Communication in Learner-Centered Classrooms

An explorative study of the communication patterns in two classrooms

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Abstract

The purpose of the present study was to explore teachers’ orchestration of the class communication during teaching and to show whether the communication can be explained by frame factors. This study is a multiple case study of two physics teachers – one public and one private school teacher - using observational and interview data to illustrate and analyze their communication/talk process in the classroom. Implications are drawn for the way that they develop dialogue, which is further explored in regards to identified frame factors. Data collection was complemented with field notes and audio-recordings. The observations served for identifying the communication process. Interviews were used to develop the understanding of the teacher’s background and their beliefs on teaching for further strengthening the evidence for the findings. Transcripts were developed for detailed qualitative analysis of selected episodes of their communicative approaches.

Concepts and theories on the importance of the communication process for reflective thinking and a learner-centered classroom along with the frame factors theory aid the construction of the research and are linked to the findings.

The study provides insight on the frequency of elicitation of dialogic communication encouraging of reflective thought occurring at recurrent rate by the private school teacher during lecturing. The findings showed that frame factors steering the two teacher’s elicitation of communication were the curriculum, the teachers’ educational opportunities, external support and their ideologies. Findings suggest that reverting the teachers discourse fully towards an environment of dialogic communication encouraging of reflective thought - an aim of the Kosovo Curriculums - require additional sustenance and a profounder inquiry of the influence of teachers ideologies and how it can be diminished. Furthermore, an assessment of the curriculums implementation in classrooms and its limiting aspect of providing dialogically organized instruction is necessary along with assessment of the trainings offered to teachers.

Keywords: Communication process; Physics education; Secondary education; Frame factors; Observation study; Interview; Teaching
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<tr>
<td>B</td>
<td>Boy</td>
</tr>
<tr>
<td>BB</td>
<td>Blackboard</td>
</tr>
<tr>
<td>CASTL</td>
<td>Center for Advanced Study of Teaching and Learning</td>
</tr>
<tr>
<td>CIDA</td>
<td>Canadian International Development Agency</td>
</tr>
<tr>
<td>ECDL</td>
<td>European Computer License</td>
</tr>
<tr>
<td>FE</td>
<td>Faculty of Education</td>
</tr>
<tr>
<td>FMNS</td>
<td>Faculty of Mathematics and Natural Science</td>
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<tr>
<td>G</td>
<td>Girl</td>
</tr>
<tr>
<td>GER</td>
<td>Gross Enrollment Rates</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Development Product</td>
</tr>
<tr>
<td>HE</td>
<td>Higher Education</td>
</tr>
<tr>
<td>IA</td>
<td>Interactive/Authoritative</td>
</tr>
<tr>
<td>ICF</td>
<td>Informed Consent Form</td>
</tr>
<tr>
<td>ID</td>
<td>Interactive/Dialogic</td>
</tr>
<tr>
<td>KCF</td>
<td>Kosovo Curriculum Framework</td>
</tr>
<tr>
<td>KEDP</td>
<td>Kosovo Education Development Program</td>
</tr>
<tr>
<td>MEST</td>
<td>Ministry of Education, Science and Technology</td>
</tr>
<tr>
<td>NA</td>
<td>Non-interactive/Authoritative</td>
</tr>
<tr>
<td>ND</td>
<td>Non-interactive/Dialogic</td>
</tr>
<tr>
<td>NKCF</td>
<td>New Kosovo Curriculum Framework</td>
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<tr>
<td>Q/A</td>
<td>Questions/Answers</td>
</tr>
<tr>
<td>RAE</td>
<td>Roma, Ashkali, Egyptians</td>
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<tr>
<td>SFRY</td>
<td>Socialist Federal Republic of Yugoslavia</td>
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S  Several
T  Teacher
TSE  Teacher Self-Efficacy
UNDP  United Nations Development Program
UNMIK  United Nations Mission in Kosovo
UP  University of Prishtina
USAID  United States Agency International Development
USE  Upper Secondary Education
WB  White Board
Chapter I: Introduction

The role of dialogic communication is essential for students’ meaningful learning. Dialogic communication in the sense that students are provided adequate space to participate in the learning and teaching occurring in the classroom (Nystrand et al., 1997; McMahon, 2012). Profound number of studies have shown that an active learning environment wherein constructivist-teaching methods are applied contribute to the students’ reflective understanding of a process and in their meaning making, in difference to the mere intake of information associated with textbook oriented teacher-centered learning (Thomas, 2013; Roth & Roychoudhury, 1994; Harris & Cullen, 2008; Hansen, 2002). This latter form of learning where value is placed on recurrence and transmission is associated with routine thinking (Dewey, 1910). Reflective thinking however occurs through the transformation of knowledge, by adding to or changing a belief through the process of curiosity and conduct research to verify the belief that initially ignited the curiosity.

The teachers and the curriculum, encouraging of this latter process need to be accessible and play a significant role in this process (Dewey, 1916; Harris, Phillips & Penuel, 2012). Meaning unfolds through dialogic communication where discussion rather than recitation, which is associated with monologically organized instruction, occurs. Dialogically oriented instructions is more associated with conversations and shared participation in the communication process with the aim of transformation of the knowledge to a students’ understanding wherein the student has a role as a source (Nystrand, et al., 1997). Nonetheless, despite acknowledgement of the importance of dialogic communication for the elevation of students learning, monological communication is employed at a recurrent rate. Monologically organized instructions are interactive in that they acquire the students’ participation and engagement, but students are often selected by the teacher. The interaction and communication is further enfolded with recitation, rehearsal and repetition of factual knowledge. This was also found to be true with students’ understandings of science and in particular physics, which is besieged with problems (Thomas, 2013). Studies find that students’ view of physics is rather superficial, focused on content and often time plagued with a teaching and learning style that applies more textbook oriented methods (McMahon, 2012). Thomas (2013) found that with a change of the teaching methods towards learner-centered methods wherein reflective thinking was encouraged, students acquired a deeper learning of physics and a changed perspective.
Applying a student-centered teaching process requires an equally active and motivated teacher. A well-developed communication process is the groundwork for an active learning and teaching process. However, to enable this change, Lundgren (1972, 1977) argues that acknowledgment and understanding of the existence of the frame factors is essential. The frame factors theory holds that the teaching and learning process is steered by factors that limit the process, often times identified as the teachers or students themselves, the curriculum, the time, the classroom, the student-teacher ratio etc. The frame factors influence the teaching process, which in turn influences the learning outcome (Lundgren, 1972, 1977).

As elevation of the dialogic communication transpires, requirements from teachers shift towards meeting these criteria. These shifts in education towards a student centered active learning encouraging of a dialogic communication is also occurring in Kosovo. The Ministry of Education Science and Technology (MEST) aided with international and local institutions and organizations - is structuring countrywide systemic reforms supplemented with abundance of pre and in-service teacher trainings in an attempt at shifting the teaching from the traditional learning process to a more student centered active based learning (2001, 2010 & 2012). The main competencies to gain from the pre-university education is listed in the curriculums as communication and learning competencies, development of reflective, creative and critical thought along with competencies for life, civic and the working environment. Despite interventions, the education system in Kosovo and in particular the teaching process is still authoritative in nature and antagonized with resistance to change. This was found by studies conducted on the pre-service training and classroom teaching by Anderson & Breca (2005), Walker & Epp (2010), Spahiu, Korca & Matthies (2014), Saqipi, Asunta & Korpinen (2014), Tahirsylaj (2013) and Mehmeti (2014). Furthermore, an additional change that occurred with the system-wide reforms was the establishment of private schools to provide choice to the parents. However, literature review did not result in research conducted in relation to teaching in private schools in Kosovo.

Establishing a framework on the importance of dialogic communication, for the development of students learning, and in particular, its importance to science learning, in addition to the hitches of the reforms in Kosovo despite its aim to offer a learner-centered education, has driven the interest of this research. With this framework established and further elaborated in Chapter II: Literature Review and Conceptual Framework, the scope of this study is limited to two physics teachers’ elicitation of the communication process in classrooms through observations, and their perception on teaching and learning through interviews to
understand further its frame factors. The two teachers were chosen because they work as 12th grade physics teachers in two prominent, private and public, upper secondary schools in Prishtina, Kosovo. Despite the fact that one is public and one is private, they are both subject to the Kosovo Curriculums and are to implement learner-centered pedagogy, which further emphasizes dialogical organized instruction.

Background

The background will function as a clarification to the purpose of the study along with an outline of its structure, introducing as such, the aims and objectives, the significance of the study and the structure.

1.1. Aims and Objectives

The aim of the present study was to explore teachers’ orchestration of the class communication during teaching in the context of endorsing learner-centered instruction and to show whether the communication can be explained by frame factors. The study seeks to gain insight to the process of communication in the classrooms and the ways in which the teachers enable the development of the communication process. In establishing the grounds for conducting educational research, Johnson & Christensen (2013) argue that one needs to primarily identify a research topic, then a research problem, conduct a comprehensive literature review, followed by a statement of purpose and finally, the research questions. The research topic in this sense is the classroom communication, whereas the research problem is the teachers’ elicitation of the communication and the possible frame factors. The research questions followed from the aim is to find out,

1. What is the communication process like in these classrooms?
2. Moreover, can frame factors explain the communication process?

The objectives of the study derived from the main research questions and are used as scaffolds in obtaining the answers. The first objective is to explore the process of the communication in these two classrooms and establish whether they are monologically or dialogically organized. This objective will be achieved through observations and presented in a qualitative manner. The second objective will be to explore the teachers’ interpretation of the curriculum. The curriculum serving as a guideline to the teaching and learning process through its goals, the study will seek to ascertain how the teachers interpret the curriculum and its goals.
The third objective will be to obtain information on the teachers’ ideology, professional and academic background through interviews and explore whether they can explain the observed communication process. This will enable the option of viewing the teacher as a frame factor. Furthermore, it will serve to shed light on whether the teachers’ ideology is in alignment with learner-centered ones advocated by the state where dialogic communication is encouraged.

1.2. Limitations and Delimitations

The subjective character of the study poses as a limitation. While steps have been taken to increase the validity of the research, utilization of qualitative methods are still subject to interpretation thus limiting its validity. Additionally, as the sample size is small, the study does not serve as a representative of all 12th grade physics teachers in Kosovo, thus limiting its external validity. Utilization of qualitative methods furthermore ties the study to the probability of frontage behavior, where the participants show the researcher what they think they want to see (Johnson & Christensen, 2013).

The main limitation posed during the research was the schools and teachers accessibility. There is a current trend in Kosovo where teachers are recorded and recordings are sent to the news. This has placed fear in the teachers and schools. The public school teacher who initially expressed concern in regards to the researchers’ identity and the nature of the research also expressed this concern of the recordings being uploaded to YouTube. Thus, school access was best obtained through a trusting gatekeeper. This also adversely affected the possibility of expanding the research and affected the time. While the primary focus of this study is the teachers’ elicitation of the communication process and the possible contributing frame factors, an ideal addition would have been to obtain the students perception of the communication process. However, time and access disabled this. Considering the students are underage, the parents’ approval would have been necessary. This would have required additional time, which the thesis deadlines did not permit.

Desire to stay in focus with the teachers’ development of the communication patterns results in the delimitation of gender and minority issues. While the findings led to gender as an issue and led to suggestions for further research, great focus was not placed on the issue. An additional delimitation is the socioeconomic background of the teachers. Access to public school teachers’ salaries can be gained through institutional documents but the private school
teachers’ salaries are not easily accessible, and due to the nature of its sensitivity exclusion of that, information was opted for.

Another delimitation is assessment. While the teachers did bring up the methods of student assessment - mentioned in the findings, the inclusion of assessment is in relation to the time consumption of the lesson plan. Mention of assessment strictly relates to its limiting impact in the classroom communication, but they have not been analyzed. Further development of these issues are raised as recommendations for further research in Chapter VII: Recommendations for Further Research.

1.3. Significance of the Study

Previous research conducted on the teaching process in Kosovo post-war has provided enough epistemological basis to conclude that the education system encounters numerous impediments that hinder the proper employment of student-centered teaching methods. However, the research pool in Kosovo is still thin in its variation and amount of credible research conducted for all fields relevant to the education system. While the teaching process has been studied, literature review did not result in findings in relation to a study conducted specifically about the communication process. Additionally, there is an absence of research on the private schools. The introduction of private schools after the war occurred as a neoliberal goal of providing parents with choice. In relation to science, studies were found with a focus on environmental and sustainable education but none in relation to physics. Beka (2015) studied the promotion of sustainable development through a sustainable development program; Spahiu, Korca & Matthies (2014) studied the teachers’ perspectives of environmental education in high schools; Spahiu & Matthies (2014) studied a teacher education workshop for education on sustainable development.

Recognizing the small size of the research, it does not seek to serve as a representation of all physics teachers elicitation of the communication process in Kosovo. Rather of hopeful significance will be the addition to the research pool for the Kosovo education system in general. Furthermore, of small significance is that the study of these two cases provides a glimpse of the variation between the communication in a physics private and public classroom. The study acknowledges that the teaching content of physics is not studied in this research, but the way the information is transmitted to the students. In recognizing the importance of dialogic communication for students’ learning of physics, the study hopes to incite further study in
relation to the teaching of physics and further connect the teaching methods with the teaching of the content.

Additionally, there is optimism that this will further provide a basis for conducting a deeper analysis of the individual frame factors by conducting an even greater study. An additional possible significance lies in an attempt at shedding some light on the actual frame factors of the teaching process for a better understanding of the teachers’ role in the development of the teaching process.

1.4. Structure of the Study

This thesis is composed of eight chapters. The first chapter provides an introduction and background to the problem along with the aim and objectives, limitations and delimitations faced during the research, and the significance of the study. Chapter II: Contextual Framework will focus on providing a general introduction into the Kosovo political background and focus in detail on its education, its development and impediments. Framing the education system of Kosovo by providing the development of its education will be necessary for the establishment of the possible frame factors limiting or assisting the communication process. Chapter III: Literature Review and Conceptual Framework will seek to present, define and analyze concepts that are relevant to the construction of the theoretical foundation for this thesis. It will briefly discuss the importance of communication for students learning, the teachers’ role in this and employment of student-centered constructivist teaching method along with the introduction of the frame factor theory and its relation to the aforementioned topics. Chapter IV: Methodology will introduce the methodology developed for researching along with justifications for its application. It will provide the structure of the research methodology, strategy, and design of the research along with the processing of the collected data. Chapter V: Findings introduces research findings. The findings will be presented based on insight provided. Discussion occurs in Chapter VI: Discussion and Summary of Findings. Chapter VII: Recommendations for Further Research presents some minor recommendations that arose during the research and finally, Chapter VIII: Concluding Remarks.
Chapter II: Contextual Framework

Contextual background will serve to provide a general introduction of Kosovo and further discuss the development of the education system in Kosovo during the 20th century to the current state. It will continue with a profounder overview of the education system after the war, its development of the curriculum, the Upper Secondary Education (USE) and the teachers’ education. This will provide an outline of the problems within Kosovo and the education system in general which influence the teaching process.

2.1. General Information on Kosovo

The republic of Kosovo shown in Figure 1 is a 10,877 km², southeast European country neighboring the countries of Serbia, Macedonia, Montenegro and Albania (ASK, 2003). It has a continental climate and a population of around two million1. Table 5 shows the total population of Kosovo within the period of 1921-2006 along with the ethnical background of the population2 which is mainly Albanian (92%), followed by Serbian (5.3%), Roma, Ashkali and Egyptians (RAE) (1.1%), Turkish (0.4%) and others (1.2%) (ASK, 2003, p. 2, ASK, 2008, p. 7). The youth3 make up around 60% of the population, making it the country with the youngest population in Europe (UNDP, 2006; KEC, 2001). The city with the highest density is the capital Prishtina, with around 200,000 registered inhabitants.

The human development index is one of the lowest in the region, 0.7 as measured in 2006, see Figure 6 (UNDP, 2006,). While common for transitional countries poverty rates to decrease, that is not the case for Kosovo. Poverty rates range between “34 and 48 percent for absolute poverty and from 12 to 18 percent for extreme poverty – those people unable to meet their critical survival needs” (UNDP, 2012, p. 11).

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1 Population according to the ASK website is around 1.9 million (ASK, n.d.)
2 As shown in the Table 5, assessments were made for the 1991 and 2006. The census in 1991 was boycotted by Albanians due to human rights violations (KEC, 2000, p. 6)
3 The youth in Kosovo are defined between the age of 15-24 (UNDP, 2006, p. 22)
Furthermore, the unemployment rate in Kosovo is one of the highest in the region, 44.9% (ASK, 2011, p. 53-55). The main employment sector is trade and service with 69.5%, industry 15.3%, construction 8.4%, while agriculture at 4.2% has the lowest percentage despite the fact that a high number of the population comes from the rural area. The youths see the highest unemployment, which rises up to 73 percent (UNDP, 2012, p. 11). Low market demand along with the youth’s lack of appropriate knowledge and skills to fit the market are affecting factors. The low quality of education is a contributor to the students’ difficulty in accessing the job market (United States Agency International Development (USAID), 2013).

2.1.1. Historical Background of the Development of Education

Annexation of Kosovo by Serbia occurred in 1913. Upon the development the Social Federal Republic of Yugoslavia (SFRY), Kosovo was incorporated (KEC, 2000; Malcolm, 1999, 2008). Under the SFRY, the policies served to repress the Albanian population in Kosovo. However, with Joseph Bros Tito coming into power as the SFRY leader, retraction of the policies and their substitution with more Albanian inclusive policies occurred. The latter policies led to Kosovo gaining the autonomous status in 1974. This allowed the development of Albanian public institutions and the use of Albanian as an official language. This act positively affected the employment of Kosovo-Albanians; it led to the creation of schools and the creation of the University of Prishtina (UP) resulting in a decrease in the illiteracy. However, retraction
of these policies occurred once more with the rise of Slobodan Milosevic. The retraction reverted the progress and antagonized the relations between the Serbs and Kosovo-Albanians.

