INNOVATIVE MODELS OF PEDAGOGICAL IMPLEMENTATION OF ICT IN ISRAELI SCHOOLS

David Mioduser, Rafi Nachmias, Dorit Tubin, and Alona Forkosh-Baruch

Tel-Aviv University, School of Education, Tel-Aviv, 69978, Israel

miodu@post.tau.ac.il

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ABSTRACT

In the paper we analyze the data collected in ten schools in Israel which have incorporated ICT in unique ways and have succeeded in devising innovative classroom pedagogies and changes in teachers and students roles and outcomes. The major research questions addressed are: (a) What levels of innovation were observed in the participant schools, and in which domains? (b) How does the level of innovation in the various domains vary among and within schools? (c) What correlation patterns among levels of innovation in the various domains can be identified? The results of ten comprehensive case studies of exemplary schools in Israel were analyzed by mean of the *innovation analysis schema* developed by us for characterizing ICT-based educational innovations. The findings indicate that most schools as such are in transition stage towards fully innovative pedagogical implementation of ICT; school activities are effected differentially by ICT, thus creating "islands of innovation"; these islands however have the potential to pull forward other areas of activity and people in the school; the domains most affected by ICT are the school's "digital space", the didactic solutions implemented, and the students' roles and outcomes; in contrast, domains such as physical space, time configuration and professional interaction among teachers were less affected; schools' and particular persons' vision and determination, and students' drive for involvement and participation, are crucial factors in the development of the innovations.

INTRODUCTION

A great deal of theoretical and empirical work has been done for several decades regarding the impact of ICT on educational processes (for ample surveys of these research efforts see Becker, 1994; Mioduser & Nachmias, 2002; Pelgrum & Anderson, 1999). The incorporation of ICT into the school has affected its functioning at multiple levels: new configurations of learning spaces and timetables have been created; innovative teaching methods were devised; autonomous and active learning processes using the technology have been adopted; teachers' traditional roles have been expanded, and include personal and group tutoring and guidance functions; and new ICT-based curricular solutions have been generated.

In this paper we report the results of a study conducted as part of our involvement in two international research projects on school innovation using ICT. One is the Second Information Technology in Education Study (SITES) Module 2, by the IEA (Kozma, 2000), and the other is the Case Studies of ICT and Organizational Innovation, sponsored by the OECD, (OECD/CERI, 2000). Both studies concentrated on case studies of successful and innovative implementations of ICT in about 30 countries. In Israel, we examined comprehensively ten schools that have incorporated ICT in unique ways and succeeded in devising innovative classroom pedagogies and school system changes (for a broad description of the study and its results see Tubin et al., in press). The research questions addressed were:

a) What levels of innovation, and in which domains, were observed in the schools?

b) Do levels of innovation vary among domains within a school?

c) What are the relationships among levels of innovation in the different domains?

METHOD

School selection procedure

To select the participating schools a preliminary list of about 100 cases (recommended by the Ministry of Education, school networks, non-profit educational organizations, and Universities) of innovative usage of ICT in schools was created. On the basis of information collected about the schools, and the application of defined selection criteria, the study's expert advisors panel together with the research team proposed the final list of candidates for the case studies (in this paper the schools are referred to as ILxxx, eg, school IL001).

The selection criteria stated that an appropriate candidate is a school practice:

1. That shows evidence of significant changes in roles of teachers and students, the goals of the curriculum, assessment practices, and/or the educational materials or infrastructure.
2. In which technology plays a substantial role.
3. That shows evidence of measurable positive student outcomes.
4. That is sustainable, transferable, and scalable.
5. That is innovative, as locally defined in each country.

Data collection tools

Eleven tools were designed by the international research group and adapted locally: principal questionnaire; principal interview; computer-coordinator questionnaire; computer-coordinator interview; administrator or supervisor interview; focus-group interview of teachers involved in the innovation, and teachers not involved in the innovation; focus-group

interview of students involved in the innovation; focus-group interview of parents familiar with the innovation; observations; learning products analysis.

