STRATEGIES FOR PROFESSIONAL DEVELOPMENT IN TEACHING BASED ON THE USE OF DIGITAL RESOURCES: PRACTICAL CASES

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Abstract
In the field of the implementation of Information and Communication Technologies in schools there is a tendency to show the positive aspects of carrying out innovative school policies in Centres of education, promoting the recognition of existing school practises, and the knowledge of teaching staff. This involves groups of teachers who have voluntarily improved their own teaching practise by careful planning, the materials employed and the presentation of the stages involved in a particular school project.

In the following paper we will discuss the proposal of ‘good teaching practise’ transforming it into realistic consideration, namely ‘practical cases’. We will consider that when presenting teaching aids for the promotion and diffusion of innovations, one continues to make use of tried and tested approaches in teaching, which pay attention to the cultural characteristics of the professional groups in question.

The potential of Practical Cases for promoting change in professional development depends on their credibility among peers, and of the interest awoken by studying the proposal of public disclosure of projects, which reflect similar situations to those recognised as already valid teaching experience.

KEYWORDS: Professional Teaching Development, Innovation educative, ICT in education, Practical Cases, Case Studies.

A Reflexion on the Politics of Curricular Integration of ICT (Information and Communication Technology) in Professional Teaching Development

For some years now, within the field of education, the concept of the ability to reach a reasonable level of ‘good teaching practise’ as a useful tool to encourage innovation in schools and centres of education has spread and has been linked to the development of professional teaching staff. As an incentive, the Spanish Ministry of Education publish ‘National Contests of Good Teaching Practise’ which endeavour to ‘select and diffuse the most outstanding performances developed by Centres’ referring to a particular topic, such as improving dynamics of coexistence in schools, State Decree or (Official State Journal, BOE 142/2007, of 14 June) or the Innovation of School Libraries (Official State Journal, BOE 90/2007, of 14 April).

In the area of Information and Communication Technologies (ICTs) the demand from institutions continues its unaltered course. When the Andalusian Regional Council order University research groups to carry out external evaluations on programmes of the curricular integration of ICTs in Primary and Secondary Schools, they refer to the concept of ‘Good Teaching Practise’ to help them in their search for optimum implementation and management processes for these resources.

The aim of article is to analyse strategies for professional development in teaching based on the use of digital resources.

To be more precise, when we speak of ‘good teaching practise’ in the area of Information and Communication Technologies, we refer to an instrument, which provides solutions to difficulties facing teaching staff when they use media and digital resources in schools. Within this framework, ‘good teaching practise’ needs to prove useful:

1. by providing examples, as a system to evaluate the policy of integration of digital media and technologies in schools belonging to the digitalised information society.
2. as an instrument to justify the quality and helpfulness of digital technology by means of demonstration.
3. as a practical theoretical model in the organisational and didactic use of Information and Communication Technologies.
4. as a pedagogical resource in the ongoing training and formation of school Education staff.

In an initial analysis of this tendency, we are grateful to have reached a stage at which the progress in school innovations is attempting to promote the recognition of existing school practise. After decades in which discussions on pedagogical discourse have gone from “what should be done” from a technocratic point of view, or about “how badly things are done” in critical studies, it is in itself a victory to have reached the understanding of how we can best be supported in order to carry out policies of school
innovation. This lies in the search for the positive aspects which already exist in Centres of education, and in the open recognition of the knowledge of teaching staff.

However, most teachers demonstrate a distancing from this proposal due to their professional teaching culture, especially in infant and primary stages of education, although this feeling can also be found within the realms of secondary education. The historical path of these collectives can be defined, on the whole, by the activity of groups of teachers who have voluntarily made great efforts to improve their own teaching practise. Teachers consider innovation to be carried out best within work groups and that the hierarchical differences among teachers, along with the desire of certain teachers to stand out among the rest, are clear impediments to collaborative action. Evidence of this is also shown in a tendency to transfer the discourse and incentives for improving teaching, implemented in geographical areas which provide a basic reference for us: Europe and Hispanic-America. These tendencies have not taken into account the differences in policy framework for teachers in Spain, which has left a special professional view. Within our education system in Spain, a professional career for teachers or opportunities for promotion do not exist as they do in other European countries (Eurydice, 2004, 2006).