By 1990, Kosovo-Albanians were dismissed from public institutions; professors and students were expelled; teaching in the Albanian language was deemed illegal; and University funding was discontinued (KEC, 2000; UP, 2012). As a countermeasure, the Albanians created an underground parallel education system, holding classes mainly in private homes – visualized in the documentary Iliria (n.d.). The parallel education system included all educational levels and continued until the outburst of the war in 1998. While the quality of the education during the parallel system was moderately poor, with a limited number of subjects offered, what gave it a significant importance was providing children an education in their native language (Sommers & Buckland, 2004; UNDP, 2006). By June of 1999, Kosovo was liberated and placed under the UN protectorate. United Nations Mission in Kosovo (UNMIK) was created as an interim international administration that sought to progressively transfer the power to the locals. This occurred slowly with the creation of governmental institutions, and by February 17, 2008, Kosovo was able to declare independence.

2.2. Development of the Education System after the War

The UNDP (2006) estimated that approximately 45% of the school infrastructure was destroyed during the war, while an additional 17% had some form of damage. Thus, the initial steps in education called for reconstruction of the infrastructure, which occurred in great masses from 1999 to 2001.

The educational reforms after the war⁴ aimed in aligning the education system with European standards through changes in its construction (Sommers & Buckland, 2004). The levels of education were divided into pre-university and university. The pre-university, visualized in Figure 7, is divided into four levels, pre-school, primary (class 1-5), lower secondary (class 6-9), and USE (class 10-12/13) (MEST, 2001). Compulsory education includes nine years (or primary and lower secondary). Teaching is offered in Albanian, Turkish

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⁴ When stating ‘after the war’ reference is on the time from 1999 and onwards. Kosovo-Albanians separate and present most information within periods, before the war, during the war, and after the war.
and Bosnian, while the education of the Serbian minority continues to be offered in Serbian under the education system of Serbia, which does not recognize Kosovo (MEST, 2011)\textsuperscript{5}.

In the USAID country development report on Kosovo conducted in 2013, issues hindering the development of education in Kosovo are listed as being disparities in the quality of schools where, “despite recent gains, there is poor teacher professional development, inadequate and out-of-date curricula, and a shortage of learning materials and equipment. There are serious gender gaps in education management” (p. 8).

The public expenditure on education as Gross development product (GDP) percentage in Kosovo is around 4.4% (MEST, 2015, p. 156). From the total government expenditure, it accounts for approximately 16% (11% towards pre-university) but around 80% goes to paying the teacher salaries. The funding for the education system in Kosovo derives from six sources, with the largest coming from “international donors through a consolidated Public Investment Program as well as other projects” (UNDP, 2006, p. 49).

2.2.1. National Curriculum

The New Kosovo Curriculum Framework (NKCF) was developed in 2001, during the surge of the post-war reforms. The focus of the NKCF was inclusion and the interactive learner-centered classroom. Aligning the students to the labor market was not sufficient. Instead, a proper learning environment for the student to grow as individuals and citizens became essential. The implementation occurred in 2002/3 (MEST, 2001). The Kosovo Curriculum Framework (KCF) developed in 2010 is currently piloted in 61 schools throughout Kosovo but it has yet to be implemented fully (Mater, 2014; MEST, 2010). Nonetheless, the KCF holds the same values of providing a learner-centered environment, but in difference is more comprehensive. For future purposes, in particular in regards to the findings, unless specified otherwise, when referring to the curriculum, reference is on the NKCF.

The aim of the education according to the NKCF (2001) is for students to be active participants and contributors to the development of a democratic society, to provide students with knowledge for an ever growing globalized world, to provide grounds for identity and value

\textsuperscript{5} In the course of this paper, when referring to the education system, the paper seeks to present information on the education system designed by the Kosovo authorities, thus its will refrain from referencing to the Serbian education system.
(family, community, national) building, responsibility, self-esteem. Learning is not to be limited to facts and concepts, but knowledge and skills. Rather than a self-fulfilling process, teaching in NKCF is a method in aiding the students in their learning that needs to consider, students initiatives, responsibility, highlight needs, active student inclusion, and communication development, develop constructive skills, and consider their pre-requisites. Teachers are to act as moderators, in stimulating communication and dialogues with the students and with each other. Teachers are expected to continuously develop through research and updates within their own field and the field of teaching practices. Focus should remain on promoting communication by:

“Providing a space for students to actively participate in their own learning. They can discuss with the teacher to decide on the type of learning activities and situations they would like to experience. The interaction occurs not only between teachers and students, but also among students themselves. Interactive pedagogy involves teamwork and cooperative learning and reinforces the social dimension of learning processes. Learning is the most common ability and characteristic of human beings. Through learning processes, one acquires knowledge, values, attitudes and skills, and behavioral patterns of activity” (MEST, 2001, p.100).

2.2.2. Upper Secondary Education

USE is offered by public and private (government licensed) institutions. The statistics from the MEST (2015a, p.17 & p. 48) show that there are 11,350 overall registered students in USE in Prishtina, 5894 in gymnasiums, of which 1010 are attending private USE. Educational attainment of USE in Kosovo hovers at 36.4% (ASK, 2011, p. 49). The participation rate in compulsory education in Kosovo is around Gross Enrollment Rate (GER) 98.6% (Figure 8) (MEST, 2015, p. 135). Whereas this significantly decreases in USE to 88.7% (Figure 9).

USE schools are gymnasiums, which usually lasts for four years (10-12/13) or vocational and artistic which lasts three years (KEC, 2000; MEST, 2015a: UNDP, 2006). Gymnasiums can be of the social science, general, natural science or mathematics stream. The classes are planned to last between 40-45 minutes, and the academic year is 37 weeks. Students take 17 different courses in each public USE grade. While, students at the private school observed in

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6 The percentage derives from the “ratio of persons aged 25 and over who have completed USE to the total population aged 25 and over, in percentage” (ASK, 2011, p. 49)
In USE, students are to additionally be aided in their orientation towards a particular career or academic path. USE according to the curriculum needs to provide students with interdisciplinary education, sequencing of knowledge, value building, and lifelong learning skills in a learner-centered environment. In addition to this, teachers of 12th grade students are to prepare students for the Matura exam. An USE exit exam that all students in Kosovo are required to take in order to graduate and further pursue their academic career.

2.3. Teachers and their Education and Professional Development

While the first higher education (HE) institution was founded in 1958 in Prishtina, it was not until 1970 during the autonomous period that the UP was established (KEC, 2000). The HE institutions unified with the UP in 1980 served to solidify the strength of the UP (UP, 2012). However, the retraction of policies in 1990s, mentioned in section 2.1.1, stagnated the progress of the UP and led to the dismissal of all Kosovo-Albanians from the University. It was during the parallel system, in 1997, that the faculty of teaching was developed to meet the pre-university teachers’ demands.

After the war, several reforms that tackled all aspects of the education system were initiated parallel to one another. While financially, the primary focus was in reconstruction and rebuilding, the secondary focus was in aligning the education system of Kosovo with European standards. This began with the development of the MEST\(^7\) to which the power was gradually transferred to from UNMIK. It was followed by the creation of the faculty of education (FE) in 2002\(^8\) (Anderson & Breca, 2005). The creation of the FE led to a discontinuation of the faculty of teaching and the HE pedagogical institutions that had served to train teachers up until then. This reform was conducted with the help of Canadian International Development Agency

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\(^7\) It should be noted that the KCF has reduced the allocated time for natural science to around 15%, while this has not yet been implemented (MEST, 2010, p. 55).

\(^8\) When initially established, it was known as Ministry of education and sports (MOES) but it changed into MEST. To avoid confusion, MEST will be used as a term to represent the ministry responsible for the development of the education system.

\(^9\) Headquarters are in Prishtina but there are four regional centers: Prishtina, Gjilan, Gjakova, and Prizren (UP, 2012).
(CIDA) through the Kosovo Education Development Plan (KEDP) (Bicaj & Berisha, 2013). The reason was to develop a unified institution aimed at providing the professional development training for future and current teachers – the FE; followed by a reform of the programs and finally, to actually provide the professional development (Goddard, n.d). While they were able to structure the FE to offer undergraduate degrees in education for teaching at the pre-university level, subject oriented academic faculties still cover the teacher training for the USE and they resisted in handing it over to FE in fear of it negatively affecting their enrollment numbers and their faculty structure (Walker & Epp, 2010; Saqipi, 2008). The reform of the programs were created but this excluded the USE. Therefore, physics USE teachers still receive their pre-service training from the faculty of mathematics and natural science (FMNS) and thus their subjection to teacher training is far less than FE students (UP, 2012).

Country wide systemic reforms ensured clashes and problems with the successful rollout of the reforms and warranted an unbalanced progress between them. The procedure of aligning the UP within the Bologna Framework\(^{10}\) through the frameworks inclusion in the Law on HE (2013)\(^{11}\) parallel to creating and reconstructing the FE caused great confusion and un-clarity. Furthermore, according to USAID (2013) “there are shortcomings in management, curriculum relevance, and pedagogy (p. 8)”. Teaching procedures were inherited from the communist era, which were heavily teacher centered. The quality of teaching as a result has been a great challenge at all levels of the education system. To tackle this, trainings from donors and the MEST have been offered to teachers. According to UNDP (2006), “in the past four years about 60 percent of teachers have participated in such trainings” (p. 44). The quality of the trainings however has been criticized due to their general nature. Additionally, the parallel education system had amplified the teachers’ social role as this system served “as an instrument to maintain national identity” (Saqipi, Asunta & Korpinen, 2014, p.636). This inadvertently influenced their teaching. Rexhaj, Mula & Hima (2010) referred to the inheritance of teachers from before the war as having a negative impact on the ability to implement the reforms as they are resistant to change. Saqipi (2008) found that “the majority of the staff from the establishment of the faculty [FE] considered that a good teacher is the one that knows the

\(^{10}\)“The adoption of a system of easily readable and comparable degrees; the adoption of a system essentially based on two cycles with relevance to the European labor market; the establishment of a system of credits (the European Credit and Transfer System - ECTS). The promotion of mobility; the promotion of European cooperation in quality assurance; the promotion of the European dimension in HE; Partnership with HE institutions and students; the promotion of the attractiveness of the EHEA; and doctoral studies and the synergy between the EHEA and the European Research Area” (OECD, 2009, p. 20).

\(^{11}\)While Kosovo has not signed the bologna agreement, it has reformed its education in alignment with the Bologna process for the aim of creating an education system with European standards.
subject well” (p. 3). While Tahirsylaj (2013) found scarcity in the teachers’ self-reflection and a habit of holding external sources liable for their teaching. Furthermore, Mehmeti (2014) found a discrepancy between investments in teacher trainings and students outcome. In his previous study (Mehmeti, 2010, used in Mehmeti, 2014) upon researching the Matura exam, found the increased tendency of “students cheating as a result of their insecurities in their learnings in USE, despite the majority of their professors having been trained in applying different teaching and learning methodologies” (p.14).

Chapter III: Literature Review and Conceptual Framework

Chapter III will serve to introduce the conceptual framework and literature review that assisted the construction of the research. The order is not in relation to their significance to the construction of the thesis but rather their relation to one another. The broad outlook of these concepts tackled in this chapter is recognized. Nevertheless, the attempt is at integrating these multifaceted theories to enable the representation of certain fundamental characteristics that help in underlining the importance of dialogic communication for the construction of reflective thought, and the teachers stimulating ability of these processes along with their possible representation through the frame factors.

This chapter will initially introduce learning from the progressive school of thought, with focus on Dewey and his positioned significance on reflective thinking and an environment that allows and encourages such a process to occur. Furthermore, emphasis of the social importance of the school and the curriculum, through which the society’s goals of the education are drawn from Dewey’s theories. The second section 3.2 will focus on the teacher as an important factor in the students’ reflective thinking, transcending into the environment wherein classroom communication occurs. Thus, the first two sections will serve to provide an overview of the learning that is advocated from the progressive school of thought and learner-centered teaching and the teacher as a relevant actor to this learning. This will then assist the transition to the conceptual framework of the dialogic and monologic communication process of the classroom, section 3.3. This section will present the framework for classroom communication and the arguments for the dialogic communication in a learner centered classroom and its assisting ability in students learning. The fourth section, 3.4, will provide a short summary of the importance of a teachers structuring of a dialogic communication environment for the students learning in science classrooms. The fifth section 3.5 will then serve to offer an overview of the
frame factors theory and its relation to the communication process, succeeded by theoretical representation of the curriculum, section 3.6, and its viewed importance as a depiction of a society’s goals of the education. Chapter III: Literature Review and Conceptual Framework will serve to introduce an overview of the importance of a teacher’s stimulation of a dialogic communication for students’ reflective learning and in providing a learner-centered classroom.

3.1. Students Learning Process

Traditional teaching and learning methods where students are passive receivers of information is slowly changing as the utilization of learner-centered teaching methods is increasing due to heightened knowledge on the process of learning. Progressive school of thought, initiated by the ideas of Dewey place importance on the process of reflective learning and the impact teaching has (Dewey, 1916, 1910, 1909, 1902). They refute the behaviorist perspective of learning, which views this as a more mechanical process. Environments short in their encouragement of active involvement of participants reduce the probability of individualized meaning making (Curzon, 2003; Barkley 2010; Harris & Cullen, 2008). Meaning making as a process embarked upon by progressive educationalists that argue that mere memorization is not enough. Meaning making according to Dewey (1910) is conducted analytically, by deconstructing the whole and conducting logical analysis on the parts; and synthetically, by analyzing the pieces to construct the whole. The accountability of the development of meaning rests with the teachers.

In his book, ‘How We Think’, Dewey (1910) dedicated excessive attention on the process of thought and the ability of developing meaning through thought. The stimulation of reflective thought is a process devising two stages. The inquisitive or curious stage and the second one being the stage of conducting research to test the reliability of the initial belief for which the reflective thought process began. The conflicting process would be routine thinking, which occurs in an environment where students are not encouraged and expectations of them are of the dormant recipient. Freire (1972) also, places great importance on reflective thinking and posits that the latter environments and student-teacher relationships suffer from the ‘narrative character’ containing of a subject and the listening object. It sees students as banks where ideas are to be ‘deposited’ rather than developed. This disables the development of communication and reflective thinking.
The thinking process to Willingham (2009) has three properties; it is slow, effortful, and uncertain. He presents a simplistic figure of the mind, where working memory is the current conscious process of thinking and awareness of the environmental surroundings. Whereas long-term memory is where the previous knowledge has been stored. Unawareness to its existence is plausible; applied only when it is necessary. A combination of information obtained from the environment and long-term memory reflects a state of successful thinking. Having the proper thinking procedure stored in the long-term memory to solve a problem helps the process. Learning in this sense occurs when the meaning of ‘what is to be learned’ is thought out. This directly ties to the reflective thought process where testing the reliability of a belief requires the initial step of inquisition. This desire of inquisition (setting the stage for the first step of reflective thought) occurs in active-learning environments where the students are taken into account. Content of the task is not enough to keep the interest and curiosity alive or to ensure reflective thinking. Activation of previous knowledge can advance a student’s proficiency. The level of difficulty of the introduced task is also dependent on the students’ pre-requisites. What is argued by Dewey (1910; 1916), Bruner (1960), Willingham (2009) and in part by Lundgren (1972, 1977) is the capacity of building on the students pre-requisites. For a student to comprehend the task and information there is a necessity for them to have the proper background knowledge. Lundgren (1972) used term meta-learning to describe the learning of students whom in lack of an active learning environment, notice the communication patterns of coming to the right answer in the classroom rather than obtaining any knowledge of the task itself.

Undertaking of the development of learning and teaching occurs in the above section. Exploration of the latter was necessary to understand and to continue with the following segments of the conceptual framework, which will examine the role of the teachers and the environment and serve to untangle the importance of the communication process in the classroom for students learning.
3.2. Teachers Role and the Influence of Motivation

Teachers have a direct role in the students learning and are accountable for the assistance in the students’ development of meaning (Hobson & Morrison-Saunders, 2013; Harris, Phillips, & Penuel, 2012; Bruner, 1960). Students’ participation through communication in this sense is essential. This has become even more important with “the millennial generation students who demand more interaction from their classroom experience” (Rocca, 2010, p.186). A student-centered teacher places emphasis on the students’ transformation of knowledge rather than the transmission. Teachers’ role in this process is reliant on the incitement of active participation from the students, acknowledgement of their current state of learning that will according to studies presented, help students in their development of their reflective thinking. Repetitive patterns to Bruner (1960), Dewey (1910), Barkley (2010), and Ausubel (as used in Curzon, 2003) evident in a passive learning environments with teacher-centered methods are unstimulating. Thomas (2013) states that “changes in students’ approaches to learning can be stimulated via changes to their classroom environments. In particular, there is a need to increase the metacognitive demands placed on students to consider what might be new and/or alternative learning frameworks and processes”(p. 1187). He further adds that the teacher is key in that “students are typically stimulated to engage in metacognitive reflection through teachers’ pedagogies that directly target specific cognitive processes or ways of learning subject material” (p. 1187).

Bain (2004 used in Harris & Cullen, 2008), found four qualities that make up a good learner-centered teacher. The first one relates to the understanding of intelligence that Willingham (2009) argues is affected by the environmental setting. When teachers understand this, they are more aware of the impact that the learning environment has on the students. The second finding, is the teachers understanding of the subject matter, where these teachers are more prone to apply different teaching methods to explain concepts if they have a deeper understanding of the subject. The third finding was the creation of supportive communities, in relation to the fourth, which revolves around trusting the students. Equal share of control in the classroom, through power sharing, dialogic communication, assignments etc. increases the students’ engagement in their learning and increases their motivation and confidence.

