance more than students who receive feedback from one peer, and this achieves a high level of reliability that requires a degree of agreement and consistency between the various assessments of peers per student, which represents a variable very important to increase the level of confidence in evaluation results (Elander, 2004).

2.2 Goals and Benefits of Peer Assessment

Tan and Keat (2005) study proved that there are many variables in peer assessment, and even if they mainly involve students to provide feedback to other students, there are still some reactions from peers containing some difficulties; this is widely recognized. Spiller (2009); Kollar & Fisher (2010) proved that students often have concerns about the evaluation processes, so it is not surprising that there is some hesitations or fears about showing their work to others, so they think that their peers are not qualified to assess their work, and that only teachers are assigned to the evaluation process. These concerns are diminished when the peer assessment activity is formative rather than summative, but there is ample evidence that peer assessment can be used reliably for summative work (Gielen & Wever, 2015; Lladó et al., 2014; University of Sussex US, 2015). However, this requires explanation of the purposes and advantages of peer assessment and feedback activity at the beginning.

Some studies argue that there is a concern that students may provide exaggerated perceptions, excessive, or underestimated perceptions in estimating the achievements of their peers. These concerns, from the perspective of measurement, indicate the increase in contrast ratio, which threatens the credibility of grades (Ross, 2006.). In an attempt to ensure a suitable environment for peer learning, Spiller (2009) argues that the introduction of grading in peer assessment might create another set of complex issues, such as if peers decide to give their peers the grades they deserved. These grades must be only one of a number of different grades awarded for a specific task or process. As the investigation into the implications of peer assessment on personal variables such as psychological health, interdependence, trust, and narcissism, and the effects of different types of feedback that

have some negative effects, need to be turned to have a positive impact on learning (Kollar & Fisher, 2010). That can be possible by formulating evaluation criteria to reduce bias and mistakes in grading (Elander, 2004).

Lutze-Mann (2015) and Ross (2006) presented a number of benefits for using peer assessment as a tool of assessment to evaluate learning:

1) Peer assessment provides consistent results across the evaluation criteria and tasks in short period of time.
2) Peer assessment gives information about student achievement that corresponds in part with the information resulting from the evaluation of teachers, as it leads to higher student achievement.
3) Peer assessment contributes in enhancing strengths through training students on how to evaluate their work.
4) It involves students in the learning process and developing their ability to think critically.
5) 5. Learning from of critical evaluation and feedback from others.
6) Developing social skills such as cooperative learning.

Spiller (2009) adds that participation of peers in assessment provides students with certain characteristics, including a number of features, such as:

- Promoting education.
- Promoting students' responsibility for their actions.
- Providing students with the skills to apply standards and criteria.
- Providing an amount of modeling.
- Involving students in judging their performance and their peers', which increases evaluation experience and benefiting from feedback.
- Decreasing depending on teachers and increasing independence in the evaluation process.

2.3 The Students' and Teachers' Roles in Preparing Peer Assessment Forms

Peer assessment as an assessment tool is more reflective of student performance, because group members spend a significant time in working with each other, and are, thus, in a good position to recognize and assess the efforts and contributions of their peers (Ghorpade & Lackritz, 2001). In a study conducted by Lladó et al. (2014) in a survey of students' views about their role and the role of teachers in the development of evaluation criteria, the students confirmed that they are more familiar with what is going on exactly when they perform peer assessment, which helps make work easier and makes the evaluation more convincing. The study also confirmed that there should be additional contribution from teachers to the evaluation criteria so students are able to interact and follow-up.

Lew et al. (2008) also confirmed in a survey on students' views about the use of peer assessment that it had helped in their learning, and that the process of peer assessment was a valuable learning experience done in an unbiased manner and tends to not involve personal relationships when considering the process of peer assessment. A study done by Sivan (2002) indicated in a survey of students who have applied peer assessment that they found it a suitable method for their learning, and it is seen as a good mechanism to develop critical thinking and learning from the work of others, and that it provides an opportunity to take responsibility and learn how to make decisions. The students also indicated that the use of peer assessment stimulates cooperation.