It is well-known that many of the best innovations have been carried out by the action of everyday teaching staff, and thanks to their interventions during meetings, congresses or workshops, where they have had the opportunity to demonstrate what they know, without feeling they have to ‘act as an example’ to others. The knowledge of the complexity of life in the classroom and exactly what influences each teacher, leads many members of teaching staff to feel only half-satisfied with their professional performances and to tread cautiously in their presentations. Studies we have carried out in the field of the assessment for innovation, have demonstrated that cultural traits within the profession can be of help as a transformation even from the most conservative of postures, depending on the prevailing ideological factor within a particular team of teachers (Rodriguez, A. and Fernandez; J. 2001). Due to this, when presenting teaching aids for stimulus for the promotion and for the diffusion of innovations, we feel it is advisable to make use of different approaches, paying special attention to the cultural characteristics of the professional groups in question.

The broadcasting and official announcement of ‘good teaching practises’ can provide valuable help for those teachers who feel enthusiastic about the fact that they provide a shining example among colleagues and should be applauded for their work. However, they leave aside and even feeling excluded a much wider sector, quantitatively speaking. Namely those teachers who are not known to be as ‘outstanding’ as other educators within their field may be. This wider group is what interests us most, firstly, because we understand that they should be the object of greater attention and stimulus, and secondly because we understand that, in the medium term, they will be the ones who promote a transformation on a greater scale, within the system of education for all.

In the field of the implementation of Information and Communication Technologies, facing validity of the strategy of ‘good teaching practise,’ becomes even more apparent. Educative discourse on how to integrate media is often associated with helpfulness and technological neutrality, given the fact that resources understood as ever more perfected tools can only, in the hands of possible users, enhance their professional abilities. In the same way, teachers who find themselves incapable of dominating the use of media tend to feel alienated and ‘out of touch’, by failing to obtain the obvious benefits in quality of teaching. This provokes three possible reactions within the collective:

- a feeling of a devaluation or worthlessness of their professional know-how;
- a feeling of being unable to reach concise instrumental knowledge;
- rejection of digital resources and, subsequent rejection - of low intensity confrontation - to any proposals of change.

This accumulation of feelings and attitudes induced in professionals is what is known as the phenomenon of ‘teaching exclusion’. This is of course, not so for all teachers, or indeed to the same degree, but in research and investigation we frequently find a greater amount of expert, veteran teachers, who feel proud of their educational performance, although who are the same time unable to adapt to and accept the inclusion of Information and Communication Technology in their teaching programmes.

Ultimately, we will maintain only part of the initial proposal of ‘good teaching practise’ transformed into another which, in our judgement, is more useful and far better: ‘practical cases’. The reason for this is that it is surely better for the cast of actors on the educational stage - teachers, students, coordinators, etc. -, to count on a repertory of practises which they can use to contrast and compare, at the time as they analyse and value their own decisions; and most of all, when they find themselves faced with different valid educative alternatives, as frequently occurs during processes of integration of the resources on offer.
through digital means. However, the potential of Practical Cases for promoting change in professional development depends on their credibility among peers, and of the interest awoken by studying this proposition; the public disclosure of projects, which reflect similar situations to those recognised as our own already valid teaching experience.

In order to deep root the sense of our proposal, it is important firstly to study what has not worked well in historical process when considering the use of Information and Communication Technologies, in an aim not to continue committing the same mistakes.

**Mistakes to Avoid: an Excess of Responsibility and Unfocused Teacher Training**

A great deal of the reasons for the success of ICTs being set back in schools and Centres of Education resides in a feeling of being baffled by them, along with a lack of training, which impedes professional development in this field, leading to the achievement of adjustments between what a teacher knows how to do, what they hope to learn, and what needs to be developed.