Data collection process

Data was collected between December 2000 and June 2001 in ten schools, by a team comprising nine researchers. Small teams of 2- 3 researchers visited the schools 3-5 times spending altogether about 60 person-hours per school. A typical interview lasted about an hour and a half, and was carried by one researcher. Classroom observations typically lasted 45 minutes and were held in pairs. All interviews were recorded and all observations were written down. All data were transcribed into digital files and uploaded to the Israeli research Website (http://muse.tau.ac.il/ict).

Data analysis

For the systematic analysis of ICT-based pedagogical innovations in the participant schools we developed the *innovations analysis schema* (only a brief description of the schema is presented here, for a more detailed description see Mioduser et. al, in press). The schema's dimensions are defined by two axes. The horizontal axis represents levels of innovation, ranging from preliminary alterations of the school's routine due to the initial assimilation of ICT, to far-reaching transformations of pedagogical practices and learning processes. Three main levels were defined. The first level -assimilation- is the situation in which specific pedagogical situations change qualitatively, but the school curriculum as a whole (e.g., content and goals), the instructional means (e.g., textbooks), the learning environment (e.g., classrooms, labs), and the learning organization (e.g., timetable) remain unchanged. The

second level -transition- is a situation in which ICT supports the integration, within the school's everyday functioning, of new contents, didactic solutions, and organizational solutions side by side with the traditional ones. In the third level -transformation- substantive changes take place in the school system as a whole. Traditional processes still exist, but the school identity is mainly defined by the rationale and goals of new approaches and lines of operation; student and teacher roles are enriched with new dimensions; new contents are introduced to the curriculum; new teaching methods are developed and implemented; and for particular activities the traditional time and space configuration is transformed.

The vertical axis details domains of innovation, focusing on four main constituents of the school's milieu: time/space configurations, students, teachers, and the curriculum. Table 1 presents a summary of the innovation domains and levels in the *innovation analysis schema*.

Insert Table 1 about here

Two independent evaluators analyzed each case-study's data using the above schema. Each evaluator came up with a scaling for each school in each domain on a 5-value scale: 1 - basic assimilation level, 2 - beginning of the transition, 3 - transition level, 4- - beginning of the transformation level and 5 - full transformation level (it should be noted that the analysis unit in this study concentrates on specific innovative pedagogical practices using ICT within schools, and not on the whole school). The evaluation resulted in 90 school-level-locations (SLL), for 9 sub domains in 10 schools. Out of the 90 SLLs, matching judgment was reached for 75 (83%) in the first evaluation round. The remaining 17% were discussed and elucidated by the evaluators and other members of the research team, until full agreement has

been reached. The final results of the scaling was analyzed in various ways as presented in this paper.

RESULTS

The study results are reported here according to the research questions, namely levels of innovations in schools, characteristics of innovations in schools, and relationships among levels of innovation in the diverse domains.

Levels of innovations in schools

The ten schools presented in this study were chosen because they were considered as successful examples of "using ICT for pedagogical practices in an innovative way". Yet, the question remains whether and how this innovation is reflected in some or all domains of the school's activity. Table 2 presents the distribution of the Israeli schools by level of innovation for each domain.

Insert Table 2 about here

Data indicate that most schools, in most of the innovation domains, are at the transition level (65 out of the 90 SLLs - 72%), and only in few domains (17 SLLs -19%) they reached the transformation level. Taking into account that the ten schools were selected as models for innovation, this distribution shows a different pattern than expected. Specific data by domain follows.

Time and space configurations

Physical space. In general, the classroom walls remained intact. Eight out of the 10 schools are in the assimilation and transition levels, being their computers located in public spaces (e.g. computer room, laboratory). The two remaining schools are in the transformation level. For example, in school IL003 the building was designed from scratch in an innovative and technology oriented approach, integrating massively ICT facilities in all learning spaces (see description in a later section).

Digital space. Most of the schools are located in the transition level and beyond. For example, several schools have developed Websites serving as online news board, as portals to dynamic learning centers, or as virtual gateways to Websites all over the world.