Thomas et al. (2011) confirmed that teachers should participate with their students in the assessment process and abandon their authority, and that there should be an exchange of authority and lead students to assess themselves. In order to activate the role of students in preparation of standards that will be the basis on which peer assessments are performed, it requires to debate about standards that help students to think about the activity to be evaluated, and present a feedback about the activities of peer assessment, by giving students opportunities in a number of aspects. (University of Sussex, USA, 2015):

- Applying of standards: assessment of someone else's work means understanding and applying classification standards, and that occurs the process of peer assessment to get a better understanding of the level expected of them by providing more peers to become more capable of assessing their own work.
- Learning from examples: seeing the examples of how to address other people for an assessment task or model samples and employ them to organize the work.
- Receiving Feedback: Feedback that the students give each other is likely to be different from teacher feedback. Students are likely to write their feedback in a different way and may have a clearer

understanding of what is really useful at that stage of the process, despite the fact that both should be related to the criteria.

Spiller (2009) argues that students become more able to gain confidence in peer assessment with practice and become more efficient when exchanging and discussing observations. Liua and Lib's (2014) study emphasize the importance of training on the skills of peer assessment before engaging in assessment activities and students reviewing learning concepts, and compare their assessments with teacher evaluation. The study concluded that training on in peer assessment leads to a decrease in contradictions between students' grading and the teacher's grading, providing the highest quality of observations of peers through peer assessment.

3. Method

3.1 Methodology

This study follows an evidentiary comparative method to prove the following hypotheses:

1) There are statistical significant differences between peer assessment among the organizational and academic skills.
2) There are no statistical significant differences between peer assessment and teacher assessment in each of the organizational and academic skills.
3) There is a statistical significant relationship between peer assessment and teacher assessment.

3.2 Sample

A purposive sample was chosen from the students of the Department of Psychology at King Saud University. It consists of 50 students during the second semester of the academic year 2015-2016.

3.3 Tools

3.3.1 Peer Assessment Template

To prepare a template for peer assessment, the researcher reviewed and analyzed theoretical literature and studies related to learning assessment to get to the appropriate form (Wesson, 2014; Kollar & Fisher, 2010). The first image was prepared to include two dimensions peer assessments: the first dimension includes organizational skills and consists of 5 tasks, and the second dimension includes academic skills and consists of 6 tasks.

3.3.1.1 Validity and Reliability

A-External Validity

The researcher checked the reliability of peer assessment template by showing it to 6 evaluators from faculty members in the Faculty of Education at King Saud University. After they have been provided with goals and aspects of the assessment, some modifications were made according to the evaluators' suggestions. The ratio of validity was more than 80%.

B-Internal Validity

The validity of each task of the peer assessment template was measured in each dimension. The measurement of the validity of dimensions was done through the application of the model template on a sample survey consisting of 33 student of the Department of Psychology, and thus Pearson's correlation coefficient was found. Table 1 presents the overall Pearson Correlation of each dimension task.

Table 1. The overall Pearson correlation of each dimension task

Correlation Coefficient	Academic Skills Tasks	Correlation Coefficient	Organizational skills Tasks
.886**	Descriptive Statistics	.737**	Leadership
.805**	Statistical Hypothesis	.587**	Listening
.619**	Interpretation of Statistical Significance	.786**	Feedback
.805**	Parametric Statistical methods	.732**	Cooperation
.868**	non-Parametric Statistical methods	.697**	Time Management
.868**	Use of Statistical Package of SPSS		

**Statically significant at α=0.01.

Table 1 shows that the overall correlation value of tasks of the organizational skills dimension has ranged between (0.587 - 0.786), and the overall correlation value of tasks of the academic skills dimension has ranged between (0.619-0.886), and all those correlations are statistically significant ($P < 0.01$) which indicates that the tasks are consistent in the measurement of the dimensions of the peer assessment template model.

C-Reliability

To find out the reliability of peer assessment template model, the internal consistency was measured using Cronbach's Alpha among the average peer assessment grade on each task of the assessment template tasks and the overall score for each dimension on a sample survey consisting of 33 students from the Department of Psychology.

Table 2. Consistency in Cronbach's Alpha

Cronbach's Alpha Coefficient	Standard
.745	Organizational Skills Dimension
.876	Academic skills Dimension
.865	Total score

Table 2 shows that Cronbach's Alpha coefficients have ranged between 0.745 and 0.876, which indicates that the peer assessment template model is suitably reliable.