Education policies developed in the geographical context in Spain have provoked the fact that of the process of technological acquisition in schools has become the responsibility teachers with good intentions, who either by simply wishing to gain more experience, or by showing more interest than other colleagues in the use of new technologies, have become coordinators of a variety of Implementation and Curricular Development Plans. As coordinators and teachers, the tasks and practises assigned to them are by no means easy to carry out, as the responsibility of the success of programmes of policies of the curricular integration of resources falls upon them. Their ‘good intentions’ have often lead them to bewilderment and clumsiness when, in the course of technological implementation (from tape recorders to the current day) has always required a teacher’s new competences and skills of instrumental use, which have included (Noble, D. 1996, 18-23) learning to programme in BASIC, because “it is the programme which is provided on their computer”, to learning and teaching LOGO programming so that students “would learn to think, not only to programme”; to learn and teach in integrated systems (‘drill & practice’) to individualise teaching and to increase results in achievement tests; to learn and teach how to use word processors because “students need to use the computer in the same way as adults do”; to learn and teach with specific curricular tools, such as science simulators, historical databases etc.; to ‘integrate computers into the existing curricular’; to learn and to teach how to programme hypertext multimedia because students “learn more by creating products for an audience”; to learn and to teach with the Internet, so that their students “are part of the real world”; and more recently, to learn and teach how to manage and administrate new educative structures (such as Learning Management Systems), where students learn autonomously by self access.

Each new type of technology has been presented as providing ‘sure innovation’ as well as ‘the best media for the pedagogical revolution,” discourse which insists on the comparison between the use of new technologies and the improvement they best reflect:

1. **In learning:**
   - Facilitators of communication
   - Develop search skills with reason and sense, and organisation
   - Promoters of writing skills
   - Make what was invisible, visible
   - Make what was static, dynamic
   - Motivate
2. **In schools:**
   - Administration and management can be more efficient
   - Communication in the school can be enhanced
   - Teachers can build and share resources digitally
   - The school can publish achievements publicly
   - Improves communication between parents and local institutions and authorities
3. **For teachers/teaching staff:**
   - Increase interaction, albeit on-line, with students
   - Provide flexibility through work groups and collaboration among peers
   - Provide innovation in evaluation
• Enrich teaching-learning through complementary materials offered on-line and off-line
• Flexibility in the distribution of the school year
• Smaller units
• Centring on individual needs
• Combine methodologies and learning

4. In students:
• Increase interaction with others
• Make use of more resources
• Promote Companionship and collaboration
• Flexibility in where and how to teach
• Make evident opinions and ideas by means of a media
• Digital alphabetisation
• Share own resources
• Create resources
• Communication with others

Theoreticians have committed a fundamental error by forgetting the importance of common sense and the professional know-how of the educators who work in schools. This has been brought about by offering such an extensive list of supposed ‘helpfulness inherent in the use of technologies’, without studying the adjustment to didactic implications in our schools before the implementation of ICTs in the classroom. We intend to convince educators of the improvement to their teaching, the help of strange and new resources will offer them, without attending to the needs analysis expressed by them. Teachers are situated, as indeed are theoreticians, in a similar relationship to the leading market transactions concerning ICTs, (‘I will convince you of the quality of products so that you know how to use them...’)

although we ought to consider the utility of each tool in different contexts (for each group of students, teaching programmes, subjects, etc.)

The expert teacher who, when answering to the call of digital resources, does not profit from the benefits announced, despite the efforts made and to the detriment and loss experienced in other didactic strategies, has two options: to estimate exactly what has ceased to be of use in their work in schools or to consider which digital resources are of no use for teaching purposes, or at least when used intensively. Most teachers would undoubtedly opt for the second of the two.

The results of our investigations (CaMOT, 2007; BOJA, 2006), have gone one step further to explain why the implementation of new technologies in the classroom reflects different levels of ability in curricular development. We urge that the key is to associate them with known innovative methodologies - but that are not put into practise -. Subsequently, the message as part of a project for teacher training is altered, in the way that it is not only the technology that provokes the methodological innovation and improvement of learning, but instead that those who wish to be at the forefront of technological use, find themselves impelled to change their previous concept of teaching and common practise quite radically, if they wish to give a good impression of themselves as professionals who integrate ICTs into their particular area of the curriculum. This is one more responsibility which does not take into account what a teacher already knows and already does, but what they have yet to learn and do in order to identify themselves with the label of valid ‘good teaching practise.’

A consequence of the course of development in the diffusion of pedagogical messages for the teaching collective is that teachers will find them interesting and necessary, but few consider themselves technologically and pedagogically trained, neither do they feel worthy participants. These points are reflected in documents of Educational Institutions, recognising that it is one thing to understand and entirely a different matter a teachers’ self-perception of the ability to carry this out:

“It may be said with certain rotundity, that at first the most generalised attitude among teaching staff is that of the recognition of the social value of ICTs and of the necessity and challenge which Andalusian state schools face, is that which the informational society demands.