The Center for Advanced Study of Teaching and Learning (CASTL) at the University of Virginia introduced key teaching and learning aspects – seen in the Figure 12, which shows that interactions in the classroom serve as a link to the inputs/resources of a classroom and its
outcomes (Stuhlman, Hamre, Downer, & Pianta, n.d.a). Resources influencing the teaching process are the teachers’ education, their professional development, curricular resources and evaluation and feedback. Pre-service and in-service training are highly important for effective teaching to occur, along with providing access to curricular material that might aid them in the teaching process. In understanding the link and their impact, CASTL argues for the usage of observation as a research method.

The teachers’ self-efficacy (TSE) and their perspectives on teaching and learning influences the teaching process greatly. In conducting a comparative case study of one private and one public pre-school in their adoption of the Reggio-Emilia approach, Abdelfattah (2015), found that difference in implementation, favoring the private school, rests in teachers beliefs in the approach, school resources and teachers instructional choices. Wyatt (2016) in conducting a multi-case study of five in-service English language teachers offers a new conceptual model for TSE with a focus on reflective learning cycle. He hypothesized that growth in the teachers practical knowledge would be supported in the in-service trainings, which would in turn influence their TSE, referencing as such learning outcomes and teaching methods and entwining belief and knowledge. He concluded that TSE beliefs influence every part of the teaching and learning and consecutively is influenced by them. However, low efficacy “leads to less effort and giving up easily, which leads to poorer teaching outcomes, which then produce decreased efficacy” (Tschannen-Moran, et al., 1998, p. 234 used in Wyatt, 2016, p.117). Thus, it holds that, as reflection is important for students learning, so it is for teaching.

Wyatt (2013) stated that facilitation of self-motivation and engaging teachers occurs in favorable conditions, which are often absent in the developing countries. Challenges faced among others: “include poverty, poor working conditions, a lack of pre-service and in-service training, and limited professional and administrative support” (p. 221). Poor coordination between in-service training and newly introduced curriculums and rules negatively affects motivation. He further adds that “professional support within schools is also frequently disappointing” and that “management styles are frequently autocratic” (p. 221). He names conditions of intrinsic motivation as feeling of “competence”, a “sense of autonomy” and a “relatedness with the school environment” (p. 224) and refers to external motivation as goal directedness. Individual teachers access to professional development “depends on the micro-context, individual characteristics and the particularities of experience” (p. 233).
3.3. Understanding Classroom Communication

The following section will seek to underline the understanding of communication and its association to the students learning by initially providing a general conception of communication, followed by a comprehensive introduction of the monological and dialogical communication theory.

Classrooms are environments reflective of the planned communication process (Harris, Phillips & Penuel, 2012). Determination of the students learning level occurs through communication and enables the structuring of the lecture and an environment encouraging of reflective thinking. Communication patterns have been researched extensively. The general process includes a transmission process, receiving process and the channel of transmission (Figure 10). The channel of transmission can be verbal (words), physical (i.e., raising the hand before speaking), internal, or visual (i.e., PowerPoint, whiteboard (WB) or blackboard (BB)). Shannon & Weaver (Curzon, 2003) expanded this notion further - shown in the Figure 11 - and included the idea or thought process, along with the encoding of the sender, the transmission channel, and the decoding and action process of the receiver. Additionally, they included the feedback process and the noise, or rather interruptions that are inevitable, often. Their designed process has been accepted by many fields as the base for communication and is utilized despite its very technical characteristics.

Meaning unfolds through dialogic communication and it depends on the teacher’s ability to create this dialogic meaning-making environment (Nystrand, et al., 1997; Mercer, Dawes & Staarman, 2009). In researching teaching at the USE level in one hundred classrooms in England, Nystrand et al., (1997, used in Eriksson 2013) found that learning was more prone to occur in a dialogue rich classroom environment where students are active participants but that contrary, the majority of the classrooms were of a monologue environment. The Table 1 extracted from Nystrand et al., (1997, p. 19) visualizes the traits of a monologue rich and dialogue rich teaching process.
Table 1 Key Features of Monologically and Dialogically Organized Instructions

<table>
<thead>
<tr>
<th></th>
<th>Monogically Organized Instruction</th>
<th>Dialogically Organized Instruction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paradigm</strong></td>
<td>Recitation</td>
<td>Discussion</td>
</tr>
<tr>
<td><strong>Communication model</strong></td>
<td>Transmission of Knowledge</td>
<td>Transformation of understandings</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td>Objectivism: Knowledge is a given</td>
<td>Dialogism: Knowledge emerges from interaction of voices</td>
</tr>
<tr>
<td><strong>Source of Valued Knowledge</strong></td>
<td>Teacher, textbook authorities: Excludes students</td>
<td>Includes students' interpretations and personal experience</td>
</tr>
<tr>
<td><strong>Texture</strong></td>
<td>Choppy</td>
<td>Coherent</td>
</tr>
</tbody>
</table>

While Nystrand et al., (1997) does not omit recitation - common in monological communication - as being non-interactive, considering that questions and answering sessions are frequent in both monologically and dialogically organized instructions. The interaction in monological instruction however, does not aim at extracting the substance of the students’ responses and in encouraging students’ contribution to discussions, but rather focuses on extraction of a fact or definition. Dialogically oriented instructions on the other hand, are more associated with conversations and shared participation in the communication process for the aim of transformation of the knowledge to a students’ understanding wherein the student has a role as a source. In relation to Nystrands et al., (1997) categorization and his recognition of interaction, McMahon (2012) adds interaction to the monological\(^{12}\) (while McMahon refers to this as authoritative) and dialogical. He introduces four communication categories, “interactive/authoritative (IA), non-interactive/authoritative (NA), interactive/dialogic (ID), non-interactive/dialogic (ND)” (p.1690). The traits of each four can be found in the Table 2.

In this sense, monological organized instructions are interactive in that they acquire the students’ participation and engagement, but students are often selected by the teacher. The interaction and communication is enfolded with recitation, rehearsal and repetition of factual knowledge. NA organized instructions require little student engagement and emphasis is on transmission of course content. ID organized instructions where discussions and ideas are drawn from students’ meanings, implemented and tested; pre-requisites are taken into account,

\(^{12}\) From here on after, monological and authoritative will be used as synonyms.
reviews of lectures are all developed along with the students. ND while dialogic, student participation is limited.

Table 2: Communicative Approaches (Mortimer & Scott used in McMahon, 2012, p. 1690)

<table>
<thead>
<tr>
<th>ID</th>
<th>AI</th>
<th>ND</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pooling ideas (conceptual and procedural)</td>
<td>Modelling &amp; rehearsing aspects of processes of science</td>
<td>Teacher presents selected ideas from group work</td>
<td>Explaining aims</td>
</tr>
<tr>
<td>Recapping previously pooled ideas</td>
<td>Recaps and summaries of conceptual knowledge</td>
<td>Talk partners (pupil-pupil, not interacting with teacher)</td>
<td>Introducing tasks</td>
</tr>
<tr>
<td>Developing the meaning of procedural terminology (e.g. a fair test)</td>
<td>Introducing the scientific story by selecting children to rehearse it</td>
<td></td>
<td>Organizational instructions</td>
</tr>
<tr>
<td>Discussing ideas developed by different groups of children</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussing the outcomes of illustrative practical work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Debating and applying ideas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Review of skills and processes used</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Initiation of dialogues according to Black and William (1998) occur through questions posed by the teachers. The older students get the fewer questions they pose (Marbach & Sokolove, 2000). By the USE level, student questions are at approximately “13% whereas teachers’ questions comprise of the 87%” (Hyman, 1977, p. 4), mainly fact questions. Hyman (1977) studied the patterns of questions in relation to the sequence, the response and the cognitive process by observing six teachers. He divides questions into two categories, peak and plateaus, which involve three cognitive processes, empirical (fact stating and explaining), analytic (defining and interpreting), and evaluative (opining and justifying). He found that questions were mainly peak patterns involving the empirical process for elicitation of facts and that they were more frequent between one student and a teacher rather than the class or group. He concluded that this form of teaching is not in concurrence with the student-centered teaching reforms, and that there is need in training teachers in posing questions that involve the analytical

13 Peak questions “The teacher asks a question and immediately goes to a more complex question so as to elicit a more complex process about the previous response” (Hyman, 1977, p. 5)

14 In plateaus questioning, the teacher asks a series of questions of the same type before asking a more complex question requesting a comparison of or reasons for the previous responses (Hyman, 1977, p. 5)
and evaluative questions that elicit reflective thinking. Questions and answers dialogues with only one student can result in the reduction of the other students’ interest.

Application of fact questions is frequent, despite the student-centered approach requirement from the classroom teaching. Studies conducted in the first half of the 20th century found that 60% of the questions posed were fact questions; 20% required students to think and 20% were procedural (Gall, 1970 used in Eriksson, 2013, p.6). Harlen (1996, p.63 used in Eriksson, 2013, p.5) divides questions into unproductive (only pure straightforward factual answers) and productive (stimulates productivity by allowing students to develop and investigate).

An often-occurring problem is the short time that teachers wait for a response, leading to a reduction of the questions level of difficulty and in turn end up posing a new fact question (Nystrand, 1997; Eriksson, 2013). Short amount of time provided for the answers, and abetted with the often times lack of, or reduced feedback from the teacher, results in fast-paced questioning which is associated with monologically organized instructions. This is also associated with classroom control, wherein the teachers aim is to keep the class in line with the goals set for the lesson and achieves this through fast-paced questions. Evaluation of the importance of knowledge is strictly determined by the teacher and the source is the teacher themselves and the textbooks, whereas the students participation is rather procedural.

Evaluation and feedback of the students’ responses to a question must lead to a construct of knowledge, and good quality evaluation and feedback is associated with dialogical instruction. Mere affirmation or repetition of the students’ response will not suffice to marker the communication constructive to students. However, stimulating the usage of productive questions and providing quality feedback in aiding students in participating with their knowledge is hard when the teachers themselves are not used to it, as their own training was in traditional environments demanding of unproductive question posing and passive participation.

3.4. Learner-Centered Physics and Science Communication

The research conducted in relation to physics learning is in accordance with the findings presented above. To understand physics, an active learning environment wherein a dialogic communication occurs is necessary. However, Duit, Neidderer & Schecker (2007) state that this is a rather difficult task in physics classrooms as “physics is distinguished from other sciences by its extremely high levels of abstraction and idealization,” and that physics originates
from the reconstruction of the world ‘under the assumption of theoretical principles’ (p. 605 used in Thomas, 2013, p. 1184). Eriksson (2013) conducted a study on the communication patterns in the form of questions, from which she analyzed the possibility of explaining the communication patterns through the frame factors theory. She studied five biology USE teachers, their perceptions, and their students’ perceptions of the communication frame factors (see section 3.5), focusing on questions posed. The findings showed that the teachers and students were frame factors of the communication process. From the teachers’ perspectives, frame factors to the teachers’ questions were ‘experience’, ‘preparation’ and ‘daily conditions’, while for the students’ questions the teachers considered classroom climate to act as a frame factor. The latter was also considered as frame factors by the students with the addition to the teachers’ presentation of the lesson. Eriksson (2013) argues that natural science is a frame factor as the area itself has traditional views of transmitting the information, communicating and teaching methods, which influences the frames created by the students and teachers. Strömdahl (2002) argues that reasons for the difficulty in communicating natural science topics is due to the characteristics of the language differing from our everyday language (used in Eriksson, 2013). This might require spending more time on the transmission of the lecture and leaving little room for participation.

Mercer, Dawes & Staarman (2009) observed two teachers dialogic teaching of science. They found that both teachers initiated interaction through questions but were mainly monological/authoritative and that neither developed whole-class discussions, they both elicited students ideas but did not develop or connect the ideas with each other or the scientific perspective. They concluded that teacher training (pre and inservice) needs to be more focused on the development of talk in the classrooms for proper learning. Thomas (2013) conducted a change to teachers’ pedagogy in a physics USE class, wherein the teachers were taught to provide students with different ways of viewing physics through microscopic, macroscopic and symbolic approaches (similar to Dewey’s synthetic and analytical theory). Thomas found that students thinking and perception of physics had changed to thought that is more reflective and the students acquired a deeper learning of physics and a changed perspective. This was measured through students’ accounts pre and post-pedagogical change. One students post-pedagogical change account is was as follows:

“….I’m finding it easier to understand now. Before I could do the math, but I was not really sure if I was understanding. Now it actually makes a bit more sense. Now you know what you have to be able to understand to understand. Before I did not know
exactly what understanding ‘it’ means, and now I do. Being able to understand means being able to look at ‘it’ from all different angles. I am connecting ideas more than I used to. For example, I am looking at the physics of a soccer ball sometimes when I ‘blasting it’ halfway down the field. That’s new…” (p.1201)

Roth & Roychoudhury (1994) argue that science presented to students as facts - which is often the case - encourages students to memorize it as facts rather than developing their own understanding of it. This further develops the student’s view of physics into ‘individually meditated’ view associated with meaning making, or ‘culturally mediated’ that is associated with memorization. Culturally mediated view of physics also relates physics more to mathematical concepts and inspires traditional methods of teaching. In this sense, introduction of science to students occurs from an objectivist viewpoint.

“Traditional science teaching has focused on the direct transmission of these truths. To make this transmission effective, such teachers use whole-class non-interactive and whole-class interactive activities because they allow the coverage of much content. Thus, in many science classrooms, the norms are teacher explanation of concepts and procedures for calculating word problems to the whole class, followed by student seat work that emphasizes completion over comprehension” (p.6).

Dialogically organized interactive instructions is then essential to students learning. Their approach to learning can be stimulated through the environment wherein the teacher is the key (Thomas, 2013). Language in this aspect is crucial, where through communication the teachers can help the students in realigning their view of physics and in understanding concepts.

3.5. Frame Factors Theory

Up to this point, an attempt at underlining the importance of dialogic communication for the construction of reflective thought and the teachers stimulating ability of these processes through integration of these multifaceted theories occurred. The interconnection of these theories provides ground for continuing with the introduction of the frame factors theory. In asking the question, what limits the communication process in the classroom; this question will be viewed through the frame factors.

Dahllöf (1967 used in Lundgren, 1972; 1977; Lindblad, et al., 1999) initially designed the theory of frame factors in an attempt at explaining the limiting frames of time, content and students on teaching. Ulf Lundgren, utilized and expanded the theory for his dissertation,
“frame factors and the teaching process: a contribution to curriculum theory and theory on teaching” (1972) wherein he introduced the paradigm of the general approach to the frame factors theory, see Figure 2. Frame factors affect the teaching process, which in turn affects the learning outcome (p.12).

Figure 2: Paradigm of the general approach and the outlines of a model (Lundgren, 1972, p.12)

Lundgren (1972) sees the process as not only “steered by the frames but also limited by them” and that the outcome is “limited by the interrelations of the frame factors” (p.13). To be able to change the teaching or learning process acknowledgment and understanding of the existence of the frame factors is essential.

Figure 3 illustrates the different factors influencing the steering of the teaching process but does not limit it to these factors only. Frame factors, Lundgren (1977) states, can be established by different aspects of the educational process, other than the time, personal and space, which he mentions.

“In some situations, such aspects may act as fixed factors, while in other situations they may be variable and open to manipulation. For example, from the planners viewpoint, class size and composition may be manipulable factors while, from the viewpoint of the teachers and students, they may constitute frame factors that limit and,
to some extent, determine the teaching process. One may even speak of a chain of factors, in which a manipulable factor functions as a frame factor on the next level of decision” (p.23)

In regards to time, the actual time of the lecture might be in disproportion to the expectations of the curriculum. While the curriculum requires active learning to be employed where students are given enough consideration in the classroom parallel to demands of transmission of the subject requirements, the lecturing time is insufficient for covering the goals for the form and content of teaching.

Additional frames of the teaching process include legislative, political, social, ideological and economic and cultural, many of which, according to Lundgren (1977), “operate outside the consciousness of the acting individuals” (p.34). Arfwedsson’s (1979 used in Eriksson, 2013) explains this through concepts of ‘teacher codes’ and ‘student codes’ which function under ideological and social frame factors and are developed through unwritten/written school and class rules. These rules in relation to classroom talk according to, Lindblad, Linde & Naeslund (1999), determine “whom can talk and what one can talk about, which distinguishes from communication in other contexts” (p. 99). Thus, frames can be developed through the actors as much as it can through organizational and political frames.

One such important frame factor would be the teachers’ ideology, which stems from a combination of the teachers beliefs structured by their background and culture. The curriculum in this sense is also expressed by the economic, social and cultural context. The students’ interpretation as well, is influenced by these contexts, or tradition and culture which, Lindblad, et al., (1999) states are the “participants' ideas on what to talk about, and how, the social composition of the student body is” (p. 99). Applying a student-centered teaching process requires an equally active and motivated teacher. A well-developed communication process is the groundwork for an active learning and teaching process. The teacher can act as a frame factor depending on their personality, experience or training, as can the student. Depending on the employment of labs, group works etc. the teaching process thus is dependent on the other frame factors, the teacher, curriculum, time etc. Teaching process where the teacher is the only one talking leaves students to think that there is no reason to participate, ask questions or engage - painting the processes of teaching and learning as a teacher directed monologue.
3.6. The Curriculum and its Importance to Teaching and Learning

Following Dewey’s (1910, 1902) understanding of the teaching and learning process, it seems only fitting to trail the same theoretical structure to the curriculum theories. In accordance with Lundgren (1972, 1977), the theoretical aspect of the curriculum will be presented from the philosophically oriented curriculum theories, which Dewey’s works are representative of. He has served as a great influence to the re-orientation of the curriculum and their enforcement of his theories on the learner-centered teaching mentioned in the previous sections within this chapter.