3.3.1.2 Steps to Apply the Peer Assessment Template (Appendix)

Students were provided with the principles and guidelines when assessing peers according to the criteria defined in the peer assessment form during the activity. The model was applied according to the following steps:

1) The first activity in the peer assessment starts with performing a task, where working groups of female students A, B, C, D were formed to perform a certain task such as a solution to a statistical problem in one subject of statistical psychology course, or applying one of the themes provided by using the SPSS program, and any other tasks related to the requirements of the course. The performance of professional students' tasks who work on the same task are compared and observed during the performance of tasks that lead to the desired learning.

2) The second activity in peer assessment is to provide feedback. Each student discusses both her performance and her colleagues' in the group according to the criteria defined in the peer assessment form. The focus here is not only on the evaluation of the final product but also the process that reached to that result, while discussing the weaknesses in the performance of each student's task in an interactive manner between the peers.

3) The third activity in peer assessment is to receive feedback, where student A listens or reads the comments and evaluations of peers in the group about the performance of the tasks while giving opportunities to communicate about these observations. That is confirmed by some experimental studies that assess the positive impact on the success of peer assessment, which reflects on the cognitive level of the student.

4) The final activity in peer assessment is revision of tasks for each group of students according to the peer

assessment form based on the evaluations and the comments of peers to improve the performance of the tasks.

Thus the application of the strategy of peer assessment for all students in each group is done in accordance with the peer assessment form interchangeably to reach a final assessment and measure the average rating for each student on each of the peer assessment form skills.

This model allows for the grading systems ranging from 4 for very high to 1 for low, and therefore this model is an example of a final report, but it is also a tool to provide formative assessment feedback about what learners need to work on to progress learning.

3.3.1.3 How to Take Advantage of the Peer Assessment Form

Peer assessment may be a new concept for students, so academics need to take into account some considerations (Wesson, 2014), which consist of:

- Talking with the students as a group for they may not be familiar with the practice, expectations, and goals of peer assessment.
- Establishing of peer groups and the culture of working with peers early on before performing a task.
- Involving each student within the group in appropriate educational events.
- Helping students to access a list of items to assess the type of participation, and defining the evaluation criteria of the task with students, and providing the necessary tools.
- Clarifying examples of good practices and feedback of peer review, whether positive or negative.
- Organizing learning, providing incentives and recognition of progress made by students.
- Preparing a model of the task that includes adjustable criteria and methodology of assessment in light of educational task inputs.

4. Results and Discussion

This portion of the study is dedicated to present the results of the study.

Hypothesis#1: There are statistical significant differences between peer assessment among the organizational and academic skills.

To check this hypothesis, Kendall rank correlation coefficient was found among the skills of each dimension of the assessment model to verify the degree of concordance between peers in their assessment of skills. Table 3 presents the results of Kendall correlation matrix among peer assessment of organizational skills.

Table 3. Kendall correlation matrix among peer assessment of organizational skills

Total Score	Time Management	Cooperation	Feedback	Listening	Leadership	Organizational Skills
.589**	.202*	.467**	.288**	.127	1.000	Leadership
.305**	-.042	.182*	.174*	1.000		Listening
.580**	.248**	.278**	1.000			Feedback
.578**	.197*	1.000				Cooperation
.409**	1.000					Time Management
1.000	**					Total Score

**Statically significant at α=0.01.

*Statically significant at α= 0.05.

Table 3 illustrates the relationship between organizational skills in the peer assessment model, where it shows statistically significant relationships between leadership, feedback, and cooperation at (α=0.01); leadership and time management at (α=0.05); and between listening, feedback, cooperation was statistically significant at (α=0.05), as well as between feedback, cooperation, and time management was a statistically significant at (α=0.01), and between cooperation and time management was a statistically significant at (α=0.05). As well as a clear indication that the relationship between all the tasks with the total score at (α=0.01), while no statically significant relationship appeared between leadership and listening, as well as listening and time management, which shows a poor concordance between the members of the sample on those skills in peer assessment. However Table 4 presents the results of Kendall correlation matrix among peer assessment of the academic

skills.