Time configuration Schools at the assimilation level incorporate ICT activities within their structured schedule and timetable. One example is school IL008, which operates 13 virtual courses embedded in the regular timetable. At the transition level, periods are organized in time-blocks within which the students are free to use the computer for their needs (e.g., students acting as computer trustees are allowed to skip regular lessons for completing their computer assignments). Five schools located at the highest levels of innovation showed a fairly flexible organization of time. For example, high school IL006 allows its students at the radio division to use ICT and work on their radio programs during the school day and beyond, till late afternoon, according to their needs.

Student role

Most of the innovative practices (6 out of 10) cause a significant change in student role, who became Website constructors, teachers' assistants in ICT-related matters, or ICT projects managers. For example, in High school IL009 the students worked in teams to solve real problems and to accomplish projects invited (and funded) by local High-tech companies.

Teacher role

Teacher/student interaction. Schools that were in the transition level and beyond showed interesting changes in teachers' role. For example, in High school IL007, teams of teachers and students work together in developing Websites in about 20 subjects, which would serve the ongoing teaching and learning in the school. This interaction eventually makes the teacher more familiar with the technology, and the students more knowledgeable with the subject under study.

Teacher/teacher interaction. In 8 out of 10 innovative practices the relationship among teachers are in transition level and below, showing only limited team work and collaboration.

Curriculum change

Content. ICT use affects curricular contents in diverse forms. In 4 schools in which the innovative practices pertain to the transition level or below, ICT supported only a sort of expansion of the traditional subjects. At the transformation level, schools used ICT for dealing with new subjects. For example students in high school IL013 developed a comprehensive Website about the salt flat near to which their regional school is located, and

collaborated with Jordanian students working on contents and issues related to the shared natural phenomenon (see description in a later section).

Didactic solutions. Most of the innovations observed pertain, regarding didactic practices, to the transition level, e.g., the use of digital worksheets stored in Websites to practice earlier studied topics, or searching the Internet for information to be used in class. At the transformation level the learning activities are qualitatively upgraded by the use of ICT. For example, in the greenhouse at High School IL015, the students engage in research projects dealing with real problems like fish nutrition or water contamination (see description in a later section).

Assessment methods. In school innovations at the assimilation level ICT is implemented in traditional fashion. Innovations located at the transition (3 schools) and transformation (5 schools) levels, included the use of novel assessment procedures such as polls, Websites design contest, or digital portfolios.

Characteristics of innovations in school

Although all schools in this study are innovative in a particular way, they differed from each other in many aspects. In this section we examine how the levels of innovation in the different domains are distributed within schools. Table 3 presents the level of innovation for all schools in all nine domains. For each school, two coefficients were calculated: the first is school overall level of innovation (calculated as an average of levels for all domains). The second coefficient is a measure of deviation of the nine domains from this average (SD).

The variation in innovation level among all innovative practices suggests that ICT implementation is a process, and different schools can be performing at different stages of this process. The deviation of the level of innovation per domains within each school indicates that the innovative pedagogical practices have a differential impact on the diverse domains. In some of the schools the innovation level is homogenous (similar records for all domains), while in others it is very heterogeneous. This coherence can be observed at any location in the innovation level scale, e.g., IL002's innovative practice is consistently located in all domains slightly below the transition level, and IL015 coherently located at the transformation level.

Insert Table 3 about here

Correlation among domains of innovation

The third research question relates to the degree of correlation (Table 4) among innovation levels in the diverse domains (it must be noted that only ten schools are being analyzed, implying that the correlation indices and their significance should be viewed primarily as an indication of general trends).

Insert Table 4 about here

Changes in student role and in the nature of teacher/student interactions are highly correlated with changes in time and digital space configurations, and with new didactic solutions. In

the case of teacher/teacher relationships, most correlations with other domains are very low, suggesting that the innovative practices have had little influence in teachers' communication and work patterns. The curriculum-related domains usually correlate moderately and high with each other and with the rest of the domains, indicating that innovative practices compromise the curriculum in a systemic way, bringing about changes in all its components. Of all the domains, didactic solutions was the one with the highest correlation with nearly all other domains (except teacher/teacher interaction), indicating that this is the central domain of the educational innovative practices.

