

"I felt that all the novice teachers were equal in the eyes of the lecturer": A virtual course and a frontal course for novice teachers as an educational tool for a technological change

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Abstract

The research objectives are: characterisation of the learning-teaching processes in the course entitled "Novice Teachers' Professional Development" studied in two different frameworks; and examination of the difference between a physical learning environment culture and a virtual learning culture. The study comprised a follow-up of six learner groups with 108 participation for a period of one year. The courses were taught by three lecturers at an academic college of education and were compulsory for novice teachers during their first year of practice. Each lecturer taught two groups in both frameworks. The study was conducted in a qualitative method as a case study. The research tools consisted of open-ended questionnaires and reflection processes. Central themes in the data were content analysed and a triangulation between the researchers was performed. The prominent findings are differences between the two course types regarding the change characteristics of the learning environment culture: teaching methods, illustration aids, lecturers' profile and novice teachers' profile. The research recommendations are developing virtual learner communities which will allocate room for individual expression in the forum on the one hand and integrating virtual teaching modules in a frontal course on the other.

Keywords: technological change in education, novice teachers, virtual course, frontal course, case study

1. Introduction

Due to the technological development and its integration in education, a virtual course was designed in parallel to the frontal course for the support of novice teachers. This paper encompasses a view of novice teachers' difficulties and of a technological culture of a virtual course which constitutes a technological change as an educational tool. The paper consists of four sections: (a) theoretical background which discusses the world of novice teachers and the virtual culture characteristics; (b) methodology; (c) findings; (d) discussion and conclusions about teaching and learning in the two frameworks of the course.

2. Theoretical background

2.1 Novice teachers

Many studies (Ingresoll & Strong, 2011) indicate that the first years of teaching constitute a crucial period for teachers' professional development. Findings show that the first year shapes teachers' image and professional perception. It is essential for their long practice in the education system as well as for their continued professional development at school and in teaching. The literature points out a considerable percentage (46%) dropout of novice teachers during their first five years of teaching (Arbiv-Elyashiv & Zimmerman, 2013; Cochran-Smith, McQuillan, Mitchell, Terrell, Barnatt, D'Souza, Jong, Shakman, Lam & Gleeson, 2012).

The key teaching difficulties identified among novice teachers are class management, coping with problems of discipline, setting expectations for the pupils, coping with pressure at work and vis-à-vis the parents and settling conflicts. Moreover, they have to diversify their teaching methods and address learners' different capabilities (Gilad & Alkalay, 2015; Moore & Swan, 2008).

During their first year of practice, teachers are engaged more in trying to solve problems of discipline and class management. In this situations they frequently have a difficulty in finding the appropriate way of teaching, namely integrating disciplinary knowledge and didactic-pedagogical knowledge as well as planning a lesson compatible with the curriculum and adapted to the learners, ensuring an optimal learning which leads to attainments (Eisenhamer et al., 2010; Gilad & Alkalay, 2014).

Sabar Ben-Yehoshua (2001) argues that novice teachers' stages of adjustment are similar to those of immigrants. Novice teachers must adjust to organisational norms which are unknown to them and to break internal codes of the organisation. Hence, shifting from the internship to the actual teaching stage during their first year, novice teachers undergo complex processes of re-socialisation and de-socialisation, while embracing components of the school organisational culture. Being unaware of the school culture characteristics, regulations and job requirements entail a sense of helplessness, weakening the teachers' self-esteem.

2.2 Culture of virtual teaching

Studies conducted around the world indicate an increased development of frontal courses through the Internet. Moreover they point out a rapid pace of virtual course introduction into education systems and higher education institutions (Abromitis, 2000; Rotem, 2011; Rotem & Peled, 2008; Wiess, 2000). Braziller and Hegeman (2000), Moore, Dickson-Deane and Galyen (2011) and Parkes, Stein and Reading (2014) argue that factors such as increasing the learner population in higher education institutions, saving of infrastructures and teaching method innovations motivate the development of virtual courses. This fact is validated in academic colleges of education which are in charge of in-service

teacher education and their preparation for induction into the education system; promotion of teachers' professional development towards higher academic degrees; shaping education in Israel. Hence, building a virtual "Novice Teachers' Professional Development" course is part of an academic college of education's vision of introducing fundamental technological changes in teaching methods and changing the structure of academic curricula not only regarding new and advanced contents but also in the way the various courses are taught (Beller, 2000; Rotem, 2011; Sjerry, 1995).

