

Motus – Monitoring Tablet Utilization in School

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Origins and goals of the experimentation

The experimentation of tablet in nine secondary schools in the Northern part of Italy, associated with a monitoring action as further explained, is based on the idea according to which the process of massive introduction of mobile devices (like many other instruments), if not supported by quality training, monitoring processes and teacher's support, could generate turbulence without results, with almost three risks: do not change traditional teaching practices, consider the contribution of tablet at the level of its simple technical use, mortify students' participation, boring them and causing frustration.

The project was built up to meet the following goals:

- collect data relating to the use of mobile devices and the representations provided by students and teachers on the tablet;
- coach teachers in their use of the device at school;
- promote a cultural appropriation of technology providing educational support and professional development;
- study whether and under what conditions the tablet can become an instrument in teaching;
- provide opportunities for sharing of experience among teachers in different schools, through local seminars and online participation.

Methodology

The training model is inspired by the BLEC (Blended Learning, E-tivities, Coaching) Model developed by CREMIT during the last few years working alongside schools, and consists of three panels:

1. training (Blended Learning), which includes three seminars to share ideas and theories that have a direct impact on teaching;
2. coaching, that means to accompany teachers with a familiar figure (the coach in fact) that becomes a guide for methodology issues and for supporting the group;
3. a well-defined set of activities (E-tivities) suggested to the group and analyzed to return

comments and guide practices in school.

The research instruments used are the followings:

- an initial questionnaire to investigate the uses and expectations, aimed at students, teachers and families (95 teachers, 100 parents, 276 students);
- a focus group, which involved students to explore these questions of method and the ideas of on the presence of the tablet in the classroom (10 sessions with 8 students each);
- two sessions of classroom observation by the method of video research (using the camera to observe the interactions and a grid to order the findings got by researchers);
- a final questionnaire for teachers to detect changes in practices, critical and positive remarks regarding their experience with the tablet.

In this report, we decided to discuss teachers' and students' opinion, leaving families out of the door. The full report will fully integrate this decision, with parents' opinions.

Main results in brief

Teachers' representations and activities held in the classroom

First of all, teachers represent the device with the metaphors of a toolbox (chosen by 30.5% of teachers) and of a "creative mind" (28.1%). The first relies on the idea that the tablet is a great aggregator of tools, putting together useful apps for education and recreation, camera, voice recorder, network, writing, Internet. All you need to do at school. The second refers to the multi-language that can encourage greater creativity and the expression of students' talents. These images are very current in the work of teachers observed and they are present elements in teachers' description of classroom activities and students' report during the focus group.

In fact, as related to teachers' activities with tablet, they reflect past activities normally done with other technologies: the use of presentations and the use of technology to write papers. The data seem to confirm, on the one hand, how often the use of a new tool assumes a logic previously experienced, at least in the choice of activities (the tablet as a screen). On the other we noticed an increase in the use of Internet to do research and an increase in group work.

Teachers consider the device as a potential tool for increasing students' interest in staying at school (47.8%) and in participation (46.7%). We point out that the increase in classroom participation is significant and it is described by students too. We wonder, however, if it depends on the instrument, or by the simple fact that the instrument is inserted into a frame of different

activities. If students usually listen to teacher's talk, they are certainly more involved working with mates in the preparation of a presentation or a video. But this depends on the fact that they work with classmates, comparing them in small groups and putting their skills at the disposal of the other, or whether to use an app or the tablet camera (if enabled)? Maybe both.

Students' ideas on the device

As always happens when you listen to the opinion of students, the research team was favorably impressed by the lucidity, the awareness, the maturity of the observations of young people.

Tablet is for students primarily a magnifying glass (21.6%), again as for teachers a toolbox (20.1%) and an occasion to have the world at your fingertips (15.5%) , maybe for the great use of social media they have narrated.

Students use mainly application for taking notes (43.8% use very often such Notes and the same applies to Evernote which reaches 33%), followed by sharing platforms such as Google Groups indicated by 31.3% (every day or several times), while Youtube reaches 54.1% (with the same frequency) and the emails about 50.1%. Finally, 57% use social networks every day. 81,2% declare using search engines as a daily practice.

Specifically, the tablet is completely useful for 40.5% (not at all for 2.2%) and motivating (completely for 26.5%, not at all for the 5.6%).

