Community-based learning in the networked society

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Abstract: The networked society has intensified the dynamics of interaction among professionals in the last decade, and the overall trends show that much more still has to come. The key question of this special issue is what qualitative changes we are facing in the coming years, when the learning between practitioners in education reaches a level of what we dreamt of in the 1970s when school-based curricula, team teaching and altruistic ideologies took off. As an extrapolation of the ‘Communities of Practice’, this introductory article will highlight intra- and interpersonal professional learning, and suggestions for its new orchestration by stakeholders rather than by institutional leaders. As the main theme, the WWW-based community will recur throughout the various application fields. The final conclusion will focus on the networked society and its sociological threats and opportunities; teachers’ continuous learning should be closely related to the lifestyle of the youth culture, and learning should be practised amongst peer teachers from time to time.

Keywords: networked society; learning community; teacher education; lifelong learning; youth culture.


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1 Introduction

The evolution in media is a constant catalyst for the further evolution of ‘communication’, and even for human aspirations beyond communication. Its most elementary format was articulated in the late 1970s when communication effectiveness was seen as a trade-off between recall, silence and noise. In its more recent context, where information access is no longer the critical issue, communication shifts its focus to the quality of human mental, moral and affective synergy. ‘Creative networks’ (CN) are the beehives that allow youngsters to rebalance idiosyncratic passions against stylistic epigones and the flow of technological fascination (Carmichael, 2002). In the field of education, learning and schooling and also the awareness of the information society and advanced communication infrastructures have already left their fingerprints; learning in information-rich contexts, using learning tools and allowing learners to raise their own communities have affected the way teachers weave formal curricula in the lifestyle of youth culture (Fry et al., 2006). The fact that teachers threaten to become ‘digital immigrants’ has not prevented them from adopting the new learning culture that defended the learning of ‘soft skills’ like leadership, communication skills, mutual responsibility, teamwork, imagination and global awareness (Kane et al., 2006). It is this status in educational transformation that needs rethinking and a prudent forecast in order to channel our efforts more effectively.

2 Learning: societal context and infrastructure

2.1 Towards learning the unknown

Seen from a viewpoint of societal evolution, our ‘learning ideology’ nowadays still has a strong affinity with ‘competing expertise’ and its solvability for struggling economies, rather than ideological restructuring. Waking up after the postindustrial labour ethos forced us to accept creativity and its wider bandwidth for intellectual jobs. However, the learning paradigms in real education still struggle with the essential of choosing between learning as transfer versus as developmental process. If we accept that learning is not a goal in itself, it is immediately evident that these extremes in conceptualising learning the ‘old versus the new’ is not a real dichotomy. Bringing back the educational goals to societal values, it is clear that the entire spectrum between transfer and development is valid and necessary in order to cope with unforeseen situations in the near future. And most importantly, both the teacher and the student are learning actors; reducing one role to providing versus receiving is detrimental to a learning culture where goals, contents and methods are in constant movement all the time. In short, learning implies teaching, and vice versa. The real learning has to do with the unknown, regardless if some of its stakeholders have a solution or not.

2.2 Modernity, the intra- and the interpersonal

Modernity as the epitome for innovation and the ambassador for functional efficiency played a crucial role in the postindustrial, postcolonial society, where individual humanitarian values started to supplant nationalism and the traditional gender-race-class hegemony. Still, we see a resonance of modernity as a value in ‘service orientation’
rather than ‘existential’ reorientation towards sustainability and revaluing humanitarian priorities. As a perspective for educational evolution in the coming decades, we may no longer hope that the information society offers fruitful metaphors, as ‘information’ has lost its connotation to ‘production factor’. Similar to this is the catalytic role of ‘communication’; its promise to brings people together and reopen altruistic ideologies is lost to its functional role in managerial concerns. ‘Information value’ is an emblem submitted to ‘information economy’, and thus prohibits the more fundamental discussion on how new media and infrastructure may finally instigate a better climate for youngsters’ inauguration in society as such.

2.3 Media for learning

Summarising the last 20 years of Information and Communication Technology (ICT) in education, the 1980s allowed instructionalists to control the learning process even more by using advanced software for student modelling and sophisticated feedback mechanisms than in the two decades preceding it. The 1990s showed a drastic shift from instructivism to constructivism; the prior attention to external control gave space to the learner’s internal control and regulation. Since 2004, a fast growth in paradigm in youth culture and web-based communities has taken place. Learning is no longer seen in isolation; it is the (multi-)cultural context that provides stimuli in terms of societal awareness, identity and lifestyle (Kinelev et al., 2004). The media are now the landscape of cross-media services where social bookmarking and buddy lists are crucial for belonging to one peer group or another. The hegemony of formal education and institutional training has declined in favour of learning at an existential level; its goal is no longer an instrument for adapting to the societal need; it is a derivative of one’s ambition to join a cultural clan. Besides its nomadic (mobile) nature, we may signal tribal effects, though its life cycle may be volatile and extremely short as well.

2.4 Learning communities for both teachers and students

Having noticed that the momentum of learning has returned to its origin (existential, missionary and driven by curiosity), the question is how teacher roles evolve on top of that. The leading theme throughout this special issue is that learning needs a learning climate in order to be achieved well. As teachers instantiate learning contracts and trigger the learning culture among students, it seems a valid choice to start analysing how they establish learning for themselves. One dominant trend is to promote teachers’ research attitude. Another is to focus on the first phase in teachers’ professional development. We may say that the first three years are decisive for one’s teaching attitude and habits. The delicate stage is when young teachers have built up their repertoire and tend to rely on fixed clusters of behaviour. Just before that moment is the best time for a coach or a mentor to intervene in order to become aware of one’s initial ideal and tackle the question of how to get there. The full classroom didactic reflexes are needed; however, for continuously optimising the didactic repertoire and staying sensitive regarding the learners’ youth culture, it is needed that the young teachers provide sufficient efforts to keep in touch with the youth culture, or join teacher communities that explicitly target the revitalisation of the learning between teachers.
2.5 Research into WWW-based teacher communities

Education in the broader sense of societal orientation for the youth generation is often overlooked as an inspiration source for teachers. Typically they contrast youth culture and its styles with school learning (Tornaghi et al., 2005). It is also typical for teachers between 25 and 30 years to orient themselves towards settling their career, caring for their own family life and refraining from going out and joining popular events (Tornaghi et al., 2005).