Table 4. Kendall correlation matrix among peer assessment of academic skills

Total Score	Use of Statistical Package of SPSS	Non-Parametric Statistical methods	Parametric Statistical Methods	Interpretation of Statistical Significance	Statistical Hypotheses	Descriptive Statistics	Academic Skills Tasks
.652**	.446**	.605**	.343**	.580**	.483**	1.000	Descriptive Statistics
.609**	.227**	.506**	.534**	.495**	1.000		Statistical Hypotheses
.599**	.325**	.528**	.286**	1.000			Interpretation of Statistical Significance
.685**	.272**	.528**	1.000				Parametric statistical methods
.599**	.325**	1.000					Non-Parametric statistical methods
.516**	1.000						Use of Statistical Package of SPSS
1.000							Total Score

**Statically significant at α= 0.01.

Table 4 illustrates the relationship between academic skills in the peer assessment model, where it shows signs of statistical significance of at (α=0.01) between all dimensions (descriptive statistics, statistical hypotheses, interpretation of statistical significance, parametric statistical methods, non-parametric statistical methods, use of the statistical package of SPSS, as well as between all dimensions with a total score at (α=0.01).These results reflect that peer assessment is a suitable standard to be used as an assessment tool. On the other hand, these results are matched with each of Strijbos and Sluijsmans (2010) and Boud and Falchikov's (2007) studies which argue that peer assessment is a tool with which students evaluate the performance of their peers. Additionally, the University of Sussex's (2015) study confirms that students can actively participate in defining their peer assessment criteria's methods and quantity.

Hypothesis #2:There are no statistically significant differences between peer assessment and teacher assessment in each of the organizational and academic skills.

A significant difference was found between the average ratings of students and teacher assessments in each of the academic and organizational skills dimensions. Table 5 presents the averages and Standard Deviations of peer and teacher assessments for organizational and academic skills dimensions. On the other hand T. Test for Peer and Teacher Assessments for Organizational and Academic Skills Dimensions were calculated in order to prove or refuse this hypothesis. Table 6 presents T. Test for Peer and Teacher Assessments for Organizational and Academic Skills Dimensions (Paired Samples Test).

Table 5. Averages and standard deviations of peer and teacher assessments for organizational and academic skills dimensions

Std. Error Mean	Std. Deviation	N	Mean		
.03551	.25108	50	3.5197	**Organizational peer assessment**	**Pair 1**
.0354	.2504	50	3.517	**Organizational Teacher Assessment**	
.04913	.34739	50	3.3740	**Academic Peer Assessment**	**Pair 2**
.0509	.3599	50	3.392	**Academic Teacher Assessment**	

Table 6. T. Test for peer and teacher assessments for organizational and academic skills dimensions paired samples test

Sig. (2-tailed)	df	t	Paired Differences			
			Std. Error Mean	Std. Deviation	Mean	
.182	49	1.353	.00222	.01568	.00300	**Organizational Teacher Assessment-Peer Assessment**
.084	49	-1.765	.01039	.07346	-.01833	**Academic Teacher Assessment-Peer Assessment**

Tables 5 & 6 show T. test results for two related samples accepting the null hypothesis that there are no statistically significant differences between the peer assessment mean and the teacher assessment mean for organizational and academic skills dimensions. This result was consistent with Falchikov and Goldfinch's (2000) study which revealed using a meta-analysis that there is concordance between peer and teacher assessments, as well as Sahin's (2008) study which confirmed that peer assessments is constant with teacher assessments.

Hypothesis#3: There is a statistical significant relationship between peer assessments of academic skills and teacher assessments. To check this hypothesis, Pearson correlation coefficient was calculated among peer assessments of academic skills and teacher assessment. Table 7 presents the results of Pearson correlation coefficient among peer assessments of academic skills and teacher assessments.

