

IMPLEMENTING INNOVATIVE LEARNING METHODS: A TWO SCHOOLS EXAMPLE

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Abstract

Applying new innovative learning methods in schools can strongly influence and reform them. Schools are vital organizations adequate under constant changes, reformations and developments. Teachers, students and parents, all contribute into these changes materializing educational envisions. We strongly questioned ourselves how these innovative educational approaches can influence and reform an urban and a rural school respectively. We selected an urban, Model Experimental School and a typical rural High School in Greek countryside. We applied almost the same innovative approaches to both schools inquiring gradually the out coming changes. In the case of the urban school new education methods were necessary to be applied in order to raise students' interest, entangle them into educational practices that are not so font of and reduce school abandoning. On the other hand applying almost the same practices to an Experimental School has to do with its fundamentals and basic principles. Students attending a Model Experimental School were chosen after exams and are in general willing to take part into educational programs, excellence groups, experimental workshops, exchange mobilities and other innovative projects. Although, we founded that the rural school reformed rapidly into a highly developing school, achieving gradually some of its pronounced educational goals. Teachers' and administration's vision began by encouraging teachers to participate into educational meetings, conferences and developing courses. Additionally, groups of students were organized to prepare several projects according to their interests. We can mention the Astronomy group, the Environmental group and the Drama group. Accordingly, we invested on extroversion and presentation of projects. Astronomical and Environmental events and Drama performances were some activities that joined the rural school with the local society, parents and communities. Furthermore, students revealed a remarkable interest about sciences and culture. On the other hand at the Model Experimental School, all these activities regarded as standard activities, sometimes as obligations. Of course also this school had some remarkable educational programs, interesting experimental workshops and extroversion to the local community. What differentiates the Experimental School is its excellence groups, were teachers and students are approaching non typical subjects of Science, Art and Culture. These groups seem to be the comparative advantage of the urban school leading to extra-curriculum knowledge. In any case the urban school seems to develop and reform itself, but not as fast and crucial as the rural school.

Introduction

We are witnessing a new social capital where knowledge and learning are the result of cooperation and interaction of people, with master trust among participants, social networks, linkages and partnerships based on the social values of society (Kalantzis & Cope, 2013). “The new learning is reflected in the concepts of transformational, integrative and cooperative education mainly of the Social Gnosticism, of the state pluralism but also of the principles of reconsideration, cognitive repertoires and synergistic feedback» (Arvanitis, 2013, p.19). It is therefore clear from the above that the issue of us as educators, it is now shifting from the teaching of the subject, in teaching the active subject, where the meta-modernism, i.e. the affirmation and acceptance of pluralism and integration of the personal style, has the total power in learning practice (Kossyvaki, 2003). Furthermore, some dogmatic concepts of objective and indisputable knowledge and the acceptance that knowledge is consider as a social construction adequate under continuous trading, alongside to the circular organization of living systems that self-regulated entities in interaction with the environment, are required to be abandonment (Kossyvaki, 2003, p.44). Schools which purport to stand at the forefront of the education system should at least work pluralist in its choices of educational methods used. As teachers we are called to respond and to rebuild the context of the educational process. The student turns from passive to active receiver underlying learning and teachers must abandon the role of authorities (Kossyvaki, 2003), by developing the necessary skills that will give it the ability to cope with a world that is constantly changing. Additionally, compelling is the need for using alternative forms of education that will offer good education for students who for whatever reason cannot participate in the conventional system of education. Teachers must prepare their students, integrating the life skills that will enable them to recognize and manage a world that is constantly changing.

Practically, how can we organize and reform a rural school? Designing a long period action plan can help a school? How can we implement theoretical predictions into real school environment and evaluate our findings? It is well known that teachers have to participate into educational conferences and courses (Baird et al., 1991). Meetings and courses are crucial for the overall progress and development of teachers (Shannon et al., 1998). New trends in education had to be spread into a rapidly changing world (Tillema, 1994). Modern educators and teachers are expressing a growing demand for lifelong learning programs (Hobson, 2002). Additionally, all new trends must be implemented into classrooms and embodied in the traditional curriculum (Helsby, 1995). In parallel students must accept and incubate modern pedagogical methods (Finn, 1998). Working in groups, consisting working teams, preparing projects and presenting results are some of the new aspects of education. On the other hand, excellence groups (Howley, 1989) and students’ contests (Verhoeff, 1997), seems to gain an important part of nowadays educational system. Furthermore, extroversion of knowledge gradually becomes a goal for many schools (Holland & Andre, 1987). Astronomical and environmental events (generally science courses), cultural performances (theatre) are of high educational content. But the question is how we can implement all these aspects into daily educational practice.