A country’s ideologies are responsible for generating the education system. Expression of social expectation of the outcome of the educational process occurs in the curriculum and they serve as guidelines of proper conduct in the classrooms (Lundgren 1972; Dewey, 1902). However, its benefits can lessen if there is no grasp on the concepts and there is a poor communication process. Selimos, Kadriu & Tower (2011) in interviewing teachers to understand their experience on curricular reform, found to emergent themes, lack of support and coordination and controversy over required methodology” (p. 23). Gojani (2014) through interviews with teachers in Kosovo found that there is a discrepancy between how legal frameworks outlines student assessment as opposed to how it is actually applied in classrooms by the teachers. Potera (2014) found a discrepancy in the hierarchical communication process in the education system, wherein, the schools lack adequate information on the undertakings of the education system. He found that the basic knowledge on the KCF and its principles was low. He also found that teachers were not included in the reform processes and the development of the KCF, from which he concluded that when changes are made, inclusion of the people who are responsible for implementing the changes and their views is necessary in the successful reform. Benefits of the curriculum to the student is reduced whenever teachers have a low grasp of its content and requirements (Bruner, 1960). Primarily they are constructed around the communication process in the classroom. The progressive education theories have thus influenced the orientation of the curriculum as it has the role of guiding the teaching process, which students learning is highly dependent on. Thus, the design of the curriculum is to guide the teaching towards providing the adequate learning environment. For this to occur training of teachers towards this aspect is essential. According to Lundgren (1977), teachers’ internalization of the curriculum and the frame factors demands influence the effect that they have.
“As the teacher controls the communication pattern, it is important to discover how he perceives the goals and the pattern of his teaching in relation to his interpretation of the goals, how well he diagnoses a student's learning pace, how well he plans his teaching in accordance with these factors and the total amount of time available” (p. 163-164)

The literature introduced above was important for construction of the thesis. Upon concluding this chapter and continuing with the construction of this thesis, some basic assumptions have been made. The education system in general has expectations of the teaching being performed in a learner-centered active environment encouraging communication. The communication process in the classroom is mainly verbal and that the ID communication is encouraged, and the frame factors are considered the curriculum and the teacher. The research shall concentrate on the verbal communication process in these two classrooms and view the curriculum and the teachers as possible frame factors.

Chapter IV: Methodology

This section describes the research methods employed for undertaking the aims and objectives. The research is qualitative in nature, with the researcher as the main instrument, and applies the multiple case study design approach. According to Bryman (2012), case study design provides the opportunity for a rigorous assessment of the desired setting, while the multiple case study “offers an even greater opportunity, because the researcher will be in a position to examine the operation of generative causal mechanisms in contrasting or similar contexts” (p. 74). For this, the researcher found it reasonable to apply the multiple case-study design, as this approach provides the opportunity to examine, interpret and compare the communication process and its frame factors in two separate contrasting physics classes. The data collection occurred through observations and interviews and the analysis and presentation occurred in a qualitative narrative manner.

Patton’s (2001) described twelve major characteristic of qualitative research, which have helped in the structuring of this thesis. He divided them into three categories. The design strategy, (naturalistic inquiry, emergent design flexibility and purposeful sampling); data-collection (qualitative data, personal experience, emphatics neutrality and mindfulness,
This chapter will commence with the design strategy applied for this research wherein the sample of the participating teachers is described. Followed by the data collection and analysis strategies which have been merged in accordance with the data collection method. Furthermore, reliability and validity are discussed. Recognizing that these terms are more associated with the quantitative research method, Johnson & Christensen (2013) argue that this can be applied to qualitative to signify the trustworthiness and credibility of the research. Lastly, ethical considerations of the research are undertaken.

4.1. The Design Strategy

The research strategy is qualitative in nature as the goal of a qualitative research lies in exploration, description and interpretation. The scientific method for the generation of knowledge for this thesis is the scientific inductive exploratory method (Johnson & Christensen, 2013, Creswell, 2013). The exploratory approach relies on generation rather than testing (Bryman, 2012). It is also known as a theory generating approach, or bottom-up approach associated with qualitative research.

The aim and objectives of this research attest to its alignment with the desire to explore, describe and interpret the elicited communication process and its frame factors in two separate physics classes. Following this, the research applies naturalistic inquiry in an attempt to observe the communication in a natural setting without interfering and attempts at obtaining insight to the teachers’ viewpoint and behavior.

The multiple case design under the case study approach to qualitative research has been employed as it is used when one wants “to describe one or more cases in depth and address the research questions and issues” (Johnson & Christensen, 2013, p. 424). To this end, this design was seen as a fit for this research as it seeks to gain insight on a topic by studying multiple cases (Bryman, 2012; Creswell, 2013). In this study, there are two cases being studied, the elicitation of communication process by the public school teacher and the private school teacher and to address whether this communication can be explained through frame factors. Johnson & Christensen (2013) list several advantages to studying multiple cases,
“First, a comparative type of study can be conducted in which several cases are compared for similarities and differences. For example, a public school might be studied and compared with a private school. Second, one can more effectively test a theory by observing the results of multiple cases. Third, one is more likely to be able to generalize the results from multiple cases rather than from a single case” (p.436).”

However, the disadvantages are often related to having to decide between depth and breadth.

“This is a classic depth-versus-breadth-trade-off, and it is a common trade off in case study research. In other words, because of limited resources (e.g. money and time) available in most research studies, you will be forced to make a choice between “depth and detail” and breadth and comparative information” (p. 437)

4.1.1. Sample of Participating Teachers

The two specific teachers were chosen because of their employment as one works in a public while the other at a private - both well aspired schools in Prishtina. The secondary reason lays in their schools alignment with the progressive school of thought and the curriculum. Both schools have strong alignments with the progressive school of thought in regards to the teaching and learning process and aim at offering a dialogic environment in class and in the schools.

Attending USE, the private school students would have held approximately 160 physics lessons. The public schools would have held approximately 200 physics lessons. However, due to the easily distinguishable characteristics of the schools more information cannot be revealed.

The public school teacher, hereon after will be referred to as Simon (pseudonym), and the private school teacher will be referred to as Sara (pseudonym). The Table 3 below shows the teachers experience and academic achievements. Their professional background differed in terms of years but they both had experience in public and private schools. Simon had been a teacher for 29 years, and worked at this public school for 28 of them. While Sara had a shorter experience, she had initially started at a public school, leaving that job for the private school.

The Table 3 shows that their academic background is almost identical. They were both educated at FMNS at UP, which was the highest degree before the war for the position of a teacher. Sara however, is currently pursuing a master in teaching from the FE while Simon did
not indicate any plans in pursuing a post-graduate degree. They both explained how their undergraduate courses were oriented in the field of physics and that there was only one course in their final semester offered in relation to teaching. Additionally, both teachers had been subjected to the several training programs after the war, and several others as the reforms progressed.

Table 3: General Information of Participating Teachers

<table>
<thead>
<tr>
<th>Profiles</th>
<th>Sara</th>
<th>Simon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>FMNS at UP, Physics, 1997</td>
<td>FMNS at UP, Physics, 1987</td>
</tr>
<tr>
<td>Post-graduate</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Years of experience</td>
<td>19</td>
<td>29</td>
</tr>
<tr>
<td>Years working at current school</td>
<td>12</td>
<td>28</td>
</tr>
<tr>
<td>Works at another school</td>
<td>N</td>
<td>Y</td>
</tr>
<tr>
<td>Time spent in the school</td>
<td>40h/week</td>
<td>20h/week</td>
</tr>
<tr>
<td>In-service training</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Pre-service teacher training</td>
<td>1 semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

4.2. Data Collection and Analysis Strategies

This section will outline the process of the data collection and analysis by presenting them through the data collection types applied. The research comprises of primary and secondary qualitative data with the researcher serving as the data collection instrument (Johnson & Christensen, 2013; Bryman, 2012). In accordance with the case study research methodology in using multiple methods and sources for the collection of primary data served to find the consistencies and inconsistencies. This method further serves to increase the validity of a research. Data collection included observation and in depth interviews with the teachers, supplemented with field notes and audio-recording and review of secondary data with the final report being in a narrative form, with descriptions and quotations.

Four observations took place, twice in each classroom. Total observation time ranges at 45 minutes per class lesson, or 180 minutes in total. The interview with the private school teacher lasted approximately 50 minutes while the interview with the public school teacher around 30 minutes as his answers were more concise. The general information of the observations can
be found in the Table 4, which shows the number of students present in relation to their gender and the form of lecturing. To follow the lectures in a sequencing manner, the observations within the same school were conducted one after the other. That is, for the private school, observations occurred on Thursday and Friday, while for the public one, Monday and Tuesday.

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Observation</th>
<th>Year level</th>
<th>Total number of students</th>
<th>Present Girls/Boys</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sara</td>
<td>I</td>
<td>12</td>
<td>22</td>
<td>9/12</td>
<td>Electrostatic</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>12</td>
<td>7/11</td>
<td></td>
<td>Electrostatic (equations)</td>
</tr>
<tr>
<td>Simon</td>
<td>I</td>
<td>12</td>
<td>36</td>
<td>26/10</td>
<td>Law of conservation</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>12</td>
<td>26/10</td>
<td></td>
<td>Trans uranium elements</td>
</tr>
</tbody>
</table>

Through observations, the communication processes were observed and patterns of communication were established. The audio recording allowed more time to observe the classroom and the possibility of retracing something and simultaneously reduced the chance of misinterpretation. The interviews were utilized to obtain the viewpoint of the teachers, and in establishing background and influence. While secondary data was utilized for the construction of contextual and conceptual frameworks, as well as providing an analysis of government documents with a particular focus on curricula’s.

Following the analysis applied in qualitative research when conducting a multiple case-design, the cases are usually analyzed separately followed by a section that serves to integrate the findings from both cases. The data were initially transcribed on separate excel sheets, along with columns with the field notes. The data was then cross analyzed, dissected and categorized based on the answers and in accordance with the research questions.
4.2.1. Observation

Observations in the classroom are conducted when there is interest in the teaching process, what occurs in the classroom, the interactions and rapport (Sullivan, Mousley & Gervasoni, 2000; Eriksson, 2013). Qualitative observation as a research method allows for the viewing of the natural setting and reduces the probability of obtaining a one-sided view if one was only to utilize interviews as a method. It allows for observations and focus on particulars, “including such things as clarity of presentation, lesson organization, student responses, etc.” (Harris & Cullen, 2008, p.62). The observation method made possible the visualization of the communication process within the classroom by making it possible to pick up on interpersonal interactions, peer-to-peer communication, formal and informal interactions, verbal and nonverbal communication, stimulation or dissimulation of students participation and pre-requisites.

For this research, the aforementioned data collection method was applied, where the observer took on the role of observer-as-non-participant with technical aid, which Johnson & Christensen (2013) describe as making participants aware of the observation occurring and participating in the classroom by being present in one or two lectures, while serving more as an observer. This Lundgren (1972) states, increases the reliability and stability of the observation. The disadvantage of this being that obtaining an insider’s view is a bit more difficult, while it is advantageous in that the researcher can maintain neutrality and objectivity. Furthermore, in conducting the observation, the guidelines of establishing rapport, not promising anything, not being obtrusive, alert and so on, introduced by Johnson & Christensen (2013) and Bryman (2012) were followed.

The system of analysis of the observation is theoretically built on the models of communication and not the content of teaching. Observation supplemented by field notes and audio-recordings allowed the possibility of keeping track of the communication and coding the participations. The analysis revolved around initially transcribing and tabulating them in an excel sheet, which included a column with the time, the speaker, the speech, and a comment (if one was seen as necessary). An example is provided through Table 6, wherein one can see the structuring of the transcription. The qualitative analysis of the transcriptions occurred by identifying the monological and the dialogical traits of the communication in the classrooms in accordance with the teachers methods of initiation and their feedback described by Nystrand (1997; Eriksson, 2013) and McMahon (2012).
To track the speaker, depending on their seating, the students have received alphabetical letters based on their gender (B for Boy and G for Girl) and different numbers. The teacher was noted with a ‘T’. While when numerous students spoke simultaneously a mere ‘S’ was noted for ‘several’. Thus, when transcripts are presented in the findings, B’s, G’s, S, and T will represent the speaker. The structure of Sara and Simon’s classroom are visualized below in Figure 4 and Figure 5.

Figure 4: Classroom structure of two observations in the Sara’s physics classroom

Figure 5: Classroom structure of two observations in the Simons’ physics classroom
4.2.2. Semi-Structured Interview

Construction of interview questions for the teachers after the piloting of the observations relied heavily on the guidelines introduced in the book ‘interviewing as qualitative research’ by Seidman (2006) and were loosely based off the TALIS (n.d) teacher questionnaire. Seidman (2006), who stresses significance of context in understanding behavior, explains interviewing as a process of meaning making as it is through interviewing that one can make sense of stories. To him, “interviewing provides access to the context of people’s behavior and thereby provides a way for researchers to understand the meaning of that behavior” (p.10) and it is through this that the actions of a person reflect the meaning people have created for that experience. In a desire to attain the teachers’ meanings, the researcher found it reasonable to use semi-structured interviews.

The structure of the qualitative interview chosen was semi-structured which was to obtain an understanding of the frame factors of communication from the teachers’ point of view. While most of the questions were written – Appendix B: Interview Questions -, I wanted to leave room for flexibility in asking follow up questions for answers that the teachers had provided and to leave room for the teachers to expand on their thoughts and ideas (Eriksson, 2013). A mere ‘aha’ would at times make the teachers add to their previous statement. The method of interviewing is used most often in the education process when the study requires background or a particular point of view. The scientific reliability of interviewing as a method is long disputed; however, what can be agreed upon is that interviewing creates ground for investigation. Johnson & Christensen (2013), list the strength of a semi-structured interview, or interview guide approach15 “the outline increases the comprehensiveness of the data and makes data collection somewhat systematic for each respondent. Logical gaps in data can be anticipated and closed. Interviews remain fairly conversational and situational” (p.230). While the weaknesses: “important salient topics may be inadvertently omitted. Interviewer flexibility in sequencing and wording questions can result in substantially different responses from different perspectives, thus reducing the comparability of responses” (p. 230).

The questions were focused on three main issues. The teachers’ professional and academic background, both pre-service and in-service training. This served to understand the type of

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15 Interview guide approach according to Johnson & Christensen (2013) is when the interviewer has planned on exploring specific topics by asking certain questions. While they do not have to be in the same order, the interviews conducted for this research posed the questions at a fairly similar order.
training they had obtain – if any at all. The second phase of questions focused on the teachers, the curriculum, and other governmental documents. This phase sought to obtain their knowledge of these documents to understand whether they were in concordance with them. The third phase of questions were in regards to the actual teaching in the observed classrooms to get a grasp of how they themselves saw the process. By analyzing the teachers professional background, understanding and access to legal framework, as well as the class structure itself, through the teachers own perception, the interview will seek to explore the teachers experience and perceptions. Similar to the observations, the interviews were audio recorded, transcribed on excel, and reviewed the same day that the interview was conducted. The analysis of the data consisted of categorization of the teachers responses based on the insight that they provided.

4.2.3. Field Notes

Johnson & Christensen (2013) explain the importance of writing down field notes and making desired changes to them as soon as possible as memory of important aspects might fade. Field notes were kept during the observations and interviews, as qualitative data collection encourages extensive use of field notes. The field notes were complemented by the drawing of a seating chart, Figure 4 and Figure 5, where each individual student received numbers based on their gender and seating. This organizational structuring occurred during the first five minutes of class that were consistently noisy. This helped in keeping track of who was speaking, how they were saying it, and in analyzing the rapport between the students and the teacher. Additionally, this also served to analyze the amount of participation of each student. These were all done with commentaries through field notes. Notes were also kept during the interview, in that they served to write down future follow up questions, so as not to risk the possibility of forgetting the question or interrupting the teacher.

4.3. Reliability and Validity

Prior to commencing this section, it should be noted that the researcher recognizes that application of validity is primarily attached to the quantitative research method (Seidman, 2006; Bryman, 2012). However, Johnson & Christensen (2013), Patton (2001) and Creswell (2014) argue that its application to qualitative research can transpire, but the term refers to signify the trustworthiness and credibility of the research. One way is to apply descriptive validity, making
sure the researcher is accurately reporting what was said and heard. To ensure this, the study transcribed the recordings of the observations and interviews verbatim. Additionally, to refrain from rephrasing or paraphrasing during noise or inaudibility of the recordings, note was placed on the transcript “noise/inaudible”. Availability of the transcripts to the participating teachers also ensured to increase its validity.

Interpretive validity refers to the ability of accurately portraying the participants meaning. During the interviews, this was often aided by the follow up questions that allowed for a fuller understanding or clarification of the participants meanings. The recordings of the observations allowed the researcher more time to follow the nature of the class communication that would provide a valid account of their perspective by observing the verbal and non-verbal communication.

Theoretical validity, which can be promoted through extended fieldwork strategy, multiple theoretical perspectives strategy, pattern matching, peer review and critical friend. This study sought to utilize the supervisor and a critical friend. The extended field work strategy, while extended referring to a longer period in collecting data, having been in contact with the teachers several times before the observations and interviews allowed for a more authentic atmosphere and reduced the probability of having participants provide to be a desired performance.

Internal validity, refers to the warranty of the causal conclusion drafted from the research which can be strengthened by usage of multiple methods of data collection which were utilized for this research, multiple data sources, and ruling out alternative explanations. To Johnson & Christensen (2013), “a successful researcher will always make a list of rival explanations or rival hypotheses that are possible or plausible reasons for the relationship other than originally suspected” (p. 304). This was done throughout the data processing period, and were later drafted in the thesis and added as either limitations, reflections or recommendations for further research depending on the information obtained.