Table 7. Pearson correlation coefficient among peer assessment of academic skills and teacher assessment

Correlations			
Teacher assessment	Peer assessment		
.507**	1	Pearson Correlation	
.000		Sig. (2-tailed)	Peer assessment
50	50	N	
1	.507**	Pearson Correlation	
	.000	Sig. (2-tailed)	Teacher assessment
50	50	N	

**Correlation is significant at α= 0.01 (2-tailed).

Table 7 shows the relationship between peer assessment and teacher assessment of academic skills. It shows statistically significant relationships at α=0.01, which indicates the positive relationship between peer and teacher assessments. This is confirmed by both Sahin (2008) and Falchikov and Goldfinch's (2000) studies that confirmed peer assessments consist with teacher assessment at a statistically significant level, and that grades received by students from teachers are met with consistent grades from their peers.

To sum up; the results of this study regarding peer assessment as a standard for evaluation have a similarity with the results of many studies that emphasized the importance of the students' participation in the process of evaluation (Boud & Falchikov, 2007; Spiller, 2009). Landry et al. (2014) and Lew et al. (2008) studies also confirmed the importance of using peer assessment as a tool for student-based learning, and that students agree

that peer assessment gives them the opportunity to learn and evaluate their peers. This study, in addition to Tan and Keat's (2005) study emphasized involving students in formulating evaluation criteria where they can rely on peer assessment as a valid tool for assessment in problem-based learning. The results also show a correlation between peer assessment and teacher assessment, which is consistent with the findings of Falchikov and Goldfinch (2000) and Sahin's (2008) studies, considering peer assessment a criterion that can be used in student assessment in addition to teacher assessment.

5. Conclusion

Peer assessment is an important part of the move towards more forms of participatory learning. There is a need to apply it in our schools and universities since it is more adaptable to modern developments in the assessment of learning outcomes. We, as educators, are required to encourage teachers to shed light on peer assessment as a strategy to assess students and on the need for more applications and experimental research in the future.

6. Recommendations

In light of the results of the current study, the researcher recommends that peer assessment can be used as an alternative to conventional methods in the evaluation of the learning process, which helps in the measurement of students' achievement from their peers' points of view. On the other hand, the researcher encourages other researchers to conduct comparative studies between self-assessment and peer assessment. Also, she inspires students to participate in preparing peer assessment models. Consequently, the students will be responsible about their own learning to achieve a personal and professional development.

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Appendix

Peer Assessment Template

Name: Year: Major: Cumulative grade average:

Dear student:

You are required to evaluate your fellow students in each dimension during your work in collaborative groups for Statistical Psychology course. Be objective in your evaluation. The average scores of all group members will be calculated from each evaluation sheet.

First: the organizational skills of the cooperative group

1. Leadership

Members	1 Does not take any responsibilities in leading, unproductive	2 Does not share the leadership role with members	3 Usually leads appropriately, and sometimes shares the leadership role	4 Leading appropriately, helping members, encouraging participation, suggesting solutions for problems, and sharing the leadership role.

2. Listening

Members	1 Never listens to others	2 Often listens to others' ideas	3 Usually listens to other members' ideas	4 Listens very carefully for other members' ideas

3. Feedback

Members	1 Does not give any comments for others' reactions, or helpful information	2 Often gives comments for others' reactions, but may be inappropriate or unhelpful	3 Appropriately comments on others' reactions	**4** **Gives comments for group members on their performance for the needed work and presents details about others' reactions appropriately**

4. Cooperation

Members	**1** **Treats others disrespectfully and does not engage in the work load**	2 Rarely treats others disrespectfully or rarely engages in the work load	3 Treats others respectfully and sometimes engages in the work load	**4** **Treats others respectfully and engages in the work load a lot**

5. Time management

Members	1 Does not finish given tasks on time and may lose work at the last moment	2 Often does not finish given taks on time	3 Usually finishes tasks on deadlines	**4** **Quick in finishing given tasks before deadlines**

Second: Academic skills of the cooperative group

1. Descriptive statistics skills

Member	**1** **Is not proficient in any central tendency and dispersion measures**	2 Proficient in some central tendency and dispersion measures	**3** **Proficient in many central tendency and dispersion measures**	**4** **Proficient in all applications of central tendency and dispersion measures**

2. Statistical Hypotheses

Members	**1** **Is not proficient on any skills of formulation and testing of statistical hypotheses**	**2** **Proficient in some skills of formulation and testing of statistical hypotheses**	**3** **Proficient in many skills of formulation and testing of statistical hypotheses**	**4** **Proficient in all skills of formulation and testing of statistical hypotheses**

