

Research article

## **Negotiation in the formation of science teachers: a phenomenological examination of three lecturers' experiences.**

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### **Abstract**

Despite the benefits and the calls being made over decades for a learner centred approach to teaching and learning, in practice very little effort has been done by practitioners to employ this approach. Most teachers still stick to teacher centred lessons in which case, students are taken as passive receivers of the knowledge transmitted by the teacher who supposedly knows everything. What the learner knows and cares about has not been prioritised. One way of a teaching to be learner centred is to employ negotiation

as an empowering tool for both the teacher and the learner. Negotiation with learners, though not so new, is still seen as something that cannot be accepted. To many teachers, it means lack of their authority. In Cuba, learners majoring English Language are trained to be translators, interpreters and lecturers in higher education; after graduation, a great number of them work as teachers. Their curriculum includes a period of teaching practice of six months. Nevertheless, lecturers and learners consider this practice period is not enough for developing pedagogical abilities. An experience based on negotiation was implemented with these learners and the results were satisfactory. A similar situation was observed at Bindura University of Science Education, in Zimbabwe, where the learners, who are going to be teachers of different sciences, have a pre-service that is not sufficient for mastering their future work. The authors employed a phenomenological framework as the methodological basis for presenting their classroom experiences in the application of negotiation in their lessons; they have advanced degrees in studies on education and several years of teaching experience in universities preparing future teachers. The findings show that this research has implications for improving the experiences in preparing future pedagogical professionals, because the final outcomes were accomplished since the learners demonstrated to be more responsible, independent, creative and skilful while teaching. **Copyright © WJESML, all rights reserved.**

**Key Words:** Negotiation Pedagogy, Teaching Approaches, Learner Centred Approach, Science Teaching, Training of Science Teachers, Learning to Learn

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## INTRODUCTION

Nowadays, all over the world, the need of preparing teachers is recognised. With the growing significance of science in the development of societies, the formation of science teachers has acquired a vital importance; that is why, alternatives are implemented, as results of research works that are being done with the purpose of achieving the main goal of science education teachers' training: to have well prepared and skilful teachers that may contribute to the education of the new generations capable of serving and developing societies. In this sense, researchers have shown that the differentiating teaching, based on learner centred approaches, is effective. Having an understanding of how teachers experience teaching, particularly while teaching teachers' candidates, within this framework is essential.

In this paper, the authors provide such an exploration. First, they survey the literature on Negotiation Pedagogy. Following this, they analyze their experiences while training future teachers, using the Negotiation Pedagogy in two countries: Cuba and Zimbabwe. Finally, they conclude with a discussion of the implications of their research for both teaching and science teacher education.

## Review of the Literature of Negotiation Pedagogy in Education

To put into practice the "Negotiation Pedagogy", the teachers, instead of transmitting their knowledge, assist carefully the teaching learning process. They are responsible for their students' progress and create favourable conditions for the development of each, in the teaching- learning processes. The teachers

should be competent in order to offer them a wide variety of strategies that allow them to make reflections and select what is adequate for them.

Through the Negotiation Pedagogy students are prepared to determine by themselves the objectives, the content, the procedures, among other aspects, so as to have an efficient learning.

Negotiation means being conscious of the objectives that one has when trying to learn, matching them with the ones of his/ her friends, to find a common sense that encounters the interests of the whole group, giving answers to the personal objectives (Martin Paris, quoted by Giovanni, 1996). The same is applied to the contents and the selection of activities that should be done individually, in groups or in pairs.

Autonomy given to the students does not mean that the teacher loses the control of the class. The teacher should continue being the director, the organizer, the guide, a source of information. For the students, autonomy is the independence and responsibility of making decisions, of learning how to learn; it means to have at their disposal different strategies to continue learning actively, even out of school. So, negotiation is at the core of a student centred approach and in the implementation of differentiating strategies, when teachers aspire to have efficient teaching learning processes.

### **Negotiation Pedagogy and purpose of science teacher's education**

Despite the benefits and the calls being made over decades for a learner centred approach to teaching and learning, in practice very little effort has been done by practitioners to employ this approach. Teacher centred lessons in which students are taken as passive receivers of the knowledge transmitted by the teacher are the ones that prevail in our classrooms. Teachers do not care about what the learner knows and is interested in. One way of a teacher to be learner centred is to employ Negotiation Pedagogy as an empowering tool for both the teacher and the learner. Negotiation with learners, though not so new, is still seen by teachers as something that cannot be accepted. To them it means lack of their authority and control of the process and the activities in it.