Learning in a virtual environment culture with all its hues and levels in academic colleges of education are grounded in pedagogical and organisational foundations, emphasizing unique needs of teachers' education and professional development. According to Rotem (2011) as well as Rotem and Peled (2008), virtual learning encompasses five key features:

1. Physical distance – there is a physical distance between learners and teachers.
2. Gap in time – learners and teachers conduct the dialogue in different times.
3. Independent learning – learning transpires when learners build knowledge based on various information sources.
4. Accessibility – it is easy to access varied written and computerised information sources.
5. Interactive communication – a text-picture-voice integration between learners and teachers and between learners and learner communities for the purpose of mutual feedback.

Thus, virtual learning is first and foremost a pedagogical concept and then a methodology of implementation/performance.

Virtual courses built as part of the academic curriculum should faithfully represent the learnt contents and subjects, facilitate students' mastery and comprehension of the learnt material rather than turn them into 'computer games' or a virtual gimmick (Solomon, 2000). Technology is designed to provide the experience of learning and acquiring the course contents without the basic options of lecturers and students being in one space whereby one can ask, deliberate and clarify studied issues and discuss 'on the spot' any point which requires elaboration. The built "Novice Teachers' Professional Development" course attempted to cope with the challenges set by the technological system, namely including all the materials, presenting them in a way which is intriguing, clear, stimulating, interesting and insight-attaining. At the same time it devised creative activities which highlight the students' cooperation in acquiring the contents and competences required for conducting a qualitative research. The virtual course had to find a way of bypassing the limitation of lecturers not being present during students' learning and of being unable to see what happens to the learnt material delivered to students.

The virtual course had to cope with the change of virtual learning culture as well as change in the research approach and in the comprehension of the paradigm and the research tools. Thus they would be individually useful and applicable to every student wanting to implement the qualitative approach. The course in the two teaching-learning cultures had to rise up to the challenge of being learnt in an academic college of education within the framework of professional development of novice teachers studying towards their professional development. That is, be relevant to teachers' professional life during the studies as well as be applicable later on (Beller, 2000; Rotem, 2011).

3. Methodology

The present study was conducted according to the qualitative-interpretive approach of the case study type used in studies of teaching and learning (Donmoyer, 1997; Lincoln & Guba, 1985). Harriot and Firestone (1983) presented the method of Multi-Qualitative Research or Multiple Case Studies, i.e. a theoretical representation of case series which are inter-connected. These studies facilitate a general

pattern or a different interpretation than by analysing a single case study or the parts thereof (Shlasky & Alpert, 2007; Yin, 1993; Yosifun, 2001).

The qualitative-interpretive approach applied in this study enables understanding, description and interpretation of what transpires in the field, including covert aspects from the viewpoint of the participants themselves (Smolicz & Secombe, 1990). The fundamental assumption was that procedural occurrences associated with culture and society can be fully comprehended only when they are studied from the participants' viewpoint and as they are perceived by those who are actively involved in them. Moreover, data collected from the participants allow understanding of and penetration into the questions: What does a small group 'think and feel'? What is related to the group members? What do they need? What is their attitude and approach (Shlasky & Alpert, 2007; Smolicz & Secombe, 1990).

3.1 Research population

The research population comprised 108 novice teachers in six learning groups. Three groups of 54 novice teachers in frontal courses and three groups of 54 novice teachers in virtual courses. The groups included 88 females and 20 males; 92 Jews of which one quarter were religious and observant and 16 Arabs. The novice teachers learnt together for a year and were able to relate to their perception of themselves as learners in the "Novice Teachers' Professional Development" course as a concept shaped out of a personal experience.

3.2 Research tools

The questionnaire was open-ended, based on a questionnaire from a study conducted by Millet & Gilad (2008). This questionnaire was validated by a group of peer-specialists and was administered at the end of the academic year.