Examples of distinctive models of innovation in different domains

In this section we describe examples of practices in specific schools, which illustrate unique aspects of the innovations in different domains.

Innovation in students' role: Computer trustees

The innovation in school IL002 is based on the involvement of students in leading the process of ICT implementation within the school. The students act as tutors for the school staff in teacher-training courses, assist them in lessons in which ICT is implemented, and in preparing lesson plans. They act in a number of circles outside the school as well. They have adopted a special education school where the trustees train students to use the computer, to edit presentations, to search the Internet and to download learning materials. They also run "The Inter-Generation Connection" training senior citizens in surfing the web, using e-mail and ICT in general. The activities supply the senior citizens a communication channel, as well as learning skills and enrichment in their leisure time. As posted in the inter-generation

online forum: "*I learned new things regarding the computer, and I reached a conclusion that there is no end to studying*." (Lady senior citizen), "*When I returned from abroad, my first time out was for the computer course, and I felt that I did come back home*." (Lady senior citizen).

The core innovation of the trustees project is that it allows students to play an authentic and substantial role in the school's community. Students play commonly the (passive) consumers role in the school system. In some occasions they are given the possibility to play other roles (e.g., history trial, or one-day student-ruling of the school), but these are mostly simulation exercises and not real-life tasks. In the trustees project the students are considered valuable human resources within the school community, as owners of knowledge which has authentic meaning for others inside and outside the school.

Alternative space, alternative time, alternative curriculum: The computerized Greenhouse

The computerized greenhouse is an exceptional learning environment functioning in a kibbutzim regional school, since the 80's. About 15 years ago the greenhouse was computerized, and ICT became an integral part of its functioning and of the learning activities in it as well. Every year, about 50-70 students plan and carry out projects in biology, technology, ecology and agriculture as part of their high school matriculation studies. The greenhouse works as an autonomous organization. It is run by a team including the director (a graduate of arts and a conceptual artist) and a few part-time instructors and assistants (students) who coordinate the different fields (fish, plants, water, ICT). In addition, there are first-class experts from research institutes and the ministry of agriculture

who instruct the students in their research. The activity hours are every day within and after school hours, sometimes till late evening.

To explain the model according to which the greenhouse works, the director draws a triangle in which one of its sides is education, another research and experimenting and the third is art and innovation. The greenhouse integrates all 3 domains, and this is what creates the special atmosphere on the one hand, and the flexibility and adaptation of the greenhouse on the other. *"The model I believe in is the creation of islands outside the school, that can sustain themselves financially … for example, they could find contacts with certain high-tech companies, or with people who will be willing to invest."*

A 12th grade student who spent the last 5 years at the greenhouse, commented on the learning atmosphere: *"this is nothing compared to the classroom,"* [This is a place where] *"you don't just come, take your measurements and leave with your log, like in other schools. Here there's brotherhood, love, it's fun to work here with the people. I, for instance, am in charge of the whole fish team. If 8th grade students come, and the fish topic will interest them, I'll push them towards it, I'll get them into it, I'll want them to take care of the fish after me,"* .

The greenhouse allows students to be involved in authentic learning projects (with real scientific, technological and economical value), in a temporal/spatial/social/curricular configuration that represents a highly innovative alternative to traditional schooling.

Systemic school design and implementation: School of the Future

IL003 is one of ten schools in Israel founded by the Ministry of Education in the 90's to examine innovative educational models. It was planned and built as advanced schooling

model, according to an educational concept that views ICT as a means for empowering and redefining the relationship between students and knowledge, for facilitating learning skills acquisition, and improve academic achievement. As one of the teachers reported: *"Since the school from its very beginning was enriched by computers, it would be very difficult without them, because half of the curricula is computer-based." … "Without the computers, this is a different school…"*

The innovation of the school is in its holistic perception and integration of several components: the physical structure and organization (including architectural design) supporting the pedagogical approach; professional teams that develop and adapt curricula; the organization into two-year "homes" (instead of regular classes); the implementation of ICT in almost all disciplines; a variety of teaching and learning methods; an emphasis on self studying and student responsibility; the use of alternative assessment, such as portfolios and projects – all these are an integral part of and support the innovation. At the end of the 6th grade the school tests the students' mastering of computer skills.