### **Methods Epistemological Framework**

This study is grounded within a framework of subjective transcendentalism. Heidegger (2008) writes "We are ourselves the entities to be analysed. The manner of phenomenology with which the authors align in this study is Husserl's (1964, 1983), the methods of which are best explained by Moustakas (1994).

### **Study Co-researcher**

In this phenomenological research study, the first researcher's personal experiences with the phenomenon under investigation served as the major motivating force in conducting the research. The first researcher's experiences with the phenomenon is an important part of the data (e.g., Estola & Elbaz-Luwisch, 2003), but her data alone is insufficient to provide a full idea of the phenomenon. The aim is to have a greater understanding of the features of the phenomenon, and as van Manen (1990) says, "We gather other people's experiences because they allow us to become more experienced ourselves". That is what happens with the analysis of two other teacher training course lecturers stories related to the phenomenon of Negotiation in this study.

### **First researcher description**

The first author got her Bachelor's Degree in Education in 1985 and her Doctor's Degree on Pedagogical Sciences in 2005, in Cuba. She has experience in teaching Didactics, Management of Education, Curriculum Design and Methodology for the Teaching of Foreign Languages. She has also some experience in teaching at a pedagogical university, applying Negotiation Pedagogy during some academic years. Her students were majoring in English Language and, after they graduated, they were employed mainly as teachers of higher education; that is why, their curriculum included English Language Methodology, among other subjects, as well as periods for teaching practice. Nevertheless, they faced difficulties with their pedagogical skills.

### **Co-researchers and site description**

The first co-researcher is one of the co-authors of this paper, who has experienced this same phenomenon and is likewise interested in it. This lecturer got his Bachelor's Degree in Education in 1999 and his Master's Degree in Curriculum Design in 2006. He has been teaching for a long period of time in the area of Management of Science Education Curriculum Design, Implementation and Evaluation, Pre-practical, and Pedagogics. Furthermore, has experience in teaching Biology, Sciences, Integrated Sciences and General Science in high schools. His learners, at Bindura University of Science Education graduate with Diplomas in Science Education or degrees in Science Education and, are employed mainly as teachers of secondary and high schools; that is why, their curriculum includes Management of Science Education, Curriculum Design, Pedagogics, among other courses, as well as periods for teaching practice. Nevertheless, they also face difficulties with their pedagogical skills.

The second co-researcher is also one of the co-authors of this work, who has recently experienced this same phenomenon and is getting into the world of the Negotiation Pedagogy, so that her experience is a short one. This lecturer got her Bachelor's Degree in Education in 2001 and her Master's Degree in Arts and Curriculum Design and Implementation in 2005. She has been teaching English as a Second Language and Literature in English for a long period at high schools. At the university, she has been working for 5 years teaching Communication Skills to the learners of Diploma courses and other undergraduate students.

Bindura University of Science Education in Zimbabwe exists to contribute to the development of the country through the advancement of knowledge and skills in science education. It seeks to produce innovative, highly acclaimed graduates equipped with research, entrepreneurial and technical skills for the benefit of the nation and the international community. Among them a great quantity of teachers of science is formed, whose pedagogical training is guided by the Department of Education. At this university there are different programmes: Diploma in Science Education with two semesters of pre-service, Bachelor of Science Education with one semester of teaching practice, Honours Bachelor of Science Education with six weeks of practice at schools and Bachelor of Science Education Honours Degree with one semester putting into practice their pedagogical knowledge and abilities.

The University of Holguin also exists to form the future professionals, of different fields, that will contribute to the development of Cuban society. Among its graduates those with English Language as a career play important roles as translators, interpreters and, above all, as lecturers in higher education, teaching English, French and Spanish as foreign languages. Their pedagogical formation is guided by the Didactics unit within the English Language Department. Students have to pass three courses on General

Didactics and Methodology for the Teaching of Foreign Languages and they have two semesters of teaching practice.

### **Data Collection**

Data collection was based on the analysis of the results of the interviews applied by the main researcher to the first and second co-researchers once their interest was known by the main author, since Moustakas (1994) notes it is the most widely accepted form of phenomenological data collection, and to the first author's recorded oral reflections on her experiences, representing a manner of long auto-interviewing. The main author, individually and orally, reflected her own experiences of teaching at universities applying Negotiation Pedagogy (see Appendix A, Reflection Protocol). This was done before the interviews were applied to the co-researchers.