Furthermore, the students were requested to write their reflections (Millet, Patkin & Ezer, 2002) and briefly describe a meaningful picture which they took with them from the "Novice Teachers' Professional Development" course.

3.3 Data analysis

The open-ended items and reflections were content analysed at two levels. Normative content analysis for identifying prominent trends and a qualitative-interpretive content analysis in order to uncover essential meanings, perceptions and to learn various insights. The analysis was triangulated by the two researchers (Shkedi, 2012).

4. Findings

The findings collected from the questionnaires and the reflections were analysed in several stages and were presented accordingly. First, the courses were generally depicted according to the initial analysis in order to derive the general trends. Then the findings of the teaching/learning characteristics in the courses were displayed in group depictions.

4.1 Key characteristics of the courses

The frontal course consisted of several single learning sessions in a virtual environment but was mostly taught as a 'regular' course. The syllabus and the varied learning materials were flexibly planned and developed with regard to changing emphases in contents and subjects. This was done according to the learning group composition and the pace of progress. The objective was to extensively adopt a deep approach to learning which was relevant to the participants. At the same time, a course web site was built which included the learning materials and a rich bibliography list. A special emphasis was put on

the workshop-oriented learning in the course which was based on inquiry learning and developed the independent learning competence.

The virtual course necessitated planning, meeting with computer experts, development of unique learning materials which had to comply with the double challenges of changing attitudes towards virtual learning, thorough acquaintance with the contents, personal experiences, collecting sources on the Internet, a very accurate division of contents into learning modules throughout the academic year, building learning modules including bibliography and focused assignments in every learning module, building a course website which offers links to the learning materials and enrichment of contents through multimedia. Uploading the course to the virtual space was done prior to the beginning of the academic year. The teaching-learning modules were made accessible according to a schedule throughout the year. Every module had to contain vast material for self-reading in accordance with guidelines, independent learning by directed questions, exploring comprehension as well as elaboration and distinction between terms and processes. The novice teachers who enrolled in the course received a personal opening letter with one frontal session with the lecturer and a computer professional. The purpose was orientation in the innermost parts of the course, including passwords, procedures and reciprocal lecturer-novice teachers working methods. The syllabus and all the detailed guidelines, the specified schedule for virtual submission of assignments and submission of written assignments during the studies, communication channels of the group, the lecturer and IT communication were displayed on the course website. Moreover, the website comprised a special virtual learning presentation as well as personal acquaintance with the lecturer.

4.2 Characteristics of teaching and learning in the courses

The findings related to the characteristics of learning which were obtained from the questionnaires and the reflections of the novice teachers in the two learning environments, demonstrated a differentiation between them. The differences between the learning characteristics of the two courses are: learning environment and teaching methods, illustration aids, lecturers' profile and novice teachers' profile.

The frontal course

The learning environment and teaching methods – meetings were organised in the learning classroom which were turned into direct encounters, the learning materials were traditional and consisted of worksheets, presentations, discussion, workshop learning of individuals, groups and the whole class, while integrating inquiry learning and independent learning.

The lecturer – the lecturer in a frontal course is characterised as a charismatic figure which brings her personal experiences as living examples of the studied topics. As attested by one of the novice teachers: "I greatly enjoyed hearing the experiences from the personal studies of the lecturer. Her personal narratives livened up the course, guided me up the entry stairs to the school and built my faith in this matter".

Illustration aids – the aids included simulations in which the novice teachers participated. The simulations engaged in the issues of teacher-pupil dialogue, lesson management and teacher-parent dialogue. One of the examples which the findings prominently indicated as meaningful to novice teachers was group work in class and analysis of educational dilemmas which emerged after watching a movie. Additional issues mentioned as essential to learning transpired at the workshop stage of the learning. At this stage, the participants analysed events from their life and discussed pictures and illustrations presented in class.