The importance of the inclusion of new technologies in schools is also understood, what it represents is: to try to balance social differences of Origin, by attempting to repair, or at least decrease the so-called digital gap.

These perceptions are shared by all education staff. Although in the case of teaching staff, there are two clear levels of understanding for school teachers: it is one thing to accept the importance this entire
topic generates, but quite a different matter, the personal implication involved in the elaboration or utilisation of materials, in the design of activities, in carrying them out with students... ” (Andalusia Regional Council - Junta de Andalucía, 2006, 18-19).

With the reiteration in discourses of what is the correct thing to do when considering the curricular integration of digital resources, a greater interest is being generated in teachers, but also more bewilderment. We would even go as far to say that there is a feeling of maladjustment. Teachers do not identify themselves with the image if being appreciated - either by themselves or by others - as innovative teachers in a technological environment.

They find classifications of school practices in educational literature on technologies, and what is more, in documents offered by the Administration intended to guide them, which reflect a methodological continuum and pedagogical conception; terms which go from “more traditional, traditional approach, textbook teachers, technical teachers” to “more innovative, the constructivist approach, teachers with plans of work, reflexive practise.” (Andalusia Regional Council - Junta de Andalucía; 2006, 39). These labels show and generate connotations. As only a few either due to characteristics associated with technological resources, or due to developing methodological proposals far from traditional approaches, are brought back for distribution and identified as ‘good teaching practise,’ another large group of teachers are left out of ‘good professional practise’ and, in self-defence, create attitudes of rejection towards technological resources. This possibly heightens their isolation as teachers (Giles, C. and Hargreaves, A., 2006) in relation to these new provisions in schools, accompanied by arguments that announce their technological helpfulness. In this case, a teacher would hardly be creative, or flexible, nor could they spread the pleasure that learning involves, (which is in fact, the main aim of an educator).

Gathering their own comments (Pérez Gómez et all, 2006) we may conclude that a teacher experiences:

a) A perception of methodological questioning, for instance, with processes of digitalization of the contents and activities involved in systems of the management of learning (Helvian, E-educativa) or, more simply, with the transition between the discourse of the teacher centred teaching-learning process, to another where the students are at the centre.

b) A perception of failure as a teacher if they do not use available resources, reflected in expressions like “I must use the computer, (…) they ask students to carry out searches, and in this way we use the computer for doing projects.” “I’m a loss when it comes to computers...”

c) A perception of the loss of instrumental knowledge previously acquired, with statements like “It’s just that I used a programme that...” “There aren’t any applications in my area...” “And what I had prepared, how can I retrieve it...?” “The thing is that I use Windows ...”

d) A perception of solitude/isolation in relation to the new resource. “(…) I’ve forgotten what I learned on the course they gave us, (…) it’s just that I have no access to a computer to practise and a person to help me out when I can’t remember (…) I don’t know where to start or what to do on my own”.


The alternative which we would like to consider is based on highlighting the influence of technologies when used for presenting teaching activities, emphasising their utility above any other element, therefore, avoiding an over valuation of the instrumental competence in new technologies of the teacher, as well as in methodological proposal concerning teaching in the classroom.

This raises an issue which has not entirely been solved in teacher training for professional development, namely diversity among teachers. As a heritage of cultural tendency towards homogeneity, formative strategies are often presented with identical content and format to groups of teachers who demonstrate diversity of nuances in the concretion of their interests, in their expectations and in their professional experience. This is so, even when the same group designs the plan of formation. However, teachers have professional knowledge which:

“Is partly individual; a product of successive re elaboration of teachers by their own experience, partially agreed upon; as a consequence of exchanges between educators and common processes of socialisation, and partially diversified; a product of different traditions and pedagogical positions, which implies different ways of interpreting reality in schools, teaching actions, and educative aspirations.” (Contreras, 1997, 57)

It is important to state that our professional interest consists of working towards a better quality of teaching in the majority of schools; this is where the worry lies in attending to diversity among teachers.
It is therefore, not our intention to concentrate on how to promote avant-garde teachers, nor elite experimental centres.

In our proposal, the thing that brings educational strength to a digital tool is the significance that it holds for those who make use of it, in a way that makes it gratifying.