External validity, important for generalization, however, this is rarely the purpose of a qualititative research, and this tends to be this methods weakness (Johnson & Christensen, 2013; Bryman, 2012). This was also the weakness of this study. As the sample size was small, the study does not serve as a representative of all 12th grade physics classrooms in Kosovo.
4.4. Ethical Considerations

In accordance with the Belmont report, the study sought to follow the three ethical principles applicable when conducting research with humans: respect for persons (for their autonomy and their privacy), beneficence (to do no harm to the person), and justice (equal fairness to all participants) (Seidman, 2006, p. 54). Conducting the study required building up rapport with the participating teachers and obtaining consent. This step began with e-mail correspondence with the participants to set up a meeting, which served to introduce the research and researcher to the participant so that they would feel more familiar, and at ease (Stanny, Wheeler, & Kass, n.d.). This was done while keeping in mind that too close of a relationship might create barriers during the actual interviewing process and create a “we” relationship in which the question of whose experience is being related and whose meaning is being made is critically confounded (Seidman, 2006). Seidman (2006) suggests active listening, ask to hear more about a topic; explore but do not probe; ask open-ended questions. He further suggests avoiding leading questions; asking participants to reconstruct, not remember, (what happened, not do you remember”?); limiting your own interaction; avoiding reinforcing their responses.

To reduce any ambiguity and ensure the full understanding and cooperation of the teachers and principals, the informed consent form (ICF) was created, Appendix C: Informed Consent Form. The ICF was constructed in accordance with the guidelines of Seidman (2006), Johnson & Christensen (2013), Bryman (2012) and the Yo San University (2009). The ICF constructed for this thesis contains seven out of eight major parts of an ICF, as introduced by Seidman (2006). An invitation to participate, the risks and possible benefits, rights (where confidentiality of records is also included), dissemination, contact information and copies of the form. ICF is in English but translated into Albanian for the teachers (see appendix for English version). The ICF included a brief introduction of the theme and a clause on the participants’ rights of participation and withdrawal from the study. The signature of consent included the principals’ signature to ensure approval of conducting this research within these schools (Seidman, 2006). Within a school, the principal acts as a legal guardian thus the signature was to ensure that the study could be conducted within the classroom with the students being present (while they were not directly the subject of study). Whereas the signature of the teacher was obtained for approval of the observation and interview.

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16 Special conditions for children was excluded as students were only indirectly participants
Chapter V: Findings

This section will present the findings in a qualitative descriptive manner based on the insights provided from the data collection and analysis from the observations and interviews. Evidence from the research suggests that the communication process in both classes varies and that the variation can be partially explained through the frame factors. Sara provides an ID organized instruction shifting towards a more IA organized instruction when there is heavy focus on equations and problem solving. Simons provides a primarily IA organized instruction. The primary frame factors in the orchestration of the communication process identified are: (1) teachers ideological frame factor, (2) their educational opportunities, tied to both in-service and pre-service training, with a focus in the lack of training in natural science; (3) centrally constructed curriculum and its dense structure and stripping of autonomy, (4) external support, referring primarily to school support.

The findings will then be presented in coherence with the objectives of the study. In coherence with the first objective, communication in both classrooms were seen as interactive, but varying in their dialogical and monological nature. In coherence with the second objective, the teachers’ interpretation of the curriculum will be presented. Whereas the third part delivers the findings on teachers’ ideology, professional and academic background.

The classrooms differed slightly. The private classroom possessed a WB, a projector, and four experiment tables at the far end of the classroom. Sara stated that what she found limiting was the fluorescent lights, which made them all [teacher and students] tired, enhanced by the fact that their classroom had no access to windows. Furthermore, the private classroom was small and having a lab at the end of the classroom reduced the space available. Additionally, the chairs and benches are static which incapacitates her from to encouraging group work. Limiting as such, variation of teaching methods.

The public classroom was utilizing a BB. The classroom was bigger in size but in relation to the student number, the class was tight in space. Laboratories were in other parts of the building, although Simon stated that they had just recently been stocked with functioning material. Simon frequently mentions the lack of labs and the inability to provide practical examples to students, but rather having to focus on theoretical aspect. The student teacher ratio was of a concern as Simon had 36 students in the class that were constantly chatting in at least one part of the classroom, creating a difficulty for an interactive environment.
5.1. The Observed Communication Process

Observations in the classrooms allowed for a deeper analysis of the communication process. In terms of the verbal participation in the classroom, the students were participating mainly through teacher initiated questions and answer sessions. McMahon also acknowledges this but states his concern on its limiting effect on knowledge content.

“Classroom talk often takes the form of question and answer sessions in which the teacher asks questions and evaluates the children’s responses in a form described as triadic dialogue or initiation-response-feedback which help teachers control behavior, but though which they also limit and control the knowledge content” (2012, p. 1690)

The type of the questions and responses were identified through the observations and their classifications were enabled through the literature review that distinguishes between factual or constructive questions involving the analytical and evaluative process (Eriksson, 2013; Harris, Phillips & Penuel, 2012; Hyman, 1977; Nystrand et al., 1997, Thomas, 2013). The Nystrand (1997) introduction of features of monologically and dialogically organized instructions shown in Table 1 will serve to analyze the communication process. It will be aided with the McMahon’s (2012) study that added the interaction of communication, ID, ND, IA, NA, Table 2. The analysis of the equations and problem solving sessions will not focus on the content of the lesson or the actual equations but on the communication process elicited by the teachers. Insight of the observations are presented in relation to the overall classroom participation in the communication, followed by the communication initiated through questions. This includes the findings of interaction during equations and problem solving in the classroom.

5.1.1. Participation through Talk and Questions in the Classroom Communication

In referring to the Nystrand (1997) and McMahon (1997) this study found that dialogically organized instruction was recurrent during teaching in Sara’s but reverted to monological when exercises were at play, while Simon’s communication was intermittently monologue rich. Participation in the classrooms could be voluntary, in that, when asked a question the students volunteered to answer by raising their hands, or involuntary, where the students were chosen to
answer the question that was directed to them individually. Thus, when referring to voluntary and involuntary reference is on the latter definitions.

Sara’s classroom

The first observation showed intensive participation from five boys (B1, B4, B5, B7, and B2) with girls participating at a minimum and nine students not participating at all. Participation through talk was rather interactive, dialogic and voluntary during the first lecture which focused on touching upon previous knowledge, obtaining students view and helping them figure things out. Initiation of communication was structured through a question by Sara wherein she asks the students for their own meaning of electrostatic ‘What do you think? Analyze this word, electrostatic. What does this mean for you? Electrostatic? If you want, you can separate it in two words’. Sara provided enough time for B2 to develop his thought on the meaning of electrostatic as she does not interfere when he pauses to structure his thoughts, and utters “uhmm” as a signal for him to continue.

B2: By static, I know that it is something that does not move...Does not change...always the same.
T: Uhmm.

B2: Electro, I think is the charges, so maybe... The charges that does not change? They are static

Reversion of traditional roles occurred partially during this lecture wherein through interaction, collaborative structuring of meaning of electrostatic occurred. The interaction commencing after the above question is structured in a form of probing for students meaning and not recitation of facts on electrostatics. Students are given space to decipher their meanings through real life examples and collaboratively add to each other’s comments. Sara’s participation in this conversation is minimal. She serves as an initiator through the primary question, stated above, and while students add their examples and understandings of term, she merely acts as a coordinator, choosing who speaks next (depending on their raised hands). Upon providing examples on everyday usage of electricity, she asks the students ‘why can you feel the electricity’. Wherein the students provide their examples and her feedback on the students’ comments is that of a positive confirmation ‘very good’, ‘yes, that’s another example’ before giving the next student a chance to speak. Excerpt provided below show student examples in the beginning of the discussion and in the end (discussion on electrostatic was longer).
Observation I: examples on electrostatic

B4: when something is charged with electricity and you touch that maybe that ...when you rub your feet on the carpet

B5: or sometimes...body contact, because we know that a body actually has energy, and sometimes it transmits it to the others and the other will feel it

B1: also I think...rubbing balloon in your hair, and the same time it gets the ability to stay, to hold in one position without...the electricity transfers from the body to the surface of the balloon.

B2: at my place there is this one for ice cream, so I always...there is always electricity there, like when you do like this (demonstrates) you feel electricity.

B2: The other example, we did in elementary school, I know that we did the pen one, in the hair, like when you rub it a lot so that when you grab a paper, and the paper would stick to the pen.

Observation I: examples on electrostatic continued

B7: miss I would like to say something about the example mentioned with the car, because you can actually set your car on fire, from static electricity. When you go to fill your car with gas and you release your static electricity, if you touch the hose with your hand, you can actually. It might spark. Create it from your static electricity, and actually ignite the gas and burn your car. I have seen a documentary. This happens a lot, in the United States, like they have been. All the gas station has been burned, by the simple electrostatic.

B5: I think that happens because we’re good conductors. Because we demonstrated...Like from the lighter?

T: you transferred the electricity. Because we are a good conductor. Good, so guys this is a very good example that you show us, and actually... And all of these are the examples of electrostatic... Can somebody tell me what an atom is? What are the parts of atoms? How they are charged? Everything you know about atoms.

The above excerpts of the students’ provide an insight to the students’ development of meaning. Through examples of everyday life and with little interruption from Sara, they structure their understanding of electrostatic and add to each other’s comments. They are further seen developing connections and structuring their thoughts, as B5 is ‘think that happens because we’re good conductors. Because we demonstrated... Like from the lighter’. Continuing
with the discussions, they reach to gravitational forces where she asks them to say “Everything that you know about gravitational forces”. This conversation sees more engagement from Sara. Upon concluding the discussion, she provides a summary and connection with electrical force, which B6 connects to his notion of magnets through his comment ‘just the same as magnets’.

The second lecture, which focused on solving equations, saw a more evenly distributed talking pattern between all the students and only three nonparticipants while the instruction was more monologically organized. Here she engages in a question and answering session, lasting approximately five minutes before handing out a worksheet with problems. These questions differ from the previous lesson as they are more factual, representing a review of the previous lessons and an introduction to the worksheet problems. The following excerpts are from the questions in relation to atoms and columns law.

**Observation II: Sara’s Q/A with students**

* T: ok, in a normal atom, how many electrons are there compared with protons?
  
  *G1*: it is the same
  
  T: it is the same uh! Because… [Inaudible] …how do like charges behave?
  
  *G2*: they repel
  
  T: unlike charges?
  
  *G5*: they attract
  
  T: what does it mean to say that the charge is conserved?
  
  *G7*: it means that… (Inaudible)…
  
  T: very good
  
  **B7**: the preservation of charge, which we learned yesterday. That says that charge cannot be created or destroyed, only transferred

**Observation II: Sara’s Q/A with students continued**

* T: can somebody define columns law?
  
  *G7*: it is the same just like…but this one only says for electrical charges
  
  T: very good; and using columns law it says that… (Provides the definition of the law).
  
  T: what is the SI unit of charge?

The questions are seen to be factual of nature as they are pursuing the students’ amount of knowledge of facts rather than their understanding of the terms. Reinforcement of key points are key in this Q/A session for Sara to continue with the problems in the worksheet. She then gives them fifteen minutes to work on the worksheet on their own or in pairs and uses the time to walk around and observe and answer questions that they may have. Throughout the fifteen
minutes, there is high chattering among the students, where they are helping each other out, or explaining different aspects of the equations. Questions posed to Sara in this instance by the students are practical ‘miss, what was that…?’, ‘miss, do we need…?’

After fifteen minutes, the students begin volunteering to solve the problems. They are picked as they raise their hands. While B7 reads his answer, Sara asks him how he got to the number 0.02. While her question was angling for the students’ pattern of thinking, she did not wait long for him to answer but instead added, ‘You divided by four, right?’ Thus, she did not provide enough time for the student to respond to unveil his process. After several problems solved, B6 goes to the WB to solve another problem. At this point the teacher sits and is focused on helping B6 solve the equation. During this time, the focus is on B6 and the other students receive little supervision or support in understanding the problem that B6 is solving.

Traits of fast-paced factual questions were amplified when dealing with equations. The questions posed were practical and methodical in nature, serving to construct factual grounds for their introduction to the equations and problems. The aim was seen to keep the class in line with the goals set for the lesson by covering key points necessary for solving the problems. However, the over-all observation showed that when equations were not involved, grounds for the development of dialogically organized instruction was more evident as the communication process involved the students’ perspectives. Furthermore, indication of students participating in the lesson development was seen when during observation II, before finishing the lecture, Sara informs the class that during the next lecture they will watch a ‘weird’ video that B8 had found in relation to electrostatics. This shows that student participation in the construction of the class lesson is taken into account.

Sara allowed students adequate room for students’ contribution but did not demand their participation by calling the students names out to have them answer a question. Sara however did seem to notice that column III were less participant (predominately girls, see Figure 4). Whenever students sitting in column III raised their hands, Sara would choose them. At one point during the second observation, after posing a question, despite several boys having his or her hands up, she looked towards column III and asked, “Somebody else?” She waited a while before choosing a boy from column I or II. This showed a clear indication that she was aware that column III was less participant, however her awareness of the difference in gender participation (considering column III was predominately girls), was left unknown.
Students’ questions in both observations however were low in numbers and were mainly one-on-one communication, occurring when Sara was walking around the classroom. Mainly the questions were practical or asking to repeat something. Only one question was identified as a question related to the learning:

B5: does that mean that when we get like uh, other sources of electrical charges, we feel it and...Because it, it is uh, similar?

Simons Classroom

Structure of the communication from two observations in Simon’s class was similar. The participation through talk was interactive but monological/authoritative and was heavily based on questions and answering sessions. The students would raise their hands but were often involuntarily chosen as Simon saw this as a method of student engagement. Teacher initiated questions served to commence participation and immensely control the discourse. Students were chosen one at a time to answer a series of questions where answers were often met with additional fast-paced questions. Throughout the lecture, the question and answers session became more intense, the students simultaneously began to shout out answers, rendering them inaudible and untraceable. Further yet, it made it impossible for Simon to choose the student to answer the question posed. From that point forward, fast-paced questioning was conducted between the whole class and Simon. This appeared to be a common occurrence as they were all accustomed to it, and it often started as if pre-arranged.

The line of questioning was rather factual, and fast-paced with a series of questions for each student, which were often chosen by Simon and with very short pauses for response before another question was raised. However, the teacher frequently gave a short positive feedback in the lines of “good”, “that’s fine”, confirmation and repetition, “that’s right, because it doesn’t have electricity so it’s easier to pass the barrier”. An interesting factor is that students always stand up when speaking, or are told to do so if they do not.

The lessons initially began by going straight into the topic. The first thing he said to the class subsequent to taking attendance was stating the topic of the day, “law of conservation”, and “trans uranium elements”. This was followed by a short introduction of the current topic, trailed by questions that served to engage the student by adding to his statement and touch on the student’s previous gained knowledge. Questions were factual in nature but allowed students to volunteer. Below excerpt is from the first questions posed to the class in observation I where Simons aim is to review the concepts through recitation so that students have a basic
understanding of the concepts before shortly providing summaries. There he poses a question to which G2 volunteers. She provides an answer, as it is not what he is looking for he responds,

T: Yes it does. Again, what is nuclear reaction? Again, I do not like the answer
G10: Movement from one nucleus to the other
T: Movement from?
S: Movement from one nucleus to the other
T: ok, the nucleus that hits, does it have to be stationary or in motion?

The above Q/A continues with G2 but the entire class is seen answering the questions, making G2’s responses inaudible. The questions continue further and are assisted with equations that Simon writes on the boards. As he is looking for certain answers rather than the students understanding of the concepts, the students begin to guess the answer. Several are heard shouting various answers to questions he poses. The following excerpt shows the development of the interaction between Simon and a few students in their attempt getting the right answers that Simon is looking for.

Observation I, Simon asking questions the class continued
T: (writes down an equation) is the nucleus moving?
G20: Stationary?
T: besides kinetic energy, what other energy has it gained?
S: potential? Mechanic?
T: no, no, listen. This thing is not moving. It does not have kinetic energy. Does it have another energy?

Observation I, Simon asking questions the class continued
T: what can we extract from the second?
G2: MC
T: why M?
G2: C, its C

Here he is seen probing them for the answer. Rather than attempting to understand why G2 included M, he merely asks the question ‘why M?’ and as soon as she changes her response, he continues. His next question refers to an equation he writes down after the above correspondence, ‘it is called?’ After not receiving a response, he changes the question to ‘when it releases energy, the reaction is called?’ The students still do not understand but revert to guessing. Several are heard saying ‘Exo, endo, exo, endotherm’, to which he further continues,
T: good. When it releases energy, it is called exothermic
S: yes
T: Every time it releases energy, the gained nucleus is unstable. So the reaction continues. If the center is...
S: endo...
T: endotherm is?
S: uhmm
T: internal
S: internal

The above excerpt from the transcript shows that his feedback was rather unconstructive and illustrates his quest for facts rather than trying to find whether the students understand the information. This set the students in the motion of guessing the answers.