Implementation

The two schools, on whose actions we rely on to develop our thoughts and with whom we have engaged either as Headmasters/mistress or as teachers, tried to implement a knowledge management program aimed at achieving specific learning outcomes such as the diffusion of knowledge, the improved performance, competitive advantage in a public school and high levels of learning innovation. So through the exploration and implementation of pre-existing knowledge trying to create new knowledge for our students and ourselves, always having in mind that in any educational application, learning as a product of the learning and not just teaching (Lionarakis, 2006). At the same time we took seriously into consideration that learning is not only cognitive development but depends heavily on the feeling, the will, the drive and the “physicality” (Kossyvaki, 2003). The Knowledge management model we rely on in order to design our educational plan for both schools was that proposed by Collison and Parcell (Collison & Parcell, 2001), considering three basic knowledge management elements: people, technology and procedures. At the same time we received seriously in consideration the pro-mention theoreticians’ opinions about the crucial role of the schools’ culture in every single case i.e. the differences between the culture of the rural and the urban school.

Thus we tried to set the bases for creating schools with teachers and students as an integral part of the “knowledge society”, exploiting creatively knowledge which occurs outside the classroom and implementing the so called “School on cloud”. Schools that are familiarizing students with inquiring, managing and extracting the information, pull down the watertight boundaries of disciplines and interdisciplinary approach knowledge, involving diversity in learning and finally teachers that try to get out of the suffocating confines of Marxist “alienation” of alienation that is the product of his labour. The four axes of the action plans that were formed were:

- the logistical equipment and improvement of building infrastructure,
- teachers training and engaging with new pedagogical data, innovation and research,
- improving teaching instrumentation aimed at developing students skills that will ensure a smooth, balanced and productive path in their integration into society and the labour market in particular and finally,
- evaluation.

In both schools we have mainly problems on rising students’ interest, provoke curiosity, but especially in the rural school we have also some disciplinary matters. Both schools wished to develop extroversion and come closer to local communities. According to these major needs in both schools we based on lifelong learning, implementation, group working, production of educational material, extroversion, seminars, educational and cultural events, participation in contests, evaluation and feedback.

Urban School activities

The goal for improving the education provided includes actions related to the Organization of the school community as community learning, developing educational material relating to the curricula of the new school and the pilot curriculum and designing teaching methods as set out in the institutional framework (Kalantzis & Cope, 2013). Initially the improvement of education in a public school requires in-service training for teachers. The drafting of a questionnaire on the training needs of teachers and the exploitation of the data helped in the planning of training activities under the supervision of School Counsellors and properly design seminars and projects. Furthermore we designed training activities in cooperation with Universities, other educational institutions but also through applying and succeeding an Erasmus+ proposal for Certified In-Service Training Mobility Program for the school staff: The proposal indeed provides a summer school for teachers as an implementation activity.

Additionally, we signed protocols of cooperation and development of partnerships and actions with Universities or other educational institutions while our connection with the local community formed the next long-term goal. In particular the cooperation protocols were signed with the Laboratory of Educational Material and Educational Policy of the Hellenic Open University (HOU), The Laboratory of Research and Mathematics Teaching of the Department of Primary Education (University of Patras), department of Telematics Applications and Regional Development of Computers Technology Institute CTI and Technological Institute (ATEI) of Patras. With all the above institutions have developed actions involving both students and teachers or students and has been planning for the full development of cooperation in the coming years. At the same time is in process the signing of protocols with School of Pedagogical and Technical Education (SPETE), the Laboratory of Sociology, Educational Research and Professional Development of the Department of Educational Sciences and Education in Preschool Age (TEEAPI) and Science Centre of Patras. At the same time we also formed partnerships with other local and international bodies. The opening of the school in the academic arena but also in society in general resulted in the change of the mentality of educators and further enriching and updating the curriculum.

Regarding the digital school equipment, we pursuit potential sponsorships, while significant turned out to be the volunteer work by teachers. As a result of these actions we can refer that our school was equipped with the latest technology machinery and two computer laboratories where each pupil has his computer, the development of excellence clusters of Robotics with four available robots. Furthermore we equipped all classrooms with computers and video projector in well accordance with installation of optical fibre connection and the possibility of developing high speed Internet in every classroom or lab. These were important steps towards upgrading the quality of the learning process and practice while at the same time gave us the ability to design and implement innovative actions. In addition to the adopting of teachers Learning Content Management Systems, which will allow them to create a Web module, was one of the components of the future design of the learning process.