- For some teachers it is important for the simple fact that it facilitates tasks which they have been developing for years;
- To those who are militants of equal opportunities, it is essential in today’s society as a way of treating knowledge to help against social discrimination;
- Others value the overall fact that digital tools offer more attractive results;
- Other teachers find the agility and speed that they are looking for, for students to carry out learning tasks, as well as for the teachers’ own teaching and administration;
- A few have begun to use digital tools within limits, for professional development based on autonomous, personal work, as well as when working in collaboration with others.

The meaning that each teacher gives to the new instrument, whatever their motive may be for using ICTs in teaching, is the value which this use holds for them (teacher, student or administrator) even over the valuation given to the contents or to the methodological sequence they habitually use.

The main thing that transcends the tools, from our point of view, is that the significance given to them will always be temporary and will be modified thanks to the comparisons made among colleagues. An exchange of opinions carried out face-to-face, either in debates or via digital means, directly encourages professional development.

Supported by the aforementioned ideas, what we call “practical cases” are born. They are representations, which students and teachers create using their own school activities, which is in itself, the key to progress. Practical cases require teachers who are willing to inform others of their teaching acts and what has happened during the process of the production of each one.

Practical cases need the strength and effort involved in elaborating an educative and formative resource which shows the work carried out, which is often entertaining due to its creativity and which always results self gratifying for the author, as their work is on show. It is not absolutely necessary for authors to estimate their teaching as inherently good, nor better than that of others. They simply find it interesting to let them be known, in the same way as it was interesting for them to develop the practical case.

We will take a look at some examples to help us understand what practical cases are, and at the benefits they provide in professional development and in teaching innovation. Revising the work of a secondary school in the area of technology (CaMOT, 2007), we found how ‘practical cases’ become an interesting support resource:

a) For professional self-recognition and for perfecting teaching practise, as a way of contributing towards the analysis of didactic proposals and in ongoing professional teaching development.

b) For encouraging students to improve their learning processes.

Each year, didactic materials used in the subject of Technology are being placed on the web, together with materials elaborated by students at different stages of development, as well as other propositions, such as videos. All of these are considered material for use in consecutive school years. In this way, when students are asked to make a pen holder, applying their knowledge in physics, mathematics and technical drawing – as shown in the case illustrated in the following photographs (1 picture) - they immediately know that it is a realistic proposition, as they are able to see the examples in the graphics left by students from the previous year, and furthermore, are urged to do well, bettering the ingenuity of their predecessors, achieving a continuity, as each school year goes by, in specific tasks. At the same time, the teaching staff is duly motivated and has sufficient information to improve their own processes involved in presenting, selecting material, in the organisation of the tasks and in group dynamics, and so on.

1 picture. Example of student work
As shown in the example, ‘practical cases’ using digital resources enhance the value of didactic strategies, both for the educators leading the activity and for the students. At the same time, this serves as a way of transmitting information to other teachers.

With another example, we can see how using ICTs work:

c) to widen the selection and organisation of contents, depending on the target audience, for which the experience is directed.

On this occasion, a sample from primary education (http://textolibre-ceip.blogspot.com) in which a teacher has elaborated the ‘practical case’ considering mothers and fathers of students at the Centre as a main target audience. Bearing this in mind, the teacher concentrates on the publication of work carried out by her children; and so the organisation of contents deals with the criterion for the classification of this work, which helps to guide the families in the learning process.

This practical case is a sample (2 picture) of how to foster professional development by paying attention to diversity in interests and educative knowledge. Owing to the specific work context, the teacher’s intention is to try to persuade her students’ families, as well as colleagues at school, with regards to the helpfulness of a new methodology for teaching reading and writing, which she has experienced for some years in another Centre of education. This presents a huge leap in educational concepts in the sense that it may prove difficult to be easily accepted in new contexts. Allowing this work to be seen on a blog, to which new information is added and answered for instance, is an excellent resource for her.

This provides a practical case which insists upon, as any other might, that the teacher studies the learning process in depth in order not only to help with the presentation and an adequate explanation, but also to respond to her own interests. This helps:

d) to build specific strategies which improve the coordination between school and home.

e) to make any novel curricular developments available to other teaching staff in the school, in such a way that it gives rise to discussion and debate.

Once again, it is not a matter of altering the methodology or approaches of the teachers themselves, but to make the most of technological resources and to make good use of them. As a consequence, their innovation and extension will naturally follow.