The first interview focused on the first co-researcher's experiences working at a university training students for being teachers. After this interview, he was provided some readings on Negotiation Pedagogy. The second interview focused on the co-researcher's reactions to, and initial understanding of these readings. Following this second interview, the co-researcher began planning a pedagogical intervention grounded on the principles of Negotiation Pedagogy. The third and fourth interviews focused on the co-researcher's experiences of negotiating while teaching Management of Science Education to learners of the Diploma Courses on Education, as well as on his experiences of planning, delivering, and assessing his experience (see Appendix B, Interview Protocols).

The four interviews were applied to the second co-researcher as well, but in different moments of this study, since she joined these colleagues later in the process.

### **Data Analysis**

In order to analyze the data, these authors transcribed the information from the descriptions and the interviews, eliminated what were repeated and determined the feelings implicit in those texts. But they asked some other teachers to make inferences from the analysis of the texts, not to be permeated by their vision of the issue. After this, the authors and the invited teachers generated individually the description of these experiences which, while accounting for the particularities of the co-researchers' and the main author's Negotiation experiences, permitted to discern the advantages of teaching future science teachers by applying Negotiation Pedagogy.

Finally, descriptions of the co-researchers and the main author's experiences were constructed and they are presented in the findings section.

### **Main author's description**

Thinking on the need of stimulating the students' roles on their learning, their responsibility and on the application of a student centred approach, this professor decided to develop the syllabuses in a "different way". For this reason, she deepened on the knowledge she had on the general features of the students (adolescents from 19 to 22 years old) to know which peculiarities of that age would favour negotiation. In a particular way, she asked most of the lecturers who have taught them during the previous three courses, looking for the characteristics of their students' personalities that would permit a better management of the teaching learning process.

In addition, she went through more information on the roles of the teacher and the students of a foreign language course, particularly in collaborative and cooperative learning and task-based teaching. Finally, she analyzed the contents to be taught, the material conditions, the bibliography and the teaching media the students would associate with.

By the end of the first course, she tried to be in contact with those who were going to be her future students and she participated in some of their curricular and extracurricular activities; this allowed her not to be an “unknown person” to them and vice versa.

First day of classes, she gave her students a thorough explanation about the features of the course and how she thought it was going to be developed.

Her students were the pupils of the third year of the English Language Major at the University of Holguin, who had a preparatory course that allowed them to register the major; this means, that, actually, the course of the study presented here, was their fourth school year at the campus, receiving their curriculum.

The discipline she worked with was Methodology for the Teaching of English as a Foreign Language. It is composed of three subjects: Didactics or Methodology for the Teaching of English as a Foreign Language II and Didactics for the Teaching of English as a Foreign Language III. The first two subjects are taught in the third year (first and second semesters, respectively) and the last one on the first semester in the fourth year, together with a teaching practice period, teaching English in the majors at the university (this is apart from their periods working and getting experience as translators and interpreters).

In fact, this author’s experience consisted of negotiating with her students, so that she got into an agreement with them relating to content, the methods to be used in the lessons, the teaching acts to choose, materials to elaborate, as well as, assessment, evaluation and how there would be the treatment in case of errors and mistakes.

Afterwards, this researcher delivered an initial lecture to give her students a general view of the syllabus they were going to develop, mainly by themselves. Furthermore, at the end of each lesson, she suggested to them the contents to analyze in the coming lessons, as well as, the learner or learners to play the role of teacher on Didactics. This proposal of learners was analyzed among the learners and this professor, until getting into a consensus. Besides, she had a section giving, the teachers to be recommendations for the development of the activities, emphasizing on their independence, creativity, and responsibility.

An important aspect to consider was that there should be a great amount of responsibility on the student-teacher’s part and on the rest of the learners’ behaviour and performance in the classroom, who had to support their classmates’ activity, participating with discipline, but at the same time, actively. How to handle digressions was an element presented during the initial lecture, supported by a bibliography the acting teachers could revise, to look for the strategies adequate to the situations they may have during the lessons.

In a time out of the lesson, she provided the “new teacher/s” with specific orientations towards content (where to find it, the level of mastery the student teacher should have about it), how to plan the lesson, formulate the objectives, the possible types of activities, exercises or tasks to deal with, method or approach, teaching acts, possible teaching media and materials (most of them prepared by them), what to do in order to check students’ individual and independent work, when to assess and when to evaluate.

It was really satisfactory to observe the lessons that most of them were able to plan and develop. The acting teachers, surprisingly, had into consideration details that sometimes this professor had not imagined they could keep in mind: the presence of pedagogical orientation all through the lesson, the quality of the teaching materials, the requisites for their use, the elaboration of differentiating activities always giving their learners a purpose for doing them and asking them to suggest other strategies for dealing with the content they have treated, the revision of other sources in order to deepen on the content they have to present; assessment was not out of their interest, so that some of them asked their classmates to judge their presentations.