But the device does not increase attention, and this is a subject on which students expressed a view similar to that of many teachers, perhaps because they closely know the range activities that the tablet allows you to carry out. Thinking about such situations, students consider the tablet quite distracting during teacher's talk (that is, when they must listen and maybe the temptation not to take notice and to respond to the status of a friend on Facebook is strong). The theme of distraction and attention is a recurring element (therefore not only in the words of teachers).

The device, however, seems decisive in the organization of students talks in front of mates (77.4%), echoing the metaphor of the creative tool: if mobile devices are tools for creative expression, that's why the activity that will have greater weight is the presentation of student's work.

Benefits vs problems to face with a tablet

The use of technology has not significantly helped students to understand concepts, remember better and do their assignments, but did so in relation to the possibility to deepen (83.4%), to

make summaries (70.4%), to find links between topics (68.7% of students).

The device seems to affect the emotional and relational processes. In this sense, it appears to activate a closeness between student and teacher and among the students themselves (80.8% of students). Students in fact indicate an increasement in communication, not only among mates but also between teachers and students: teachers who respond also via e-mail and communicate with them outside of the classroom are significant for students (which affects the performance and their well-being).

The problematic features encountered by teachers are related to technical issues and the management of the classroom/students, with substantive equality between the question of the applicability of the functionality of the tablet and the teachers' working time.

We can highlight three important data: the tablet is especially useful when used to work together, because it promotes communication, at the same time it is distracting, but still useful in terms of "lightening" the backpack (no books to carry).

As suggested by a student, it also depends on who uses the device, on his intention, because if you want to be distracted you simply need a piece of paper and a pen, to play the old and famous naval battle game.

Certainly we are in a phase of transition, as we experience difficult tasks and procedures that in a few years will be in a routine and somewhat essential.

We could say that the tablet acts as a reinforcement, hooks new examples and data are tangible, visible and readily available (reinforcement, to be valid, must be contextual to what has been learned, close to the time when you come across the concept for the first time, so a connected tablet can help) .

To work proactively with the tablet, encouraging the pooling and sharing of resources, it can not only facilitate the development of interpersonal intelligence, as well as the visual (prevalent in the observed activities) and verbal intelligence.

Final remarks

In conclusion we would like to highlight some of the issues on which the report calls likely to reflect.

A first element is the active commitment of teachers. Technology has entered in their daily school agenda: the percentage of those who claim to use the tablet with continuity in its teaching is important. It was not granted. The contrast between the Old and New, Culture and Technology,

Paper and Digital, is still very strong in our classroom settings and this often leads to attitudes of resistance or explicit rejection. A first element in favour of the experimentation is related to the movement of this inertia: teachers are brought into play, they accepted the challenge.

Of course, this does not mean that there are not critical elements. These refer in particular to two aspects.

The first has to do with the time variable. Research and teaching practices of expert teachers have set two unwritten laws: learning deep (with or without technology) requires a lot more time to prepare lessons and also a lot more time in the classroom. Specifically, if I want to select resources to surf the web from my students, if I want to prepare a storyboard of the lesson I need much more time as if I do lectures using my materials, accumulated over the years in my teacher portfolio. Similarly, if I want my students to learn through discovery, whether my teaching is meant to be active and involves the production and collaboration of students, I imagine it to need more time than the "chalk and talk" traditional way. Now, if 30% of teachers believe that they did not change their preparation time and almost 50% believe that they did not change the timing of teaching in the classroom (as resulting from our research), probably you tend to do the same things with the tablet as before. Teachers should say, **"Check your time, at home and in the classroom! If you need more time, you're doing a good job"**.

The second aspect relates to the primacy which, even with the tablet, it is recognized to the visual and verbal intelligence, to quote Gardner. This means that, even with the tablet, talking and supporting teacher's explanation with presentations continue to be the core business. A logic of the full exploitation of the potential of technology, however, should encourage as much as possible a "flipped" logic in which finding and a first appropriation of information is done at home by the student, while on the contrary the time of the lesson should be released for the problem solving (individual and collaborative), to discussion, laboratory activities, experience. This produces a second indication for teachers: **"Check your initiative in the classroom! If you realize you talk less, you're doing a good job"**.

These two problems - that of time and of teacher's work - are probably the two crucial points on which schools that will want to continue their innovation process will have to work out in the future.