We understand that we have shown here how ‘practical cases’ go beyond “good teaching practice” in their training capacity, and how they may involve the educational community on a wider scale. To be precise, these are two different proposals, received and employed in different ways by educators.

‘Practical cases’ are a powerful tool for distribution among teachers because they do not generate rejection; they are not produced to show how to do things well, nor are they meant to be “good models,” but merely a realistic experience. They are not intended to encourage teachers to change their modus operandi in the classroom, nor to show themselves as outstanding; but solely as a form of maintaining the habit of compiling materials which they have prepared, along with students’ work, keeping them from one year to the next, as a teacher normally would, changing only the support or the way that they are stored.

‘Practical cases’ are instruments that build strength among teaching staff, as they feel that their daily activity is appreciated. A teachers’ daily work in the classroom is valued as they demonstrate the results of their students’ learning, enabling them to show what they are working on, almost at the same time as it
is being produced. Teaching is better considered by the public presentation of the strategies used and of the tasks being carried out.

If no other use is found by the educative community, the materials and documents become representative collections of didactic strategies, irrespective of the technological weight of the activity or of the methodological proposals employed. The authors give validity and meaning to the presentation of their work, organised beforehand, \textit{a priori}, without any particular criterion, resorting to free applications by publishing their work in servers at their own schools, as well as on free external sites.

When other teachers, student groups, committees or education administrators turn to a ‘practical case’ distant from their own reality, they have the opportunity to compare it with their own experience, to review teaching decisions or analyses of the situation shown; providing also the possibility of evaluating the work. All of this generates reflection on education in general, and particularly on didactic activity, inevitably professionalising teaching acts.

\textbf{The Work of Educational Management}

If the effort of all of the people who work for the school system – investigators, assessors, assistant services – were oriented towards compiling ‘practical cases’ without feeling the need to categorise them as ‘good practise,’ then the curricular inclusion of digital resources would become more feasible.

Educational management should be responsible for at least the following points:

1) the recognition of the didactic know-how of active teachers.
2) the recognition and the encouragement of the analytical capabilities of teachers.
3) the inevitability that modifications be produced in organisational structures within schools.

With respect to the first two points, it is a case of helping teachers to recognise what they do, to exhibit their work with the necessary analyses they may consider appropriate. We consider three main areas to work on in order to achieve this.

Firstly, establish the most suitable acts within the priorities guidelines of the Institutional Plans in training of education staff, so that all teachers who are part of educative teams in schools are impelled to present teaching practises developed by them over the previous school year. The necessity to compile information, to structural and to present it publicly, would in this sense, modify any resistance felt by state school teachers to publish their knowledge. This resistance is strongly immersed in their professional culture; owing to experiences that the collective has had in this field, which discourses of ‘good practises’ would help to consolidate.

Secondly, Public Contests in innovation, in training, for instance, might include, as a condition \textit{sine qua non}, that teaching staff foresee how to public divulge their processes of work and the results obtained, using digital resources to enable them to do this. If needs be, assistance teams and teacher management would facilitate any basic learning for this to be put into practise.

And thirdly, official investigation contests in Universities and Public Administration teams, as well as in national and international coordinated Projects of action, should encourage studies in which contextualised educative realities using digital platforms are made public. An example of this type can be found on the Educative Platform CaMOT: Case Methods of Technology for Practical use of Training Teachers (www.camot.net), which gathers specific cases, as a proposal to deal with the training of school education staff through the study of ‘Case Methods.’

“\textit{A methodology that uses cases selected and elaborated in the way that they are serve as an example for teaching and training; can later be used for the acquisition or the comprehension of curricular understanding, as well as a strategy for the professional development of teaching, their capacity of judgement, of comprehension and of critical reflection.}”

The CaMOT Platform, gathers eleven Cases of different formal and non-formal educative settings developed in six different countries, providing a good sample of how developed classrooms practises, explained from its particular context, and analysed from different educative point of view, are useful to motivate and improve professional work. The difference which contrasts our proposal with that of CaMOT, lies in the fact that, in their case, representation is not built by practising professionals, but by collaborating investigators. Whatever the case, it is another positive way of progressing different to that of ‘good teaching practise.’