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The curriculum of the Pilot Schools (Including Model Experimental Schools) allows educators and teachers to produce educational material utilizing interdisciplinary approach. Indeed until now we configured important educational material that is posted on the website or in our “school in cloud”. Shaping interactive online class from all teachers is the next challenge. It is worth noting that where applied online class or online educational platform the number of visitors was overwhelming. Alongside the order constituted an important part of the curriculum which was implemented this year, another major innovation was the seven clusters (groups) of excellence, innovation and creativity that functioned with the participation of about 150 students (out of 180). In addition, all students and teachers of the school were involved in experiential synthetic work. Pupils and teachers had to remain at school after completion of the course in order to implement these activities. The consistent presence of the students and the almost non-existent, leakage is a positive feedback for our effort but simultaneously creates higher expectations to which we must respond with the unique reward of taking care for our students and their parents. It is important to stress that all these actions and other innovative measures undertaken by individual teachers followed a prescribed procedure dictated by the principles of modern pedagogical-educational movements, as well as specific instructions and instrumental approval of the Scientific Supervisory Committee (EPES).

Finally we must mention the importance of the evaluation process of the action plan and educational work of the school in general. It should be noted here that both the excellence groups and the actions initially involved in the original design their valuation and deliverable material – after their completion-all deliverables, educational tools and results of assessment were filled out. In the final meeting of the Plenary Session of Teachers but also in the Scientific Supervisory Committee (EPES) meeting where the theme of the evaluation of curriculum and the actions of the school year were discussed, we concluded that the process of feedback is very important in order to further proceed into decision-making for the remodelling of the stages of the learning process that did not worked effectively.

Rural School Activities

First of all in order to face the problems we realized that teachers had to be educated and trained on new pedagogical and didactic trends (Day, 1999). Teachers were encouraged to participate to several training and learning activities. During the first stages of our action plan teachers were educated mainly on new education trends, educational scenarios, ICT implementation in classrooms, modern pedagogical trends and new approaches in daily school life. It was clearly understood that traditional pedagogical methods were inefficient. On contrary whenever a new pedagogical method was applied a rising interest was observed. Teachers also appear more willing to test new approaches. As a result of all these activities we realized how important is for educators to attend training activities and programs. New prospective occurred and new methods applied in classrooms. This was the first step of a school that learns, evolves and develops.

Secondly, teachers were encouraged to produce educational content. Educational scenarios were developed, learning materials were produced and working groups organized. We introduced and encouraged a new innovative idea of organizing student groups with special skills and responsibilities (Johnson & Johnson, 1990). For example, the Event Organizing Group, the Promotion Group, the Media (e.g. video) Producing Group, the Drama and Astronomical Team were some of the most active groups. We uploaded most of the produced educational material and scenarios on electronic means (e.g. our website), while the working groups started producing projects and events. A group of teachers was responsible for each working group. They were setting final goals, organizing their working plan, scheduling meetings and evaluating their progress. We tried all steps of the working groups to be based on educational scenarios. This parameter was also an important aspect of a constant learning school (Schank, 1994). We detected and evaluated all steps, extracting important conclusions of how a school can become a working community. Additionally, the educational material and scenarios seem to encourage students to further search for knowledge. As all this educational materials were available on the web, educators and teachers found additional teaching tools.

Excellence and Contests

A second step to our action plan was excellence, focusing mainly on contests (Bishop, 1991). We realized that participating on National or International Contests was really a unique opportunity to raise the interest and competitiveness of our students. We can refer to the most successful attempt, the “Odysseus” Contest. This contest was about Astronomy and co-evolution of life in space. Winning the contest was not our initial goal; instead we were mainly interested on developing a progressive educational pathway (Jacobson & Wilensky, 2006). First of all we organized a team consisting of almost ten students interested in Astronomy. We scheduled some standard meeting dates, but we met each other mainly out of schedule. Because of the strict school curriculum we had to communicate a lot through electronic means (e.g. Skype). All these state problems and aspects are interesting parameters of how a school learns to work in groups, communicate and develop a project (Garmston & Wellman, 2013). We learned that ICT are absolutely necessary tools for education.

Astronomical Event

Developing our Astronomy project, we realized that we needed some hands on experience, observation knowledge and support by experts. These realizations were important on organizing the first Astronomical event in our school’s region open to local community. The event was a result of an excellent collaboration between several working groups, teachers and authorities. The event-organizing group supported the whole action, the promotion group, the media group and astronomical team also took great responsibilities. Teachers from our school participated in several parts of the event, while we had the support of the Municipality of A. Olympia and the 7th Ephorate of Prehistoric and Classical Antiquities (EPCA) of A. Olympia. We operated remote telescopes from distance, a professor from University of Patras gave Lecture about the Universe and finally we observed astronomical objects by telescopes. All these activities raised the interest of students and revealed a new orientation in learning

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procedure for our school. Local communities and authorities came closer to our school and we learned how to expand our audience (Hanifan, 1916). We had now a strong team willing to work harder for our contest project.