T: which one is more harmful?
S: gamma
T: x-ray or gamma?
S: gamma, x-ray, gamma, gamma

The second observation showed similar results of recitation applied as a learning method. The intensity of the fast-paced questions would only further increase as they went deeper into the lecture. The following occurs in a span of two minutes, between Simon and three involuntary students,

**Observation II. Simon asking questions to G18, G11, and B3**

T: Ok, G 18. Who created the atom model?
G18: Thomson
T: How did he call it?
G18: He called it porridge (plum pudding) in a spherical form that is surrounded by negative electrical particles but had... (inaudible/noise/speaks too fast)...and to confirm this in 1919, he crashed the particle with alpha positive rays.
T: No, you can use any type of material
G18: Yes
T: What did he see?
G18: He saw that after hitting them with alpha positive rays, they deviate from their previous direction and in this way; he established that they contain positive electricity
T: Good. G 11, Rutherford’s method is called?
G11: [stands up] is also called a planetary model
T: Planetary model, which has a resemblance to what?
G11: Solar system
T: Example, the mass, where is it concentrated?
G11: Mass? It is concentrated in the nucleus 99.9%
T: Ok, good. What takes up the biggest part its space?
G11: Electron cloud
T: Its electron cloud. Why do the electrons move around the nucleus?
G11: because of the force of attraction
T: what is its flaw?
G11: its flaw is that these electrons do not change the level of energy but the speed...
T: your turn will come (speaking to a student who is making noise in the background). So even because the atoms takes or gives energy?
G11: the electrons do not change...
T: ok, good. This theory, is it right or wrong? [Turns to B3. B3 stands up]
B3: it is wrong. Meaning Bohr suggested it... (Inaudible)...It returns to its previous state17
T: what does he say? When the atom takes energy, what happens?

A common occurrence during this fast-paced questioning was asking the student a follow-up question before they had even answered the first one. While B3 (above) was answering the question on whether it was right or wrong, the moment Simon heard the correct words “it is wrong...”; he built up the follow up question “what does he say?...”.

Interruptions of students was common. This is seen when G7 and G11 were speaking. The students slowly take up the time intended for one particular student. From making the one students answers inaudible, they transition to answering the questions as a class. While Simon directs a question to G7, several students answer ‘no’ to which G7 begins speaking louder and faster, but is interrupted and eventually make her answers inaudible as they all chip in to answer. G11 is seen telling the other students to let her answer on her own as they begin to interrupt her as well.

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17 The questions continue with B3 but were not included
Observation II: Simon asking questions to G11

T: when do you have equilibrium?

G11: when, wait just a second [says to her peers who start answering in her place].

When the light...no, no, when the temperature is constant

T: when?

G11: ...heat (several say heat with her)

T: I could take 10 degrees Celsius. Is it equilibrium?

G11: no

T: no. when?

S: (inaudible answer)

Simon utilizes equations and problem solving throughout his lessons. During reviews or Q/A, very often a student is assigned to go to the BB, where Simon dictates a problem and has them solve the equation while he continues asking questions to other students either in relation to the equation being solved or related but not direct questions. He utilizes the equations to expand on what they had learned so far.

T: Let us take an example. Write down [dictates equation to G6 who goes to the BB]

T: Does the atomic number change when it comes together with the neutron? [Question to the class as G6 is working on the problem]

At times, the choice of the student seemed to be as a disciplinary action. After having chosen G21 to go to the BB to solve an equation, which she successfully solves it, she is sent to her seat and Simon picks B9 to solve the succeeding problem, as he was caught chatting. Noticing that B9 is having difficulties in solving the problem, rather than providing assistance, Simon asks B9 “Why aren’t you writing? You are supposed to find the lambda...Don’t you know the answer? Go, sit down”

Gender disparity in participation was viewed in both classrooms. Sara’s classroom, having an almost equal number of girls to boys (Figure 4), saw a very low participation from the girls. Whereas, Simon’s classroom voluntary participation noticeably favored the girls, however, due to the unbalanced gender distribution 26G/10B, a correlation could not be established on whether this was merely due to the unequal distribution or whether it was gender related.
However, as this was not the aim of the research, adequate conclusions cannot be drawn and will be addressed under Chapter VII: Recommendations for Further Research.

Evidence from the observation showed that both teachers conducted few eliciting moves in extracting or encouraging student questions (Harris, Phillips & Penuel, 2012). Students’ questions in both classrooms were low in numbers. Contrary to Simon, Sara acknowledged students contribution and encouraged their ideas, but fell short in influencing students to pose questions that would serve to strengthen students understanding and their thinking. Nonetheless, both fell short in eliciting student questions. Besides the one question posed in Sara’s class where the student is trying to make sense of a topic “does that mean that when we get like uh, other sources of electrical charges, we feel it and... Because it, it is uh, similar?” the other questions were either procedural, “should I release from brackets”, “what’s the name?” served to volunteer “teacher\textsuperscript{18} can I?” or served as guesses, “is it carbon?”.

Distinguishing the interactions in Sara and Simon’s classroom, the findings showed that both teachers were predominantly interactive. Sara’s classroom leaned towards ID, wherein the students were provided space to construct their opinion, and her open-ended questions led to students adding on each other’s thoughts with little participation from her. This changed during equations and problem solving sessions, wherein the communication was mainly IA. Whereas Simon’s communication structure was predominately IA, wherein fast-paced fact questions that required factual answers were posed.

\section*{5.2. Communication, the Curriculum and Planning}

To better understand their teaching and the possible frame factors, questions in relation to their preparation and planning for the class, along with questions on the curriculum were posed. These complemented one another as preparation and planning helped in structuring the micro aspect of them having to plan each class, to further look at the macro perspective of how the goals of official institutions (see Figure 3), through the curriculum, interferes with their daily set goals.

\footnote{Teachers at a USE level in Kosovo are called professors thus, originally, the student said professor. However, as the term ‘teacher’ has been used throughout this paper, to avoid confusion, professor, was changed to teacher when referring to any pre-university teachers. The term professor will only refer to BS and MS professors.}
5.2.1. Preparation and Planning for the Class

Planning requires a great deal of time and involves the teacher’s dedication. While both teachers state the same, which is that good planning and preparation requires a minimum of one hour for each lesson prior to the class lesson, the disruptions to the plan varies greatly between the classes.

Sara’s preparation and planning

Sara is obligated to stay in school from 7:30 to 16:00. Her planning and preparation occurs mainly at home, as she is occupied with school activities during the day. On being asked why a plan would not be executed she stated that students understanding of a topic could influence the execution, and how she believes it is of greater importance for students to fully understand a topic, rather than go through it to cover the curriculum.

...for example, you go into class ready to teach a new topic but a student comes with a question related to homework that they had trouble solving/understanding, so that takes up time in going through... You plan to finish a unit but you see that the students did not understand it, so you continue with the same unit during the next class hour. In my opinion, it is much more important to go through something thoroughly, and not just go through it to finish the unit, with disregard to if the student understood it or not.

During the interview, she explained how she utilizes a couple of weeks at the beginning of the year in September for review sessions to test the student’s previous knowledge and interest in the course.

...I see how well they can work with numbers, how well they can use formulas and scientific notations and what type of general knowledge they possess. By doing various tests, holding debates, to see where their interest lies and where they are with physics...

Due to the insufficient amount of class time, not all the topics assigned for the year can be covered, thus, she devoted the month of May to presentations, where students themselves work on the topics that they could not cover to obtain a general knowledge.

In Sara’s class, she started both of the class lectures with a summary of what they had learned, an introduction of what they are going to learn for the day, how they will go about learning this, and how it can be applied. After posing several questions to the students, she emphasizes the tie to chemistry and what they had learned there. Noticing this in the observation
the question was posed: “…I noticed in class that you were also speaking of chemistry. Did you know that they had learned these things?” to which she responded that the teachers coordinate with each other to establish what has been covered so far, and what remains.

**Simon’s preparation and planning**

Simon is obligated to stay in the school for 20h/week. In the public classroom, each class has a big academic records book (ditari). The grades and attendances are all tracked in that book. This book is kept in the teachers’ lounge (as the teachers do not have personal offices), and is taken by the teacher who is currently teaching that class. Thus when asking Simon of administrative tasks that he might have, he mentions ‘ditarin’. During this conversation, he mentioned that the main method of assessing students is through oral examinations. This is an old method where the student often stands by the BB, and answers the questions posed to them. This is a method that is rather time consuming, which he seems to be aware of, albeit he deems it necessary, as with tests, students cheat. When asked if plans are executed, he confirmed that they are and that the principal monitors them from time to time.

> Yes, the principal needs to come and supervise. I have the flexibility of changing planning 10-20%, but it needs to be close, I cannot completely miss classes or chapters. It could be times where I could not cover something due to a national celebration or something.

When asked if he thinks there are any classroom factors that might disrupt the plans he answered that one of main one is students skipping class. According to him, it occurs in approximately 10% of class time. Skipping influences the planning for classes as it reduced the amount of time per semester that a teacher can spend on certain topics, or even requires merging of topics.

The class lectures for Simon began by introducing the current topic of the day, and providing short information on it. His method of introducing a topic is aided with question posing. He introduces new themes, asks a few questions, and then compiles a short conclusion, before continuing with the process. His reviews are more focused on the current lecture.

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19 A common trend but not a researched one, where the entire class decides to leave the premises of the school for either just that particular subject, or the entire day.
5.2.2. Interpretation of the Curriculum and Guidelines

The curriculum places great influence on the planning and execution of the teaching. While the preceding section provided information on the teachers’ preparation and planning, the following section will provide their insight to the curriculum and its influence in their teaching. The private school has the liberty of designing its curriculum; however, it does still need to be in alignment with the Kosovo curriculum. The curriculum was identified as a frame factor due to the density of requirements coupled with the limited time.

Sara and the curriculum

When asked to explain the curriculum in her own words her comprehension on the curriculum demand from the teachers were evident. She was aware of the fundamental goals of the curriculum. She refers to the need to help students create their own meanings and understandings through interaction,

...It asks that classes be interactive with the students, interactive in lessons that help develop the student’s critical thinking and not just, ‘I’ll write down the formulas, you learn it and that’s it’. Develop so that they understand it based on the examples. I am aware that they will not all become physicists but to understand it and be able to relate it to everyday life. In that sense, I mean interactive.

When asked if she finds that the curriculum helps or limits in teaching, she indirectly provides a positive response by asserting that as a teacher, she herself has the influence of adding, and altering portions of the curriculum and make it suitable for the current students. She does this by devoting September to testing the students’ level, so that she can modify the curriculum to adapt to them, rather than have the students adapt to the curriculum.

The good thing at this school is that as teachers we can intervene in making some changes to the curriculum (not the core structure of it), but to change these deficiencies. For example, I notice that there is a chapter that is related to chemistry, and that they are learning in chemistry, I in turn do not deal with that chapter but focus on other things. Meaning, we have the opportunity to work on it each year to make some changes. Depending on the student’s level. That is why September is also, or at least I spend September by mainly testing their base, previous knowledge, interests in the course and then based on that try to structure the curriculum. This
instead of saying, this is what the curriculum says and whether you know it or do not, it is irrelevant. I try to adapt the curriculum to the students.

She emphasizes the importance of the curriculum to her teaching and states that it serves as a guideline for her. On being asked on what the curriculum personally represents to her, she stated that it is “the base requirement for a teacher” and that as once the book was seen as the main teaching tool, now it serves as a guide, but that one cannot constrain themselves to using the book only.

Based on the curriculum you can then extract all the worksheets, your daily plans, all. It is the base, I would not say the bible or Koran, but that is what the curriculum is. You extract what it is that you want

Her view on the curriculum is of its assisting propensities rather than limiting. As she is allowed to adjust parts of the curriculum to suit the students’ level.

Simon and the curriculum

Working in a public school, he explained how they have to rather strictly abide by the curriculums monthly and yearly plans and have no regulating authority. He additionally affirmed that he was aware of the KCF but that he was not yet trained for it. His answers throughout the interview were concise which resulted in the questions presented being posed differently to the questions posed to Sara. Nonetheless, the extracted answers provided enough information to obtain his point of view on the curriculum. His disapproval of it was evident. He further mentions that the students are overloaded with too many subject and too little time, leaving them unable to fully grasp the notion of one subject. On being asked on what the curriculum personally represents to him, he stated:

Inaccurate, because it overloads the students, the students have 18 subjects. Students have a difficulty remembering the teachers name let alone the subjects. It [curriculum] is much overloaded. They [students] have natural science courses, but they have reduced the percentage of natural science. They [MEST] have focused on social science. Very inaccurate

The overloading of the students, (according to the curriculum they have 17 classes) while it resonates as a negative bearing, the issue has not yet been researched in Kosovo. He further mentions dense structure of curriculum and the time factors as having a negative bearing. On
being asked whether the curriculum provides any space for creating an interactive classroom, he referred to the density of its requirements,

*The curriculum does not give you that much space, the old one. For example, there is not a set time for examination, but you have to do that. Therefore, you need to find time within that space. Therefore, I need to squeeze a unit to leave room for examination.*

*That is bad. There should be room*

Considering that they have to abide to the curriculum strictly, the concerns raised by Simon are genuine and require deeper analysis. Time constraints from the curriculum were seen as great limiting factors in both classrooms. The goals of the curriculum to cover all of the relevant topics in time while simultaneously providing students a dialogically organized communication supplemented by the fact that being teachers of 12th grade students they are to prepare students for the Matura exam, sets ground for the establishment of class lectures that focus on obtaining facts. Sara who had a deeper impact on the structure of the curriculum was able to provide students with more class time. However, this consequently left her with students having to prepare presentations for the month of May, on the topics that they were unable to cover during class time. Whereas Simon, who stated that they strictly follow the curriculum, was unable to provide students with the necessary time.

**5.3. The Teachers Background and Their View**

This subsection outlines the influence of the teacher in the communication process in both classrooms. An important factor in establishing grounds for researching the communication process is in analyzing the teachers’ background and their beliefs. The findings suggest that the teachers serve as frame factors of the communication process in these two classrooms. Evidence gathered through data collection are in concurrence with the literature review that suggest teacher’s background and in particular, their beliefs, and training play significant roles in the elicitation of the communication process (Wyatt, 2016).
5.3.1. Teachers View of Their Academic Background

Due to rather similar responses and their summarizing nature, the following section will be presented through a merging of the teachers responses rather than dividing the responses in Sara’s and Simons view as has been done in preceding and succeeding sections. Their professional and academic background is shown in Table 3. In terms of their personal experience at their pre-service trainings, they both showed similar concern for their rapport with their professors. While stating that it was satisfactory - albeit both stated that they might have simply been accustomed to that type of relationship - the teaching process was traditional and the rapport was distant. They mentioned the clear distinction of separate roles in the classroom “I am a professor and you are the student”. Simon interestingly mentioned the need to be careful around his undergraduate professors, or rather with them,

Hmm…they communicated and advised but there was a distance. We did not have a close relationship. Still, we had the impression, professor…we had to be a little careful

Similarly, they both referred to the teaching methods as being very teacher-centered, but said that it was all due to the times, that it was merely how things were conducted before the war. Sara responded with the following:

I completed my undergraduate degree in 1997 so it was a bit more…when I completed it; it was a bit more traditional. Or maybe it just depended on the professors own way/nature

While Simons focus seemed mainly to be in the practical aspect of the teaching, referring to the lack of labs:

We had small chances of utilizing labs. It was mainly theoretical. Some classes for example we used electricity, mechanics etc. However, for nuclear physics etc. there were not opportunities because we did not have the necessary labs and equipment. School labs, there were a few. But mainly theoretical

In regards to pre-service training, additional questions were posed to Sara due to her currently being enrolled in a Master’s program in teaching at the FE. The following segment will present the findings of her experience. While she initially said ‘yes’ when asked whether the teaching at her Masters applied learner-centered teaching methods, she quickly retracted and mainly credited her current employment for helping her develop and utilizing more progressive teaching methods. She further tied this to a disagreement she had with her professor
at the Masters’ program, which ended with her ideas not being taken into account and the professor ending the discussion with a comment on how his word is final.

...that at one point he said “a je me mu a me arushen?” (Are you with the bear or me? Meaning you are either with me or against me). I just stopped; ok I am with the bear. That is when I saw that it is a bit [pause]... but there is a lot of work to do there still. There is room for improvement at our school too, but there is a lot of work to do in our schools [referring to public schools] in Kosovo.

She continued by tying it to how teachers in Kosovo [referring to public school teachers] are provided with little professional development and support. However, despite this she states that Kosovars in general have a habit of complaining which is not in agreement with the short amount of time they have to spend in the schools, “I do not mean to offend in any way, but the time they [public school teachers] spent on work, they do not give as much as they should”

In relation to the learning environment at the Master’s program, she stated that they tried to be interactive, but that it was mainly applied as a prototype and that they enforced the application of one way of doing something, rather than applying different methods.

The two teachers’ testimony on their experience of pre-service was similar and attested to the heavy application of teacher-centered and monological communication process. The literature review on the teaching at all levels in Kosovo provide similar results. While in addition, the FE, which has been re-constructed to provide future teachers with the knowledge for developing student-centered learning is itself plagued by teacher-centered methods.

5.3.2. Teachers View of Their In-Service Training

Sara and Simon have been subjected to the flux of in-service trainings offered after the war. Their current subjection to in-service training however seemed to be different. While Sara is frequently subjected to trainings organized by her employer, for Simon, the public schools are rather dependent on the ministry.

Sara’s in-service training experience

Sara mentions that she was offered teacher training after the war, which were in relation to the development of students’ critical thinking. She states that the private school constantly organizes mandatory trainings and workshops, and that they have even requested a training
from the ministry. Internal trainings related to professional development are organized approximately 3-4 times a year. The school also calls in outside trainers and peer-to-peer training where teachers share their experience of a particular training with the rest of their peers. Additionally, peer to peer monitoring occurs, to which Sara added,

Yes. I am also the head of the math and science department at the school, so it is also part of my job to do so with my department. But we also do it willingly, even if we are not in the same field. So, I can sometimes go to my colleague to see what she is doing, and possibly copy something that I liked or a suggestion. In a way, you could also say that they are mandatory from the school...