Novice teachers – in a frontal course, novice teachers feel involved in and partner to the learning. They enjoy the fact they are able to ask questions and receive an immediate feedback, One of the novice teachers pointed out: "I presented a personal dilemma and the group suggested varied ways of coping". Novice teachers benefit from the personal contact in the course. The findings attested to "associative interactions" and "humour" which made the learning more "interesting, diversified and experiential". Another novice teacher indicated that "the discussion inclass, at any stage which I presented, was electrifying and intense, the group encounter facilitated openness which I have not experienced in academic debates. It was an instructive lesson to me and to the entire group". Another evidence of a novice teacher emphasized the contribution of the course: "The group discussion and the course directed me to perform another observation and upgraded my practice. Learning in the course made me look at the events from various angles, be more open and come from a 'clean' place".

Assessment methods – assessment in the course was given according to guidelines pre-defined and specified in the course syllabus: active participation in class, exercises and assignments.

Advantages – advantages were manifested by the answers to the novice teachers' questionnaires: personal contact and immediate feedback between the lecturer and the novice teachers, direct and constant interaction through clarification on the spot, reading of theoretical materials combined with lectures in class, focusing the learning processes on topics studied in class and amendment and improvement options, involvement and personal acquaintance of the group learners as a result of experiences requiring openness, conducting discussions rich with different and multicultural opinions.

The virtual course

The learning environment and teaching methods – a non-definite physical place for the course, the learning materials are virtual and can be found on the course website, the teaching transpires by means of teaching modules of the learning subjects. Every module includes reading materials and assignments by a pre-determined schedule for sending to the lecturer. The learners should manifest in the assignments that they have understood the material and implemented what has been studied. Learning is an independent inquiry process. Sometimes there are discussions in the forum and collaborative learning. The forum is a stage for presenting personal events in an organised manner so that everyone can express themselves and respond to events raised by others. Hence, every such event entails diversified opinions which enrich the discussion in the forum.

The lecturer - in the virtual course is characterised as leading towards independent learning. She is a purposeful tutor and in the novice teachers' words: "She directed us to reading and writing comprehension", "She saved us time of surfing the Internet and made the learning materials accessible to us", "She referred us to various sources with guiding questions and questions which checked our understanding". The novice teachers pointed out that although they neither saw the lecturer nor heard her, she managed to maintain a good contact with them. As one of the novice teachers summed up: "The lecturer succeeded to maintain a presence by being available on the virtual channel".

Illustration aids – the learning modules were structured in the course website. The reading materials were accompanied by questions and the learning materials came with assignments. The novice teachers' voice expresses surprise by the materials added to the course, such as: movie clips, pictures, presentations, illustrations, quizzes, caricatures and authentic texts as well as creative assignments. The texts encompassed in each module constituted an illustration of the studied topic. One of the novice teachers pointed out: "I mostly enjoyed watching the movie clip which described a conversation between a head teacher and a teacher. It was wonderful relating to the movie clip from different perspectives". Another novice teacher described: "When I read the recording of the lesson

observation I felt as if I was the observer and that I was actually in the classroom, sitting and hearing the voices of the pupils and the teacher. I have learnt a lot from the experience of others and I can implement it in my class". The illustration aids in the virtual learning modules attempted to involve the novice teachers in the process of understanding and operating a school system.

Novice teachers – should engage in independent learning, have a high self-discipline of meeting a deadline which does not appear in any lesson schedule. They have to allocate the learning time for themselves. They cope with the operation of an educational system and consolidate an attitude and approach towards the teachers' role. One of the novice teachers clarified: "In my nature I greatly need to hear the lecturer without intermediaries and conduct the current dialogue with him or her. I lacked it in the virtual course. I think that an in-depth reflection and a dialogue about every assignment might help me in this point and turn the course into something meaningful. Nevertheless, I must point out that whenever I needed elucidation and guidance I could contact the lecturer and receive from her suitable explanations or enhancement. At the end of the course, I was pleased with the process and with the numerous requirements".

Two novice teachers expressed two personal points about the place of novice teachers in the course. These expressions were not anticipated. One claimed that: "In the virtual course dealing with novice teachers' professional development I felt that all the novice teachers were **equal** in the eyes of the lecturer. All of us had to bring examples from our world, we all had the same assignments and the same articles. The lecturer did not look at or related to certain novice teachers with a special attitude. For her everyone was equal. She was behind the screen". The second expression was: "I am a timid young woman, I have never asked questions in class. I felt **confident** to address questions to the virtual lecturer when I did not understand some term, or what I should do in the assignment". In the virtual course too the novice teachers demonstrated the importance they attribute to the relation between the lecturer and the novice teachers, a value-oriented and emotional relation. Moreover, they mentioned the extent to which they benefited from the availability of the lecturer in the virtual course through a formal interaction.