From this point and on the final title of our project was clear. We decided to work on plants attitude and colour on another planet. The contest's demand was a clearly defined scientific question, fully developed and answered through experimental and bibliographic justification. Although the difficulties, we managed to win the National part of the contest on March 2013 and the European part of the contest on April 2013. Of course this was the first step of a working methodology. Although it seems that our main goal was the win of the Contest this is not absolutely accurate. We initially tried to intrigue and provoke students to take part to all the related activities. It was the same with the participation of an environmental Contest and also with the drama performances of our school. Furthermore, we realized that extroversion events are extremely important for the educational practice (Elmore, 2007).

Environmental Event

We followed up with an environmental event, which was actually an ecological meeting. This event combined lectures by professors of the University of Patras (another important parameter is growing a standard collaboration with higher education foundations), hands on activities (experimentation related to chemical effects on environment), speeches by market representatives and groups of volunteers. This was also an open event to local community. Apart from this aspect students learned many about connection between education and market especially on the agricultural field (Clark, 1983). Additionally, volunteerism presented to students as a part of environmental protection part (Goldberg, 1998). All these aspects were highly educative for students and local community, while a rural school approaches the day life of local society (mainly agricultural) from many aspects (scientific, economic, activism). On the other hand this was our second extroversion event. Our working groups continued developing and performing even more professional. Doubtless an important parameter of the constant learning school is assigning important responsibilities to students (Ames, 1992).

Innovative Approaches

In parallel we introduced some innovative approaches in every day teaching practice. Real time (synchronous) video conferences were implemented on several lessons (Murphy & Coffin, 2003). An interview from the researcher Michael Tsambas at Lyon France and a couple of virtual visits to CERN were some of our distant learning attempts. Additionally, we increased the use of ICT on daily teaching practice. Whole lesson were presented digitally, while experiments were combined with electronic means e.g. we used augmented reality applications (Kaufmann, 2003) and Kinect camera for detecting movement and air presenting (Hsu, 2011). In all these actions students' working groups organized almost the whole activities. We realized that students were feeling important in participating actively, while they count the success of the event as their personal success. This is also a remarkable point as we often focused on students with low learning expectations but exceptional technical skills giving them responsible roles on all events Furthermore, we also gained important profits on

the disciplinary section. Students felt that a well-organized and extrovert school is not only a matter of strict rules and punishments, but mainly a school that develops healthy relationships between all members (students, teachers, parents, local community).

Conclusions

As far as concerns the Urban School, which is actually a Model Experimental School we can assume that the institutional changes that have occurred in the operation and administration of the school, created the certainty of a positive climate of cooperation and participation in educational matters. A climate that is indeed inherent in public schools, but its development impinges on bureaucratic mechanisms and regulatory frameworks. At the same time the present State Control Mechanisms in Education that transforms educators and teachers into forwarder civil servants, are strongly forced to change form. The latter is not painless or easy, requires a change in the way of facing the concept of “participation”, something that may eventually be dangerous for the system. The possibility of a learning unit to utilize its experience and develop culture of innovation is what matters in a society that is constantly changing, changing us also in parallel. At the same time the implementation of an action plan based on respect of the educational and vocational development targets and the simultaneous creation of mechanisms of communication and collaboration with students and the wider social and educational context, could lead in the near future to transform us into thinking school. We strongly believe in a school that learns from its imperfections, his mistakes and the new comings, but his vision remains a collective creation and constant pursuit.

On the other hand the rural school concluded, according to its action plan, that first of all it is of high importance, schools to organize and plan their actions in long term (Sniehotta, Schwarzer, Scholz & Schüz, 2005). We realized that planning a three or four years plan will be absolutely beneficial for achieving goals and upgrading educational practices. This also reveals that an essential evaluation can only be performed after a long period (3-5 years) of actions and activities. Secondly we confirmed the importance of lifelong training for teachers and educators. Doubtless, participating in educational seminars, conferences and training meetings allow teachers to be always informed about new educational trends (Day, 1999). Implementing all these compulsory methods in classrooms turns out to be extremely positive for students. Furthermore, organizing extroversion events by entrusting critical responsibilities to students was also one of our positive remarks (Elmore, 2007). We observed that all these events joined teachers, students and local community together. Science and culture came closer to students and local society, while the interest of students rose remarkable. All these events include the element of collaboration and cooperation between several partners and promote our basic goal of knowledge diffusion. Additionally, participation in contests is another crucial parameter (Bishop, 1991). Healthy competitiveness between students and schools can only offer benefits to all participants. Winning a contest is not the key. We are mainly interested in the whole progress and steps of contest. We wish students to take part, work, and search, compose papers and support publicly their projects. Of course a won contest satisfies students and encourage them for new tries. Another remarkable conclusion is the importance of educational scenarios, material and content

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(Jacobson, 2006). All these produced objects are really useful for planning and orienting bigger action plans. Furthermore if all these educational objects are uploaded in websites, everyone can easily access and use them. Finally, we can claim that each step was an evaluated progress of a previous one, helping us to achieve goals and milestones. This is how a school learns by itself and by others.

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