A number of the teachers to be, look for the advices of this professor and some other lecturers, but it is important to highlight that they used to doing it, only when having a proposal to share. It is not necessary to state that some other learners were not so preoccupied with the revision of what they had prepared, but they did plan and prepare their lessons, mostly helped by their friends.

Of course, there were learners who did not accept to play the roles of teacher; nevertheless, they played an active role while participating in the activities of the lessons and in the assessment of the teaching task. The preference for keeping their roles as learners was respected.

In each lesson taught by the students, this professor made explanations and cleared up doubts whenever necessary. Besides, the performance of the acting teacher and the participation of the learners were evaluated by this author asking the students to evaluate themselves first, then the classmates and finally, the whole group. Many recommendations were made by the learners that were taken into account by most of them and this professor for the betterment of the process.

The final evaluation tool in the disciple is a portfolio and one of the tasks this teacher asked them to realize was to write an essay about the importance and their experiences in the subjects. Their comments were favourable towards the implementation of such strategy. They highlighted its value, as they said, it is another opportunity to exercise their future work as lecturers of higher education, because a semester of teaching practice is not enough for developing their communicative and pedagogical abilities.

After they finish their teaching practice their advisers were interviewed to compare the results of the teaching practice of these learners with the ones of the students in previous courses, they said that the learners’ performance had been bettered in the sense of their responsibility and independence to plan the lessons and in their creativity while the application of different types of exercises, tasks, techniques, teaching media and materials.

### **First co-researcher’s description**

The Negotiation experience of the co-researcher focused on the teaching of certain topics within the subject Management of Science Education: Management and Instruction in Science Education, Laboratory Management, Content Organization in Science Education, Instructional Theories and Practices, The Role of Action Research in the Management of Science Education, Teacher and Student Involvement in Science Education, among others. This was done because when he visited the learners' lessons in their teaching practice, he realized there were problems in their pedagogical performance; however, the learners were eager to know how they could do it better. So, he was looking for information on new alternatives to make the learners from the Diploma Course to be better prepared; then, he met the Negotiation Pedagogy. He shared this new knowledge with some colleagues and invited them to put it into practice, but he received no positive answer in that moment.

In spite of this, he decided to implement a form of lesson in which there were the learners the ones who taught the contents of their curriculum. First, he did it by asking and orienting individual learners whom he knew like to teach and were not going to say no to his call. After the first lessons taught by three learners, he decided to explain the whole group the purpose of that experience and the principles of the Negotiation Pedagogy he was trying to apply with that way of teaching them.

Some of his learners told him that, in fact, that was another opportunity they had for delivering a lecture having their teacher there, in the classroom, making them suggestions to improve the way they were teaching at school.

Out of the classroom, the learners, who were going to teach their mates, were constantly asking and showing him what they had prepared for their activity in the classroom and he was always caring about the content and the way they were going to present it. Some learners brought to this teacher some books and other sources of information they were able to get for preparing themselves.

After those learners were visited at their schools, their advisors commented on the results of the observation instruments and they pointed out the good practices of their lessons. Learners, for example, said: "I learned that with the lesson I taught in Management of Science Education", "I did it that way when it was my term to teach in Management", "I asked my students to do it that way, because I look for information about it for my lesson on Management of Science Education". Here it is important to notice how they were able to introduce what they had learned with the experience implemented in Management of Science Education to the lessons on the particular sciences they were teaching at schools. When the future teacher's pupils were asked at the end of the visit, at least, some of them, expressed they liked the way their teacher had developed the lesson and that they were able to understand better; this was appreciated in the students' participation during the lessons.

## **Second co-researcher description**

The second co-researcher was invited by the main author of this paper and the first co-researcher to apply this type of Pedagogy, at least, in some of her lessons in Communication Skills with her learners of the Bachelor of Science Honours Degree in Mathematics during the last semester. Particularly, she did it when using a group of oral tasks related to the learners' future communicative profile, that is, the pedagogical one (and when having a lesson on reading comprehension by the end of the semester). The main author and the first co-researcher had various sections explaining the second co-researcher what their experiences consisted on, the results they obtained and the advantages of implementing this Pedagogy. When she decided to corroborate this by herself, they advised her on how she could do it and provided her the necessary bibliography for getting more information on this field of study.