As we previously mentioned, it is inevitable that modifications be made in organisational structures in schools. We refer to the following changes, some of which have already been forced upon most of the Centres progressing in the curricular integration of ICTs:
a) It is important for diversity in the management of educational space to exist, combining the computer corner, which provides a computer or set of computers to create a workspace parallel to that of the classroom; workgroups, in which one computer is provided for each group of students, and simultaneous work (workgroups) in the rest of the classroom, which contemplates the use of one computer between two students. Diversity in the organisation of space is of course connected to the availability of hardware.

b) Coordination should be shared to allow the collection of all the intrinsic diversity of Education staff and to involve the different sectors implied in the project to a greater degree. It would be necessary to appoint a team of coordinators; two teachers may, for instance, work less class contact hours, dedicating school time to this aim. Numerous difficulties can arise if coordinators are not supported in their work, and so this point is a decisive factor in the success of this post, due to the sheer overload of work.

c) To our understanding, it is also important to place the same emphasis on the organisation of school time, as is beginning to be taken into consideration in the organisation of space, together with the variability in size of student groups. Possibilities will open to facilitate coordinated didactic proposals by more than one teacher, inviting to the participation of others, if:
- class times were flexible, with weekly planning in which time could be organised around didactic necessities; classes could last either half, one, two or three hours - with breaks in between – depending on the activity in development.
- there were two or more teachers at a time in the same classroom space, for instance carrying out complementary didactic tasks or as observers.
- groups of students were formed of different sizes and for different lengths of time and of space, paying attention to teacher coordination and/or sharing responsibilities.
- the availability of teachers with a reduction in their timetables could be counted upon. They could be used as subsidiary teachers for their colleagues (during class time and outside school hours).
- an even more risky alternative might include semi-presential teaching on the lines already pioneered by LMS, an on-line management learning system.

Conclusions

Ongoing teacher training and formation is an unquestionable fact in the current day and one which is totally introduced into teaching culture and its practices. However, not so long before its emergence in the extensive way as is known nowadays; little more than a decade ago in the case of Spain. For this reason, developed practises have been carried along by technocratic tendencies, which cultivate exemplification and applicability as the core of developmental proposals. Formative practical cases, which may be blamed for two contradictory features, with the intention of strengthening professional development based on autonomy and on the teacher’s intellectual criterion. Many of these practises are far from the communicative realities in which the knowledge society is working.

The alternative which implies ‘practical cases’ is present on another level, with an approach which links professional development with the power of teachers, the recognition of their professional ability with curricular and socio-educative innovation, within a system of mobile and cooperative structures, and with an untouchable basis with regards to the internal diversity of the teaching sector.

References

PRAKTISCHE FÄLLE: STRATEGIEN FÜR DIE BERUFLICHE ENTWICKLUNG IN DER LEHRE
ÜBER DIE VERWENDUNG VON DIGITALEN RESSOURCEN

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Summary

Im Bereich der Umsetzung der Informations- und Kommunikationstechnologien in den Schulen gibt es eine Tendenz, die positiven Aspekte der Durchführung innovativer Schulpolitik in Zentren der Bildung, die Förderung der Anerkennung der bestehenden Schule Praktiken und das Wissen der Lehrkräfte zeigen.

Dies beinhaltet Gruppen von Lehrern, die freiwillig ihre eigene Unterrichtspraxis wurden durch sorgfältige Planung, den verwendeten Materialien und der Präsentation der Stufen in einer bestimmten Schule Projektbeteiligten verbessert.

Im folgenden Papier diskutieren wir den Vorschlag des "guten Unterrichtspraxis" verwandeln sie in realistischer Betrachtung, nämlich "praktische Fälle". Wir überlegen, dass bei der Präsentation Lehrmittel für die Förderung und Verbreitung von Innovationen, eine zu nutzen bewährte Ansätze in der Lehre, die Aufmerksamkeit auf die kulturellen Besonderheiten der Berufsgruppen in Frage stellen wird fortgesetzt.

Das Potenzial von praktischen Fällen für Förderung des Wandels in der beruflichen Entwicklung hängt ihre Glaubwürdigkeit unter Gleichaltrigen und der Zinsen durch das Studium der Vorschlag der Offenlegung von Projekten, die ähnliche Situationen reflektieren denen wie bereits gültig Lehrerfahrung anerkannt erwacht.