Assessment methods – the assessment in the virtual course is based on submitting assignments of the learning modules according to schedule, active participation in the forum both by presenting the events and by responding to them.

Advantages – the learning is individual regardless of time and place. Novice teachers have control over the course of studies and pace of learning. Learners enjoy flexibility and accessibility at every place and every time. The learning modules are designed to develop critical reflection and openness to criticism. Multimedia are implemented, many information sources are accessible and available, learners acquire skills of technological tools, updates and up-to-date information are available, the learning directed and taught the novice teachers to learn independently, cope personally with theoretical materials and practically apply virtual learning competences.

5. Discussion and conclusions

The research findings revealed teaching and learning characteristics of a "Novice Teachers' Professional Development" course, studied in two different teaching frameworks: a 'regular' learning framework and a virtual learning framework. The courses were studied as part of the compulsory studies of novice teachers.

According to the findings, the "Novice Teachers' Professional Development" course constituted a basis for open thinking and for coping with change processes on the level of the lecturer and of the novice teachers.

The findings obtained from each course underscore both the learning characteristics in the different frameworks and the course contents manifested in different and similar ways. The course objectives were accomplished in both learning frameworks. A change was generated in the novice teachers' attitude which was demonstrated by a deep understanding that an educational change is part of the unique learning culture in the two frameworks. Sharan and Ishay (1996). Rotem and Peled (2008) and Salant (2011) explain the difficulties in adopting the changes, claiming that a process which integrates the cognitive approach and the behaviouristic approach might lead to a change in the novice teachers' positions.

The communication processes in the two courses stemmed from the learning characteristics and the change characteristics in each course. The findings illustrate that various interactions transpired in the courses, highlighting communication patterns on different levels: high level interactions between the novice teachers and the lecturer in both courses, high level interaction among the novice teachers themselves in the frontal course and a high level interaction between novice teachers and the learning materials in the two courses. These types of interaction are in line with the study of Goldstein (2001) and Naveh (2008) who define them interactions as interactions in the lecturer-learner-knowledge triangle. According to them, the dialogical space which embodies this triangle in a balanced way, promotes optimal teaching-learning processes. Salant (2011) underscores that there are different models of qualitative interactive learning which facilitate a fascinating combination of technologies and communication.

The findings obtained from the virtual course indicated a prominent advantage, namely novice teachers' control over the learning course and learning pace. They also manifested feelings of equality and confidence to ask questions personally from the lecturer through the screen. The novice teachers expressed themselves: "A culture of independent learning was created in the course, inducing a constant improvement of technological tools", "I have learnt to study in a structured, systematic and creative manner". These findings support the findings of Goldstein (2001), Salant (2011) and Hasegal (2001). These researchers describe the perception that all individuals should be allowed to handle their knowledge on the internet and build it according to their needs. The current stage in the field of virtual learning is characterised as "a postmodern stage whereby the emphasis shifts from the learner's technology to the learner. Teaching methods in virtual environments focus on learners, highlighting the learning process of the individual as part of a learner community" (Rotem & Peled, 2008, p. 24). Solomon (2002) emphasises the informed integration of technology designed to empower the personal experience which enriches the learning methods. Mazor, Nachmias and Mintz (2005) and Rotem and Peled (2011) clarify and underscore that wide aspects of the virtual environment and culture can be learnt only through direct in-service teachers' experience with the virtual environment. This experience entails focused learning which enhances the knowledge and its ways of acquisition.

Based on the findings and the insights that every learning framework has its advantages, the present paper recommends integrating virtual modules in the frontal course and at the same time integrating workshop sessions in the virtual course. The findings emphasise the great importance of a learning environment. This environment necessitates a coping process which embraces innovative learning competences characterised by a dynamic perception and a perception of dealing with complex situations. That is, choosing the appropriate 'part' of knowledge and implementing it in the solution of problems in situations which are different in time and place (Pasig, 1996, 2008).

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