The school "homes" are spaces for about 75 students of double-age grades (kindergarten to 1st grade, 3rd to 4th grade, 5th to 6th grade), taught and administrated by a staff of 2-3 members. In each home there are 3 studying environments: the open space teaching area, the computer gallery, and the mini-auditorium. Learning takes place in each environment according to the subject and the assignments. ICT-supported learning processes are performed throughout the day, covering about 30% of the lessons. This structure demands intensive teamwork for the planning and implementation of the curricula. Most of the

communication between staff members is through e-mail, and all didactic materials are stored in electronic databases.

The academic advisor of the whole project assesses: *"Maybe the most evident achievement is that the teachers have become a learning community… not only students, but also teachers learn in this school all the time… The school norms have become academic in nature, in that you can inquire about anything, doubt anything, you have to work hard, prepare and plan, keep track of processes via documentation and explain steps you take. It is not an ideal place, it has human weaknesses."*

Curricular innovation: "Humans and their surroundings" Websites

One of school IL015's main goals is fostering an independent learner. Special emphasis is put on project-based activities, alternative evaluation, and independent studies. As the principal (a Geologist) explains: "*the students begin with a personal project in grade 1, and end with their final project in grade 12… in a variety of contents, and at different skill levels*".

A central curricular project in the school is its continuously developing Website, conceived as a dynamic learning center for the whole school. This Web learning center contains projects by students, a bank of geographical and historical textual and visual materials, learning activities, links to relevant Websites, and sections for special education and immigrant students. A special component in it is the collaboration between the school's and Jordanian students from the village of Rah'me, around the topic of the nearby salt flat. The international border divides the salt flat between Jordan and Israel. This represented the opportunity to work together, also (but not only) using ICT, in issues related to the shared

natural phenomenon. As phrased by a teacher: "*if we can not go now to Jordan, by pressing a key we can bring peace closer*".

According to the principal, one of the reasons why the school became "*a good place to be to*", are the numerous projects running at the same time (e.g., purely academic such as the Website construction, social as the absorption of the Ethiopian students, or cultural as theater or music groups). "*Some teachers call me 'a community center director', but I have no problem with that. I believe that is the way one should work. With all the respect to us as teachers, there are many situations at which students learn a lot by themselves without our intervention, and we should facilitate these situations in school. Computers are an excellent example*".

DISCUSSION

The extent to which ICT implementation in education has affected the structure and functioning of schools, pedagogies in use, contents being taught, or learning achievements, has been a matter of controversy over the years (e.g., Cuban, 1986; Schank & Yona, 1991). However in practice, numerous successful examples of innovative ICT uses for teaching and learning are found all over the world (Mioduser et. al. 1999; Voogt & Odenthal 1999, Venezky & Davis, 2002). Here we elaborate on our findings in ten Israeli schools, as part of our participation in the IEA's and OECD's international studies.

A first overall observation is that most practices in the participant schools, for most domains (and sub domains) considered, occur in the transitional-towards-transformational level. Taking into account that the ten schools were selected as models for innovation, a complete

transformation in most aspects could be expected. However, the findings show that the assimilation and diffusion of ICT-based innovations within schools is a complex and gradual process, even under the most favorable conditions (e.g., highly motivated leaders, infrastructure, human and financial resources).

Not all areas of activity in the school are affected in similar way. Usually resources and efforts are allocated mainly to foster the innovation's goals in a defined area (e.g., a subject, a specific population, a novel pedagogical configuration). As a result, in nearly all schools significant changes took place mainly in those sub-domains that were relevant to the innovations focus.

Our findings indicate that the domains "digital space" and "didactic solutions" underwent the most significant changes by the implementation of ICT. Next to be affected were the student role, the teacher/student interactions, and the assessment methods. Less affected by the innovations were the physical space and time configuration, the content areas and the interactions among teachers. An important conclusion can be drawn from these observations: the main beneficiaries of the innovations studied were the students. The innovations implied for them new roles, learning situations, patterns of interaction with the teachers, learning spaces, and forms to be assessed.