3. Interpretation of statistical significance

Members	**1** **Cannot interpret statistical significance of statistical tests at all**	**2** **Hardly defines and interprets statistical significance of statistical tests**	**3** **Defines and interprets many statistical significances of statistical tests**	**4** **Strongly defines and interprets statistical significance of statistical tests**

4. Parametric statistical methods

Members	1 Not proficient in applying any parametric statistical methods at all	2 Proficient in little application skills of parametric statistical methods	3 Proficient in many skills of application of parametric statistical methods	4 Strongly proficient in applying parametric statistical methods

5. Non-Parametric statistical methods

Members	1 Not proficient in applying any non parametric statistical methods at all	2 Proficient in little application skills of non parametric statistical methods	3 Proficient in many application skills of non parametric statistical methods	4 Strongly proficient in applying non parametric statistical methods

6. Use of statistical analysis package of SPSS

Members	1 Not proficient in performing statistical analyses using SPSS at all	2 Proficient in little skills of performing statistical analyses using SPSS	3 Proficient in many skills of performing statistical analyses using SPSS	4 Strongly proficient in performing statistical analyses using SPSS

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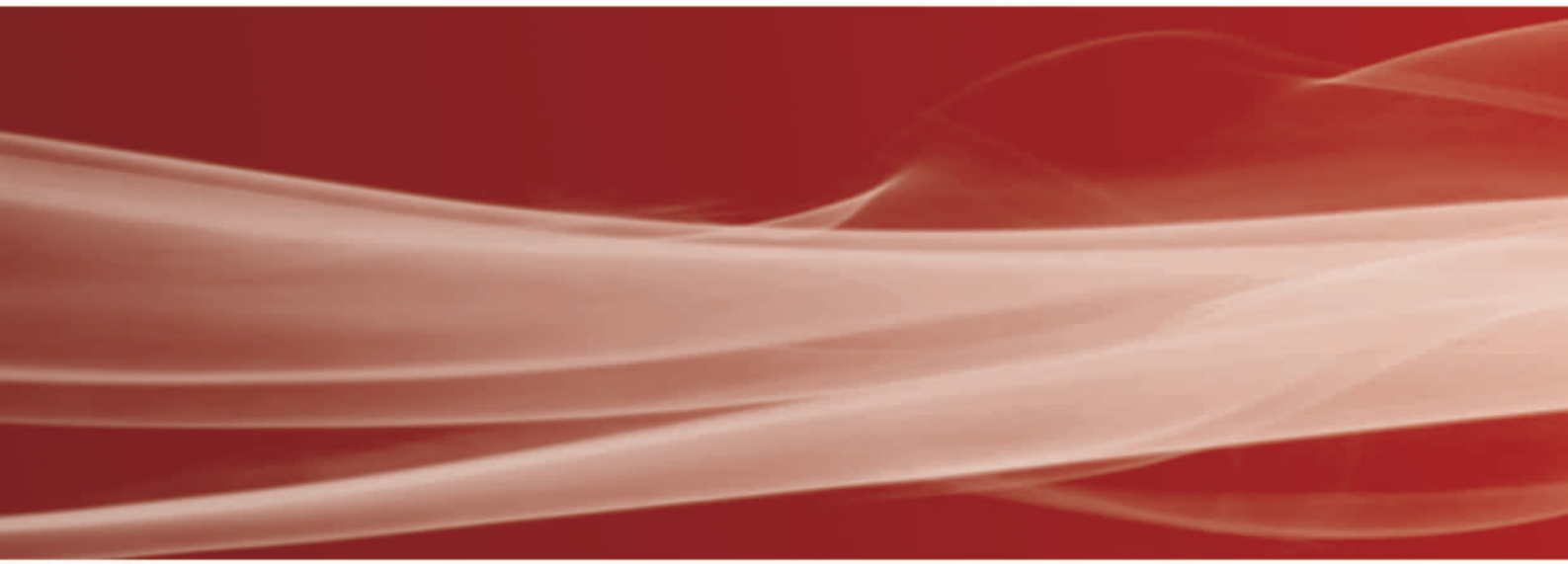

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