Her experience consisted on the application of Negotiation, mainly in the Review Lessons through which she wanted her learners to exercise on the particular type of oral communication characteristic of their future activity as teachers of Mathematics. So, she asked advanced learners to help her in preparing the exercises they were going to develop during the Review Lessons; she presented them the types of tasks that could be done (role playing, debate, panel discussion, simulations, among others) and they decided which tasks to select and the topics to be treated through them; the learners also chose some teaching materials to be used. This researcher left the learners the responsibility of allocating who were the ones who were going to teach each of the four Review Lessons of the course outline. The learners in the classroom were first surprised with the lesson headed by one of their classmates, staying the lecturer in the classroom, but, at the end of the lessons this co-researcher always asked the learners about their opinions on the work done by their classmates, as well as, their impressions about an activity like that; they all affirmed they liked it and that they were really interesting. Moreover, the acting teacher was asked about how they felt and up to what extent this activity had helped them or not. Three learners expressed that they would do it again if the lecturer asked them to. They all agreed on the fact that they learned more and that this was a good teaching experience for them. The lecturer explained the whole class the importance of what their classmates had done not only for the moment of teaching, but also to arm the students with the skills to research. They thanked the lecturer for allowing them to teach.

### **Findings of Negotiating Experiences**

The final stage of the phenomenological analysis, which aimed at extracting transcendental meaning of the experiences based on, was to integrate and synthesize the co-researchers' and the main author's descriptions of their pedagogical practices. The descriptions which are presented here are the findings. In brief, the essence of this negotiation experiences favours the affective and pedagogical atmosphere of an instruction based on the principles of Negotiation Pedagogy introduced into the process of formation of future science teachers.

### **Discussion and Implications for Future Research**

This study demonstrates that this mode of instruction prepares learners for the roles they would play as teachers, relevant activity in their future, after graduation at universities; that is, they develop pedagogical skills and values like responsibility, creativity and solidarity. This study is somewhat limited in its scope, as it is limited to the experiences of three lecturers who have taught at universities in two different countries. Because of this limitation, it would be interesting to see if the horizons, features, and structures of their experiences hold to a broader population of teachers to be trainers working at universities.

### **Implications for Teacher Education**

Nowadays there is a great need of changing the approaches that are being used while teaching. The didactic approach changes if the teaching and learning situation is not centred on the lecturer, the textbooks, the objectives and the content already determined in the curriculum, but on the learners and their process of learning. The didactic approach changes if the lecturer assumes a different protagonist role in the development of the lesson, in decision making, as a facilitator of a group of learners who has the desire of learning what has direct relevance to them.

What the students learn is the result of their motivation towards what they need, want or desire to learn; to learn it by their own, with their personal resources and the lecturer's advice constitutes a challenge for their independence, responsibility and creativity in paving the way for a lifelong learning; this is the consequence of the application of the Negotiation Pedagogy, which cannot be left aside in the process of formation of science teachers, who need to be competent for carrying out an efficient work at schools.

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## **Appendix 1 Reflection Protocol**

1. What have my experiences been like as a teacher trainer? 2. What have my experiences been training future science teachers? 3. What were my major concerns for my learners? 4. What were my major hopes for my learners? 5. What do I view as being the purpose(s) of training science teachers? 6. What do I see standing in the way of achieving this/these purpose(s)? 7. How, if at all, has the framework for Negotiation Pedagogy impacted my practice?

## **Appendix 2 Interview Protocols**

### **Interview 1**

1. Tell me about your experiences teaching as a higher education teacher. 2. What have your experiences been like working with learners who are going to be teachers? 3. What are some of the challenges you face working with those learners? 4. What are some of the things you like the most working with those learners? 5. What do you know about Negotiation Pedagogy? How does this help in the formation of the future teachers?

### **Interview 2**

1. Based on the readings on Negotiation Pedagogy, tell me about your present understanding of it. How do you feel your understanding has changed since our last meeting? 2. In your opinion as a professional educator, what makes for quality instruction? What makes for quality learner performance? 3. What benefits do you see to teaching based on the principles of Negotiation Pedagogy? What benefits do you see particularly for the future teachers? 4. What difficulties do you see to teaching based on the principles of Negotiation Pedagogy?

### **Interview 3**

1. Tell me about the polling exercise you had planned. 2. Tell me about your learners' experiences with the lessons they taught. 3. How do you feel when they were teaching? 4. What did you like the most about their lessons? 5. If you were to apply this experience again, what would you change to make it better? 6. Why do you feel it was particularly important for your learners in this experience?

### **Interview 4 (Follow-Up Interview)**

1. How do you feel your polling exercise helped prepare your learners for their teaching practice and future work as teachers of science? 2. How particularly do you feel they have benefitted? 3. What opportunities do you see to implement courses based on Negotiation Pedagogy?