On being asked whether there have been any trainings that she wanted to participate in but couldn’t due to an unspecified reason, she responded that she has not looked for trainings as she felt the school is already offering adequate training. Whereas on being asked whether she would like to be trained in anything particular, she stated,

Yes, every year something new comes up and you need to be updated. I remember in 2003 when we finished this critical thinking, how the reaction was from the older teachers. They did not want this new way. Now, you constantly have new things coming up, so why not update yourself? It is a different time, and you are dealing with different kids that request different/new things

Simons in-service training experience

Simons view on the in-service trainings was leaning towards substandard as the training he had been to mainly relate to teaching and not physics. He claims that there are differences in the subject and thus not all should be taught the same. Additionally, his view is that the trainings are mainly unsatisfactory and uncoordinated. On being asked if the trainings offered by the ministry are obligatory, he said the following,

Hmm, no. The trainings in general were useless (did not make any sense). One training that was interesting, but we do not have the chance of applying was one that the Germans held. It was related to experiments. That was nice because it was related to practice rather than theory. Whereas the others, were related to methods, nothing, just words.
The follow up question was related to the training he seemed to like, and whether he was able to implement what he had learned, he claimed he was not able to do so as they had no equipment in their labs until this semester, but he has not used them yet.

In reference to the trainings that he has been subjected to, he mentions that he felt he had learned something in his European Computer Driving License (ECDL) training but that the other trainings were not as fruitful. However, there was no computer in his classroom, nor in the teachers’ lounge, so application of ECDL knowledge seems limited,

*Other than that, the others were, in particular after the war they were a joke. They treated us as if they were teaching kindergarten children. In that way, making sure they're satisfied [referring to be alert to student’s feelings], I am working in science. In the beginning after the war, it was all crazy.*

Asked whether there have been trainings he wanted to attend but could not he stated that he wants to attend trainings in relation to his profession, physics, and he further expresses that he does not believe in borrowing teaching methods from developed countries as they cannot be applied in Kosovo since the same socio-economic and cultural conditions do not apply. He further refers to the trainings and being uncoordinated, providing as such contradictory trainings.

*For example, according to myself, they have mixed it all up. In the beginning [referring to post-war trainings], it was all about placing the student in the center (student centered). Teachers were told to have students read. Imagine, students teaching and the teacher is just hanging back. They have misunderstood and misused them. Here, teachers need to personally be evaluated to see where they stand, and then comes the rest*

When asked if he feels he needs to be trained in anything particular, management, teaching, learning etc. he again mentions teaching methods but again refers to practical learning,

*Yes, the teaching methods. For example, practical learning. Connecting practice with theory. This I would like...even if you wanted to here, there are few opportunities...even at the faculty [FMNS]... You need to see how something is made...we have not been trained in practical work that much at the university [FMNS]*

The subjection of in-service training for Simon and Sara while similar after the war, currently differed greatly. Sara obtains continuous educational opportunities from the school,
whereas for Simon, his school was severely dependent on the ministry. For Simon, trainings related to teaching methods, were not as favored as training requiring practical methods. He sees this as the greatest need to teaching. Additionally, he referred to his profession as a physicist rather than as a teacher. Contrary, Sara considered herself a teacher and when referring to training, was more focused on receiving training in aspects of communication with the students, whereas Simon focused greatly on training related to practice. His view on teaching were developed and hindered from aspects of not being able to demonstrate to the students. However, neither seems to have been subjected to training for particularly teaching physics and learning how to teach mathematical equations in a learner-constructed way.

5.3.3. Teachers View on Teaching and Learning

A teacher’s view on the teaching and learning greatly influence the processes and provides an understanding to why the process was conducted in such a manner. Interview questions served to obtain their view and thus will be presented. The findings below show that their views influence their teaching and they play a role as ideological frame factors.

Sara’s view on teaching and learning:

Sara continuously emphasized her belief in interaction through dialogue being the main way of teaching. On being asked what affects teaching and learning in a classroom, she places importance on the teachers stimulating the students and interestingly refers to the students at the private school not being fearful to participate or express their opinion. This to her, has a positive impact on her teaching as it allows students to communicate and participate, thus making it easier. She states her disagreement with teacher-centered methods claiming they are monological and acknowledges that students get bored if they have to sit in the classroom to listen to teachers for seven straight hours.

She defined a good teacher as one who constructs the learning in accordance with the student’s level rather than have the student adapt to the learning as students have different interest and ways of learning. Additionally, she referred to her review sessions that she holds in September, which help her accomplish these. She also mentions how on top of talking to other teachers about subject coverage, she also talks about different students to obtain an understanding on their level of learning. This she says provides an all-inclusive classroom
where only a few are not reached. On being asked to explain her own teaching methods, she stated,

*I like when a class is interactive, mostly like a discussion. Of course, we would go through the main points, but mainly through discussion, to achieve learning through discussion, listening to the opinions of each student to arrive at the point that I want them. This is my method. I usually start with a sort of review, so with this chapter I started with a review on chemistry, and then got into physics. Then at the end, I try to give them homework to see how well they understood it. This all depends on the lesson, if we cannot cover it that day, then we continue the following day, to see how well they understood it.*

**Simon’s perspectives:**

Simon’s perspective on teaching is also focused on interaction through dialogue. He believes that it is important to be engaging, but his focus throughout the interview remained on physics being a different course than the rest, and the lack of equipment and labs as having a disabling effect on the learning process. Simon places great responsibility on the teacher. When asked on what can influence the teaching and learning in a classroom and what makes a good teacher, Simon stated that it is reliant on the teachers’ preparation.

*Personal preparation of the teacher, and his characteristics of being a hard worker or lazy. There are people that know something but are not good at teaching or lazy. Personal preparation of the teacher.*

He describes his role as ‘an interpreter. Conversational. Not something higher’. And describes his teaching methods to be interactive,

*I like students to be active and conversational. Students to be active. Questions and answers, to come to the solution, to discuss and to engage them [students] in the subject and not just have me speaking and let them be passive constantly. More like a conversation.*

What affects a dialogue between you and the student?

*Negatively? Noise, lack of discipline, lack of interest, students preparation because if they lack information, it’s hard*
His answers of the questions were rather brief but compressed. On being asked to describe his role as a teacher, he interestingly mentions, ‘not something higher’. This along with Sara’s reference to being fearful are expressions that are common when talking about teachers in Kosovo. It additionally complements the statements of their pre-service training wherein they both stated that their rapport with their teachers were distant, and roles were clearly defined in that the teacher is ‘higher’ and respected. Both Sara and Simon were conscious of the influence of a teacher in students and their perspective on interaction seemed similar and genuine, while Simon’s answers were rather brief.

Chapter VI: Discussion and Summary of Findings

To achieve the aim of this exploratory multiple case study, two teachers were observed during their teaching and were later interviewed to obtain their meanings and views. The findings provided adequate information for the possibility of answering the research questions. The exploration of the communication process through observations led to the implication that both applied Q/A sessions as student engagement techniques and the classrooms were highly interactive as student talk was almost equal to that of the teacher. Simon’s elicitation of communication was unremittingly that of a monological nature, applying fast-paced questioning techniques and encouraging of recitation. Sara’s elicitation of the communication was dialogical, allowing students’ adequate space to construct their own meanings during lectures, but increasingly swayed towards monological upon application and utilization of mathematical concepts. Feedback to the students by both teachers however, leaned towards mere affirmation or repetition of the students’ response, and neither elicited student questions. The frame factors identified were the curriculum that framed the communication due to its dense structure, its lack of flexibility coupled with its influence of time. The biggest frame factors of the communication process however, were the ideological frame factors and the teachers’ educational opportunities followed by external support (Lundgren, 1972).
6.1. How is the Communication Process Orchestrated?

The data collection through observations served its primary purpose in observing the communication process to establish whether these two teachers orchestrated dialogical or monological communication. Analysis of government documentation and review of literature provided enough background to indicate that an active dialogic communication process is encouraged not only by the government of Kosovo but also by educationalists around the world (MEST, 2001; 2010).

In concordance with Hyman (1977), the two teachers comprehensively depended on questions for initiation of dialogue and engaging students, with Simon’s classrooms applying communicative rules through teacher codes, determining who can talk and who cannot talk (Arfwedsson, 1979 used in Eriksson, 2013). Student interaction was substantial in both classrooms, which Nystrand (1997) and McMahon (2012) argue is not limited to dialogic environments. Simon continuously applied what Nystrand (1997) termed “tightly scripted lesson” (p.7) through a comprehensive control of the discourse where even the students posture was controlled. This does not fulfill Bain’s (2004 used in Harris & Cullen, 2008) qualities of a good learner-centered teacher that states that shared control of the classroom discourse is necessary. The discourse depended heavily on factual fast-paced questions with selected students, which Hyman (1977) also found to be common. The questions transitioned to whole class questions over the course of the lecture. In reference to Lundgren (1972), students seemed to be applying meta-learning where they had picked up on the patterns of communication and the process of coming to the right answer, this way providing Simon with what he wants to hear. In accordance with this, the students’ answers in Simon’s class sounded rehearsed and often progressed into guessing. Sara used a question as an initiation of an open-ended discussion but refrained from conducting “question-and-answer recitation” (Nystrand, 1997, p. 3) during lecturing. The initiating question served to find students understandings ‘what do you think?’ ‘What does this mean to you?’ and served as initiations of discussion. An environment of participation through talk was encouraged and students collaboratively structured understandings. However, Sara provided little input through her feedback in the actual discussion, and developed few questions from students’ statements. She served as a conductor. Both Simon and Sara provided little constructive feedback and less evaluation on the students’ actual responses or comments.
Despite these differences in the teacher’s approaches at helping students learn, the study found evidence that elicitation of students constructive questions, essential to a students’ meaning making were at a minimum in both classrooms. This is in agreement with Hymans (1977) and Marbach & Sokolove (2000) statement that students pose fewer constructive questions the older they get, fewer still by the time they reach USE, despite their heightened curiosity.

6.2. Can the Frame Factors Explain the Communication Process?

The following suggest that the communication processes developed by these two teachers can be explained by the frame factors and will be introduced in accordance. The frame factors identified run in concordance with some of the factors identified in Figure 3 as steering the teaching process (experts within the subjects and teaching materials were not studied). The curriculum was identified as a frame factors due to the several indications of it being too dense and non-inclusive of matters that influence its successful implementation. The teachers’ philosophy is represented as ideological frame factors. The teacher trainings provided and the school traditions are additional frame factors to be covered.

6.2.1. The Curriculum as a Frame Factor

The curriculum was seen to play a role in the structure of the communication due to its goals and intentions (commanded from official institutions), demand from the teachers and its dense structure, while not taking into play the time. The curriculum is highly centralized with little influence from the teachers who are responsible for its implementation. Sara is given more autonomy in that she can change the curriculum structure up to a certain point, wherein she can align it with the students learning level (Wyatt, 2013). Her perspective on the curriculum seemed to be that it assists her in lesson planning and she utilizes it as a guideline and as a point of reference. Furthermore, she seems to have a grasp on the main goals of the curriculum in its emphasis of an interactive classroom. Simon viewpoint of the curriculum was through its limiting factors of time, its inflexibility, and the overloading of the students.

Despite their perceptions of the curriculum, its compactness was limiting to both in the aspect of requirements of topics covered within a semester, which both shared their difficulty
of covering while simultaneously having to develop dialogic instructions. Nystrand (1997) states that despite the current curriculum developments aiming towards goals of interaction, they are structured in such a way that they in fact encourage transmission of knowledge. This was expressed with the inability to cover all the lectures set to cover to meet the goals of the curriculum in relation to the knowledge to be obtained by students while simultaneously providing the students adequate participation time through communication. This is further in agreement with Gojani’s (2014) and Selimos, Kadriu & Tower’s (2011) findings on the discrepancies in the goals of the institutions expressed through the curriculum and the actual in-class application.

Additional limitations of the time factor that held true for Simon but not Sara was the assessment method, oral examination - favored by Simon - which serves to reduce the time available for teaching, as testing only one student can take up a significant amount of time, if not and entire class lecture. The favoring of this method of assessment needs to be studied further, and either included in the curriculum or train the teachers in reducing its application. Having a curriculum that does not acknowledge its application only causes clashes and negatively influences the communication process as it reduces class time.

6.2.2. Educational Opportunities

The teachers own experience with their education poses a limitation as they had both been exposed to the traditional style of teaching, where the students are passive participants of the teaching process. Both seemed to be aware of this. Teachers are prone to teach with methods that they themselves have been taught (Viiri & Saari, 2006).

Their subjection to in-service trainings differed as it was tied to their employment. While CASTL named three key factors of improving teaching: shared goals of actors, reliable assessment mechanisms and professional development, the current study’s findings were in consensus with the professional development as having an influence to Simons and Sara’s orchestration of the communication process (Stuhlman, et al., n.d.a, p. 3). Professional support within schools (identified as a frame factor) and autocratic management style, seen by Wyatt (2013) as influential to teachers’ self-motivation, differ for both teachers. Professional support, through trainings in teaching and autonomy has developed Sara’s understanding of dialogic and interactive terms. Simon’s professional development, dependent on the ministry, has provided him with less access to trainings.
Moreover, during their pre-service trainings they had few classes related to teaching. They were both subjected to highly teacher centered undergraduate programs with physics concepts being communicated using traditional methods. This run in concordance with Strömdahl’s (2002) argument of the difficulty of communicating natural science (used in Eriksson, 2013). View of physics also influences the way that physics is taught. Referring to Roth & Roychoudhury (1994) division of individually meditated or culturally mediated view of physics; Simon’s development of the communication in the classroom encourages a culturally mediated view of physics. During discussions, Sara allowed for individually mediated views as the students were taking examples from their real life experiences to understand the lesson. Recitation is a predominant method utilized in secondary schools and more heavily applied in physics due to the cultural perception of traditional methods of communicating and teaching physics (Nystrand, 1997; Thomas, 2013; Eriksson, 2013). This might require spending more time on the transmission of the lecture.

The findings of the study imply that Simon and Sara both utilized traditional methods of communication when working with equations. Simon’s concern, in that there is lack of training in physics is a legitimate concern that holds true for both teachers and limits their ability to teach. Neither have been trained extensively on ‘how to teach physics’. Sara provided separate approaches to teaching students’ physics concepts and to solving equations. Her alteration of methods applied is in consensus with the literature review that physics is taught in a more traditional manner as soon as mathematics comes into play (Roth & Roychoudhury, 1994; Thomas 2013). The questions during equations were practical and methodical and her approach changed to fact probing. Bain’s (2004 used in Harris & Cullen, 2008) second finding of qualities that make up a good learner centered teacher, which is that a teachers’ deep understanding of the subject matter makes them more prone to apply different teaching methods. This is recognized by the researcher as a possible explanation to the aforementioned issue in relation to both teachers monological take on equations, however, the teachers understanding of the subject matter has not been covered in this thesis.
6.2.3. The Ideological Frame Factor

A focal frame factor in shaping the communication process was the ideological frame factor, which was seen to be influenced highly by the abovementioned frame factors. Their access to educational opportunities, their autonomy were all seen to influence their perspectives and motivation for the job (Wyatt, 2013; 2016). Their perspectives on teaching were of similar meaning, as they both stressed communication and interaction with high student activity, but applied it differently (Abdelfattah, 2015).

The initial thing that struck a chord was their perception of their profession. Simon viewed himself as a physicist first and rarely, if at all, referred to himself as a teacher. Whenever the interview stroke the topic of profession, he referred to ‘his’ profession as a physicist, and not a teacher. This was an interesting aspect to observe and it furthermore clarified his emphasis on practical teaching. As his view of himself was that of a physicist unable to practice his profession. It furthermore clarified his nonconformity of learner-centeredness and deeming trainings on methods of teaching unnecessary, as they were “just words” (see section 5.3.2).

Sara acknowledged that she saw herself as a teacher and that she entered the field of teaching as she loved physics and wanted others to love it just as much, and stressed this as the reason for pursuing her Master’s degree. Continuous access to in-service training coupled with autonomy had aided in shaping Sara’s perspective of her profession, aided in developing her understanding of learner-centeredness, and structured her intrinsic motivation to teach (Wyatt, 2013). While contrary, Simon faces high hierarchical autocratic management, lack of autonomy and lack of adequate access to in-service training.

Interestingly, when criticizing teachers, Sara referred to the public teachers only and the cultural aspect of ‘all Kosovars’ having the habit of complaining. Her comments were nonetheless in concurrence with Tahirsylaj’s (2013) findings of the teachers’ defensive stand to their teaching and blaming external factors for their inabilities to practice their professions. This stand was further corroborated with Simon’s continuous comments on lack of labs.

There is great recognition by the researcher of the teachers’ access to trainings shaping their ideological frame factor. Their highly teacher centered undergraduate programs and their lack of subjection to in-service trainings related to teaching physics accounts for their seemingly culturally mediated view and development of communication in the classrooms (Strömdahl’s, 2002 used in Eriksson, 2013; Roth & Roychoudhury, 1994). This leaves an implication that the teachers themselves have a culturally mediated view of physics where they consider the
introduction of equations to be taught through traditional teaching methods applying a logical structuring of ‘I understand this, but you do not’. This runs in accord with Wyatt (2016) that continuous growth in practical knowledge through in-service training would influence their TSE, as they influence every part of the teaching process and in turn is influenced by them.