A central conclusion of the study relates to the type of relation existing between the innovation and the school's context. In many schools, the observed practices appeared to be "islands of innovation", clearly discernible in the surrounding sea of traditional practices. In these schools the innovation is driven by a small but highly motivated group (from within and outside school), with explicit support of the principal. However, in a few schools the

studied practice was a part of an intricate web of innovative projects. In these schools the encouragement of innovations is embedded in explicit vision and policy, and staff and students are committed to its implementation.

Finally, a few words on the continuation of our investigation of the case studies. First, there is the work with the international database (about 200 cases in about 30 countries) enabling the examination of questions that are beyond the scope of the present paper (e.g., major trends evolving in the various domains, the role of cultural and contextual factors or national policies in the development of the innovative practices). The second line of planned work will focus on the identification and close examination of the whole set of factors (e.g., human resources, infrastructure, staff training, policy, outside-school agents) affecting the emergence and sustenance of innovative practices in schools.

In spite of the particular features of educational systems that make them more resistant than other social systems to the adoption of innovations and change, and in spite of the skeptical voices questioning the very need to promote the integration of ICT into teaching and learning process, there is no doubt that there are clear signs of change in countless examples from schools worldwide (Venezky & Davis, 2002). It is fairly clear that these are times of transitions both for technology and pedagogy (Dede, 1996). Our role as researchers is to accompany these exciting processes, shed light on the factors for success and failure, recognize evolving trends, and help to devise new and improved pedagogically sound practices using ICT.

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Table 1: Levels and domains of pedagogical innovation using ICT

Domains \ Levels		Assimilation	Transition	Transformation
Time and space configura-tion	**Physical space**	Public spaces	Public and personal spaces	Personal and community spaces in school and Beyond
	Digital space	Desktop and Internet applications usage	Flexible Internet use and content creation	Virtual learning spaces and organizations
	Time	Mainly embedded in the schools schedule and timetable	Flexible access for individuals within constraints of school's schedule	Any time for all in school hours and beyond
Student Role	**Main roles**	Using ICT for accomplishing curricular assignments	Development of ICT generic expertise – for usage, maintenance, and creation	Personal assimilation of ICT as learning, creation and working means
Teacher Role	**With students**	Main source of leadership, information, and knowledge.	Pedagogic authority, mentor, supporter, coordinator	Expert colleague, partner to the process of discovery.
	With teachers	Acting individually, functional peer interaction	Team work, collaboration, mutual help	Acting cooperatively, organic solidarity
Curriculum	**Content**	Traditional subjects enriched with ICT	Expanded subjects incorporating new knowledge resources	New subjects; Design and development using ICT.
	Didactic solutions	Tutorial packages, constrained use of generic tools and Internet	Open assignments and projects using generic tools and Internet	Virtual environments, development of personal digital spaces.
	Assessment methods	Digital versions of standard assessment means	Criteria development for assessing digital products	Digital alternative assessment: projects, portfolio, etc.

Table 2: frequencies of Israeli innovative practices by innovation level and domains (n=10)