6.2.4. Self-reflection on the Research

Having structured the research fully, there are certain issues and interests that were raised by the researcher but were not followed through. Simons highly summarizing answers, while he wanted to be done with the interview quickly he also talked continuously, which led to some follow-up questions being thought of while writing the thesis rather than being posed during the interview. On the issue of in-service training, he referred to it as being unorganized and that there was inconsistency between the trainings, and how being trained on methods that cannot be applied in Kosovo’s education setting is futile. The follow-up questions that arose upon writing this thesis but were not posed to Simon were, (1) what form of inconsistencies were there? In what way were they unorganized? (2) Why can’t those methods be applied? Additionally, when referring to noise and lack of discipline as having a negative influence on the communication process, a desired follow up question would have been, (1) what form of discipline are you referring to?, and (2) how would you deal with a classroom that is noisy and undisciplined? While how he dealt with a noisy student was described in section 5.1.1, as Simon started asking questions to B3 when he caught B3 chatting. The desired unasked questions to Simon would have served to understand his view on his reaction to them and possibly provide an understanding as to why he reacts in such a way.

An additional issue that became of interest to the researcher was Sara’s alteration to IA organized instructions upon working with equations and problem solving. While it became clear that she had the understanding of constructing an ID communication process, her teaching during equations shifted towards the IA communication. This was in difference to Simons teaching who was rather consistent with his methods throughout. For this, I would have wanted to ask her questions in relation to her conduction of communication through equations. Whether she was aware, her teaching shifted and why she believed that occurred.

While the focus of the research lied in the two teachers’ process of orchestrating communication, an additional factor to which time and access did not allow for pursuit was the students’ perspective. Although research shows dialogic communication to be more stimulating and aiding towards the development of reflective thought, some students do not always take to
it. Thomas (2013) found some students preferred a surface approach to learning. Upon the teachers changing their approach, one student said the following:

*Most physics revolves around manipulating different equations or formulas. If you know all your formulas then you know what to use so it is easier to solve some problems.

I make notes and I read them over and over again until it stays in my head. When I am writing an exam and I think about it I can see my notes. That is how I remember stuff. This is important for me.*

This aspect would have been an interesting addition, seeing that the students’ communication in the two classrooms varied greatly. The students in Simon’s class answered in fast-paced manner. While Sara’s students took their time in answering questions and more often than not, paused until they formed their sentences. However, the research does not reveal whether the students favor one process over the other.

The researcher would have additionally -had time and access allowed – researched the teachers’ ties to the school itself and how they fit in it. While Sara credited her professional development to the school, Simon rarely mentioned the school. The study was able to gather that the support from the schools and their autonomy differed and steered the teaching process. However, the interesting aspect would have been in establishing how in particular their hierarchical internal communication is structured and how great its influence is. This would have possibly enhanced the knowledge on their in-service trainings and their access to it. Additionally, an extensive review and analysis of the trainings themselves. Simon’s aversion to the trainings peeked the interest of the researcher as to the quality and type of trainings that the teachers were being offered. Furthermore, while the answer is not provided in this research, Simon’s aversion to the teaching method trainings raises the question on how would one handle and train teachers who do not believe in learner-centered methods.

An additional interest that peeked after the research was practical teaching. While Simon stressed that his incapacitation of demonstrating to students attributed negatively to his teaching, the findings did not lead to such a conclusion. Nonetheless while Simon placed great weight on this as a disabling aspect to his teaching, it would have been interesting to see whether the communication process would have changed at all had he been provided with an environment allowing practical teaching.
Chapter VII: Recommendations for Further Research

Recommendations for further research are plentiful. This mainly due to the lack of abundant research conducted in Kosovo. Macro and micro aspects of further research that arouse from the research will be shown in bulletin points, in no particular prearranged order:

- The teacher codes and student codes of class communication mentioned by Arfwedsson’s (1979 used in Eriksson, 2013). While the study was able to find whether the class communication in these two classes was monological or dialogical, it raised a question for further research in relation to the differences in the classrooms. Further research needs to be conducted on the issue of how to get the chance to speak? Whose turn it is? How is this decided? Etc. While in Simon’s class, students were more prone to blurting out answers, in Sara’s class, however, the students mainly raised their hands and waited to be picked. Is this restricted to these two classrooms? Or is it representative of public and private classrooms? If so, why are there these evident differences?

- The teachers’ preferences and their trainings. Are teacher ideologies taken into account during the development of the training programs? How are teachers that are not ideologically aligned with the goals of the training handled?

- Research of the communication process through the hierarchical chain. Findings hinted towards a discrepancy between the institutional goals shown through the curriculum, the training both pre and in-service and the teachers actual method of teaching.

- While this study has intentionally restricted itself from including students perception, research on their perception on the teachers’ elicitation of the communication process in the classrooms in Kosovo recommended, and their perception of their interest in physics and the learning of physics. Additionally, a study in relation to the perception of science in general. While it has not been researched, a common social known is the general aversion of science in Kosovo.

- Gender participation in the communication process. The research, found differences in gender participation in the communication. Again, the questions would follow, is it representative of public and private classrooms? Is this in relation to the gender of the teachers? In relation to physics? Is this in relation to the communication process? Does one gender respond better to a particular communication process?

- Evaluation research on the implementation of the curriculum.

- Evaluation research on the implementation and success of teacher trainings.
• Overload of the curriculum. The overload of the curriculum is one of the most interesting aspects as it serves as self-contradictory. While students have 17 courses, well developed understanding of these topics and established dialogic communication processes are to occur. Research needs to be conducted in viewing how the students and teachers cope with this overload.

• Skipping class. This is a countrywide trend but has not been studied. Thus, besides understanding why this occurs, the aspect of its impact on the teaching and learning is essential.

• Why do parents choose private schools? Due to lack of research on private schools in Kosovo, there is no findings to back up reasons of parents’ choice in Kosovo and their continuing introduction to the market.

Chapter VIII: Concluding Remarks

The aim of the present study was to explore teachers’ orchestration of the class communication in the context of endorsing learner-centered instruction and to show whether the communication can be explained by frame factors. The study sought to gain insight to the process of communication in the classrooms and the ways in which the teachers enable the communication process. The general background of the education system in Kosovo was presented with its system-wide reforms and hitches in its development. The study furthermore provided documentary analysis of state developed curriculums to explore the country’s desire to align with learner-centered teaching and its demands from the teacher. It provided a literature review and conceptual framework, which served to explore the students learning process, teachers influence on the latter process and the importance of dialogic communication for the construction of adequate learning where students develop their own meaning and understanding. This was further explored in the aspect of learning physics. Furthermore, presentation of the frame factors theory was conducted for its utilization in the findings. Their relevance and referencing to these concepts occurred throughout the research and aided in the development of the findings. The multiple case study utilized observations and semi-structured interviews as data collection methods and applied qualitative exploratory data analysis methods. The study provides data in response to main research questions, “what is the communication process like in these classrooms? Moreover, can frame factors explain the
communication process?” To obtain the answers for the main research questions, the study provided information in response to the objectives, which served to,

- Observe the process and form of communication in these two teachers’ classrooms, and their monological and dialogical instructions.
- The second objective was to explore the teachers’ interpretation of the curriculum and its goals through interviews.
- The third objective was to obtain information on the teachers’ ideology, professional and academic background through interviews and explore whether they can explain the observed communication process.

The dialogic interaction is essential in students learning and in particular, learner-centered education which is advocated for in Kosovo. As the sample size was small, the study did not serve as a representative of all 12th grade physics classrooms in Kosovo. However, it is in agreement with previous studies that note the discrepancy in the country’s aim of the education and the actual teaching process, which these studies have concluded that the teaching process is still rather authoritative (Mehmeti, 2014; Gojani, 2014; Saqipi, Asunta & Korpinen, 2014; Rexhaj, Mula & Hima, 2010; Selimos, Kadriu & Tower, 2011).

Frame factors of the teaching process found in the study were in agreement with the illustrated factors seen Figure 3. In exploring the communication process and the frame factors, this multiple-case study revealed that the greatest factors steering the orchestration of communication for these teachers were the curriculum, external support, their trainings and access to professional development, and the teachers’ ideologies. The compactness of the curriculum incapacitated the teachers from providing students adequate time in the classroom and to cover all topics in a set manner. The study could not conclude whether the students’ overload of courses (as mentioned by Simon) influenced the communication process.

The two teacher pre-service and in-service training were identified as additional frame factors, which influenced further their ideological frame factors. Their subjection to traditional pre-service training and their shortage of training on ‘how to teach physics’ provided an implication to their traditional and recitation approach of communication upon the use of equations and problem solving. Which leads to a concern in relation to physics education in Kosovo. The nature of the organization of science lessons is often associated with transmission of information due to the subjects estimated level of difficulty - reducing in turn students meaning making of science. Sara’s alteration of teaching methods and Simon’s continuous application of traditional approach throughout further imply their difference of in-service
training where Sara has continuously been subjected to teacher training, providing her with an insight to inclusion of students. Trainings were further seen to influence their ideological factors, wherein access to continuous training had increased Sara’s interest in teaching and altered her view of herself, while Simon’s reduced access to training clarified his nonconformity of learner-centeredness and deeming trainings on methods of teaching unnecessary.

This being said, the study can conclude that the curriculum, educational opportunities, external support and their ideological frame factors play a role in these teachers elicitation of dialogic interaction. What the study cannot conclude however is that the findings hold true for all teachers in Kosovo. An extensive study is recommended to obtain the latter information, as to be able to change the teaching or learning process, acknowledgment and understanding of the existence of the frame factors is essential. Findings suggest that reverting the teachers discourse fully towards an environment of dialogic communication encouraging of reflective thought - an aim of the Kosovo Curriculums - require additional sustenance and a profounder inquiry of the influence of teachers ideologies and how it can be positively reverted. Furthermore, findings suggest that educational opportunities should continuously be provided and include trainings on effective methods of approaching science and development of dialogic communication for science learning.
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Appendix A: Figures and Tables

Table 5: Population by Ethnicity (1921-2006) (ASK, 2008, p. 8)

<table>
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<th>Years of census</th>
<th>Total</th>
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<th>Serbs</th>
<th>Turks</th>
<th>Roma</th>
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Figure 6: HDI for the Balkan region in 2006 (UNDP, 2006, p. 32)
<table>
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<th>Formal education stage</th>
<th>Grade</th>
<th>Key stages of the curriculum</th>
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<td>Orientation and Specialisation</td>
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<td>XI</td>
<td></td>
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<td>15</td>
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<td>X</td>
<td></td>
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<tr>
<td>14</td>
<td>Lower secondary education (Middle School)</td>
<td>IX</td>
<td>Orientation</td>
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<tr>
<td>13</td>
<td></td>
<td>VIII</td>
<td>Reinforcement and Orientation</td>
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<td>12</td>
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<td>VII</td>
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<tr>
<td>11</td>
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<td>VI</td>
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</tr>
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<td>10</td>
<td>Primary education</td>
<td>V</td>
<td>Development and Reinforcement</td>
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<td>9</td>
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<td>IV</td>
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<tr>
<td>8</td>
<td></td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>I</td>
<td>Basic Acquisitions/ Fundamentals of Basic Education</td>
</tr>
<tr>
<td>6</td>
<td>Preschool education</td>
<td>Pre-primary</td>
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</table>

Figure 7: Key stages of the curriculum (MEST, 2001, p. 35)

![Figure 8: GER for compulsory education (MEST, 2015, p. 135)](image)

Figure 8: GER for compulsory education (MEST, 2015, p. 135)

![Figure 9: GER for USE (MEST, 2015, p. 137)](image)

Figure 9: GER for USE (MEST, 2015, p. 137)
Figure 10: Communication system (Shannon & Weaver as used in Curzon, 2003, p. 129)

Figure 11: Fundamental features of the communication process (Shannon & Weaver as used in Curzon, 2003, p. 131)

Figure 12: Aspects of the teaching and learning system (Stuhlman, et al., n.d.a, p. 2)
Table 6: Example of Transcription

<table>
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<th>Recording</th>
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<th>Transcription</th>
<th>Comment</th>
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<td>02:25</td>
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<tr>
<td>02:31</td>
<td>T</td>
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<td></td>
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</table>
Appendix B: Interview Questions

**Semi-structured interview**

**Personal Information**

The following questions are related to your career

Name (optional):

1. How long have you been working as a teacher/professor?

2. How long have you been working at this school?

3. Do you work at another school? If yes, where?

**Academic and professional development**

The following questions are related to your professional and academic development. With professional development, I am referring to any activity done to enhance and develop your skills, knowledge, expertise as a professor.

1. What is the highest level of education that you have completed? And where?

2. How would you describe the teaching during your studies? What kind of rapport did you have with your professors? What made you interested in this field? (physics and teaching)

3. Have you ever participated in any form of training within the past 5 years?

4. Did you attend any of the following?
   - Courses:
   - Workshop:
   - Conferences:
   - Qualification programs

5. Where they voluntary or mandatory?

6. Where there other trainings/workshops that you wanted to participate in? Why did you or didn’t you participate?

7. Do you feel you need training in any particular aspect? (Management etc.)

**Planning, guidelines and the curriculum**

The following questions are related to teaching, its planning and the implementation of various guidelines and curriculum within the school

1. How many physics teachers are you in this school? Specifically for 12th grade?

2. How long do you stay in the school? Do you have any administrative duties (paperwork etc)? Explain!

3. Do you plan/prepare for the class lesson prior? If yes, how much time on average, do you spend per week planning? (How much time in school and out of school?)
4. Are plans executed? Are there any internal classroom reasons why you would not be able to follow up plans?

5. How many hours (classroom session) per semester? How many topics do you go through (average)

6. Do you use other books besides the main text? Did you choose the book or the ministry? Do you use other books or things besides the main text?

7. Are you informed on the curriculum? And the core curriculum for natural science, did they hand them out or?

8. The curriculum according to you, represents what?

9. Does the ministry monitor classes?

Communication, teaching and learning

The following questions are only related to teaching and learning in this school

1. Explain a regular day for you

2. How would you describe a good classroom environment? (realistic or ideal)

3. What affects teaching and learning in a classroom?

4. Do you think the physics as a topic changes teaching? Or requires different methods. Explain

5. How do you see your role as a teacher?

6. How would you explain your teaching method? Teaching philosophy?

7. What impacts a dialogue between you and the student or students/classroom?

8. Do you leave time for discussion in the classroom?

9. What is your opinion on student participation in the classroom?

10. Do you think there are plans for change or development? What would you like to happen that is not happening? In this school, training, university
Appendix C: Informed Consent Form

Informed consent form

Prospective Research Subject: Read this consent form carefully. Ask as many questions as you like before you decide whether you want this class to participate in this research study. You are free to ask questions at any time before, during, or after your participation in this research.

Working project title: Teaching process in 12th grade physics classrooms and the frame factors
Principal researcher: Donjeta Haliti, MA candidate
Telephone: 049 887 073
E-mail: donjetahaliti@gmail.com
Supervisor: PhD. Jonas Gustafsson, university lecturer
E-mail: Jonas.gustafsson@edu.su.se
Organization/University: Stockholm University, institute of international education
Location of Study: Pristina, Kosovo

Purpose of This Research Study: The study is conducted for the master thesis as part of a requirement for the degree program of Masters of Arts in international comparative education at the Stockholm University in Stockholm, Sweden.

The study is designed to investigate the teaching process in the 12th grade physics classrooms and the frame factors of that process. The study will consist of two consecutive observations conducted in the same class followed by an interview with the teacher. The observations and interviews will be audio-recorded to help the researcher recollect and accurately depict the words, thus reducing the possibility of misinterpretation. The audio recording will be transcribed – available as a copy to the teacher upon request.

Possible risks and benefits: The study does not require any physical activities thus, physical harm will not pose as a risk. Any possible risks involved in the study are related to the time consumption of the participants. Steps in protecting the anonymity of the participant will be taken (and are described below under the ‘rights’ section). The beneficial aspects of this research study lies in the investigation of the teaching process through the frame factors theory in an attempt at understanding the limitations to teaching within physics and inadvertently draw attention to an investigation of a bigger size.

Financial considerations: Financial compensations for participation in the observation will not be received.

Rights: The direct involvement of the students within this study is not requested, thus risks are not posed to the students identity. The identity of the participating teacher throughout the study is to be protected through several steps depicted below. Any personal information will be withheld. A pseudonym will be provided for the teacher and the school to minimize the possibility for recognition.

The teachers personal information (name, contact information) gathered will be available to the researcher (Donjeta Haliti) and faculty supervisor (Jonas Gustafsson) only. Any possible future publication of the study will not result in the inclusion of your identity. However, the data obtained through the audio-recorded interview may be inspected by the persons conducting this study and/or Stockholm University, provided that such inspectors are legally obligated to protect any identifiable information from public disclosure. These records will be kept private in so far as permitted by law.

In the event of termination of the study from the side of the researcher, all records involving the participants will be destroyed and the participants will be informed. The same action will be taken in the event that you decide to withdraw.

After the Study is completed: Upon the completion of the audio-recorded observation and interviews, they will be transcribed. The transcript extracted from the audio-recording will be available to the teacher in the form of a printed word document or via e-mail for reviewing purposes. This will be
available upon the request conducted via e-mail or telephone, from the participant to the principal researcher. The aforementioned steps are necessary if the participant wishes to see the final results of the study.

Resources: Any questions the participant may have about this study or any research related emergencies, will be answered by Donjeta Haliti, and Jonas Gustafsson (contact information found on the first page of this consent form). The participant can address any complaints to the faculty supervisor.

Subject and Researcher Authorization: I have read and understand this consent form, and I volunteer to participate in this research study. I understand that I will receive a copy of this form. I voluntarily choose to participate, but I understand that my consent does not take away any legal rights in the case of negligence or other legal fault of anyone who is involved in this study. I further understand that nothing in this consent form is intended to replace any applicable laws. The principals' signature is necessary for the consent of conducting the research in the school only.

Signature of consent:

Principal's name (printed): ________________________________

Principal's Signature: ___________________________ Date: ________________

Teacher's name (printed): ________________________________

Teachers Signature: ___________________________ Date: ________________

Principal Researcher's Name (printed): ________________________________

Principal Researcher's Signature: ___________________________ Date: ________________