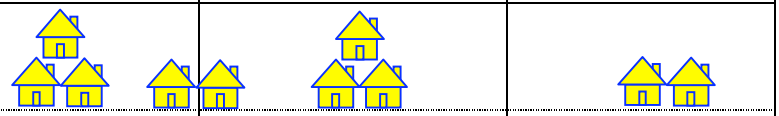
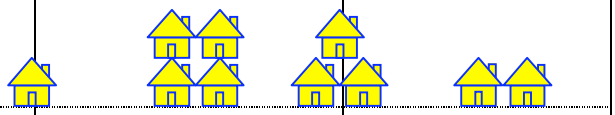
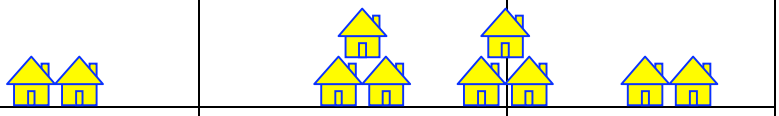
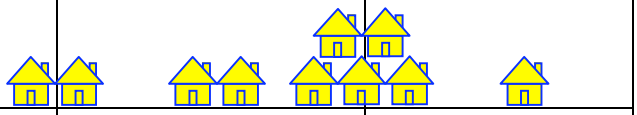
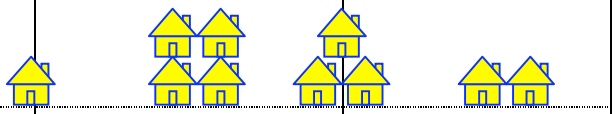
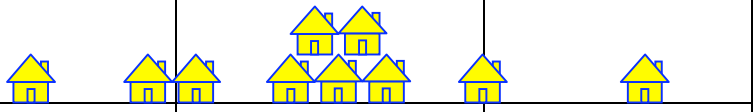
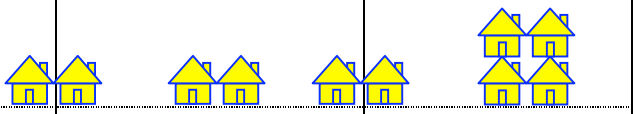
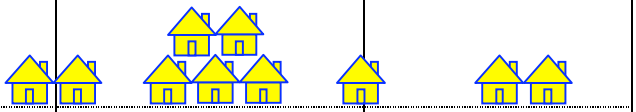
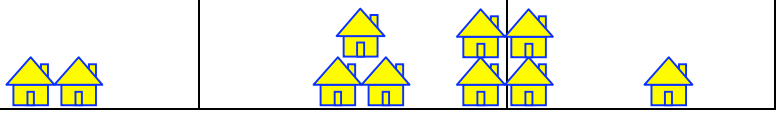
Domains \ Levels		Assimilation	Transition	Transformation
Time and space configura-tion	Physical space			
	Digital space			
	Time			
Student Role	Main roles			
Teacher Role	With students			
	With teachers			
Curriculum	Content			
	Didactic solutions			
	Assessment methods			

Table 3: Schools levels of innovation

Domains \ School		IL001	IL002	IL003	IL006	IL007	IL008	IL009	IL010	IL013	IL015
Time and space configura-tion	**Physical space**	3	1	5	2	2	1	3	1	3	5
	Digital space	3	2	3	4	4	3	4	3	5	5
	Time	1	3	4	4	3	1	3	4	5	5
Student Role	**Main roles**	2	3	4	4	4	2	4	3	4	5
Teacher Role	**With students**	3	3	3	4	3	2	4	4	5	5
	With teachers	3	1	5	2	3	3	3	3	4	2
Curriculum	**Content**	3	2	5	4	2	3	5	4	5	5
	Didactic solutions	3	2	4	3	3	2	3	3	5	5
	Assessment methods	3	1	4	4	3	3	4	1	4	5
School average level of innovation		2.7	2.0	4.1	3.4	3.0	2.2	3.7	2.9	4.4	4.7
School deviation of domains		0.7	0.9	0.8	0.9	0.7	0.8	0.7	1.2	0.7	1.0

Table 4: Correlation matrix of the innovation domains (N = 10 schools)

☐	Physical space	Digital space	Time	Student role	Teacher student	Teacher-teachers	Content	Didactic solutions	Assess-ment
Physical space	**1**								
Digital space	**0.49**	**1**							
Time	**0.43**	**0.58**	**1**						
Student role	**0.60**	**0.71***	**0.85****	**1**					
Teacher - student	**0.41**	**0.76****	**0.83****	**0.71***	**1**				
Teacher - teachers	**0.44**	**0.17**	**0.09**	**0.05**	**-0.04**	**1**			
Content	**0.67***	**0.58**	**0.61**	**0.56**	**0.67***	**0.47**	**1**		
Didactic solutions	**0.78****	**0.78****	**0.75***	**0.70***	**0.78****	**0.41**	**0.73***	**1**	
Assessment	**0.77****	**0.77****	**0.32**	**0.60**	**0.42**	**0.32**	**0.64***	**0.67***	**1**

* $p < 0.05$, **$p < 0.01$