Teacher communities may play a decisive role to keep young teachers open-minded for the evolution in lifestyle and youth culture. The site http://www.mirandanet.ac.uk (to be described further in this special issue by Preston and Cuthell) and ‘Dashboard’ are excellent examples. WWW-based learning communities have a high potential for supporting professionals as they may articulate, share and explicate intuitive expertise (De Vries and Koomers, 2004). Virtuality goes very well together with topics that demand a high existential and ideological degree, as its members do not necessarily belong to the same organisation. The open climate is an important prerequisite for solving problems. Feiman-Nemser (2001) focused on experienced teachers who mentor the starting teachers. She describes the mechanism of ‘induction’, the start of a long-term process of socialisation in the tension between collectivistic versus individualistic. The report mentions that teachers mainly struggle in order to catch up with the shifting mentality of the young generation, rather than with the content and its didactic. Symptoms like the teacher’s efforts to keep restructuring why a learner makes a certain mistake indicated a vivid and lifelong learning teacher (Kwakman, 2003).

In summary, continuous learning by teachers is not a self-evident phenomenon. Too much time and effort are spent in accommodating the organisational changes and the pressure to make immature educational paradigms working. Too much attention has been given to one-sided approaches like the autonomous student. Teacher organisations might reach a higher effect if its membership becomes valued and rewarded in terms of salary and status.

2.6 Emergent research questions

These are the emergent research questions:

• Which type of WWW-based community is most adequate in order to support teachers in the delicate first five years of their career and promote mutual support and a critical attitude in order to learn in a professional way?
• To what extent is self-regulation essential in this process, and what effects can typically be discerned?
• Which scenarios for external control are available for guiding these teacher communities?

As a huge common interest can be found among researchers both in educational and sociological strands, it seems useful to deliver a panoramic view on the various candidate research templates that are promising for tackling the three questions above.
3 Research approaches

Research is an intellectual investigation. It is often described as an active, diligent and systematic process of inquiry aimed at discovering, interpreting and revising facts. This produces knowledge of events, behaviours, theories and laws, and makes practical applications possible. A close and careful study could be done on education. The most important aspect in this study is how teachers can become better teachers.

3.1 Key constructs

According to Macleod and Golby (2003) research takes us through narratives about teaching and learning and then invites us to consider these examples through situated practice:

- overt instruction
- critical framing
- transformed practice

It then draws us in to consider the question through a variety of perspectives, such as the impact of centralised curricula and assessment, on bringing about effective teachers.

Macleod and Golby’s answer refers to learning and the recognition that “by giving … attention to the nature of learning, teachers can improve their practice and thereby the quality of learners’ experience”. Critically, however, they demonstrate that this is, in itself, situated: teacher development can only take place within the present social and political contexts. Macleod and Golby’s contention is that the ‘current orthodoxies’ present barriers to effective teacher development; they urge all involved in education to ‘seek the freed imagination’, and suggest that learning theory and paedagogy may be a good beginning.

3.2 Aim of education

As knowledge in itself becomes a perishable item, the ability of learners to think independently, exercise appropriate judgement and scepticism, and collaborate with others to make sense of their changing environment is the only reasonable aim of education (Haddad and Draxler, 2002, p.14). The increasing importance of ICT in the global information society creates new challenges and provides solutions to old educational problems. The importance of ICTs for educational provision is discussed, and the issues, achievements and kinds of projects being implemented in primary and secondary education, adult or basic education, and teacher training are also reviewed.

The American Association for Higher Education reports that since the Seven Principles of Good Practice were created in 1987 (Chickering and Stephen, 1996), new communication and information technologies have become major resources for teaching and learning in education. If the power of the new technologies is to be fully realised, they should be employed in ways that are consistent with the seven principles. Such technologies are tools with multiple capabilities; it is misleading to make assertions like ‘microcomputers will empower students’ because that is only one way in which computers might be used.
3.3 The seven principles

Technology becomes a lever when implementing the seven principles. It:
1. encourages contact between students and faculty
2. develops reciprocity and cooperation among students
3. uses active learning techniques
4. gives prompt feedback
5. emphasises time on task
6. communicates high expectations
7. respects diverse talents and ways of learning.

Chickering and Stephen (1996) underline that technology is not enough. The seven principles cannot be implemented by technophiles alone, or even by faculty alone. Students need to become familiar with the seven principles and be more assertive with respect to their own learning. When confronted with teaching strategies and course requirements that use technologies in ways contrary to the principles, students should, if possible, move to alternatives that serve them better. If teaching simply focuses on memorising and regurgitating prepackaged information, whether delivered by a faculty lecture or computer, students should reach for a different course, search out additional resources or complementary experiences, establish their own study groups, or go to the professor for more substantial activities and feedback.

4 Targeted future effects and methodology

According to Baker (2003), educational research should both inform policy and practice and be forward-looking, anticipating the future questions of policymakers, teachers and the community. The theories, practices and current priorities of policymakers and practitioners are central to educational research. In recent years, policymakers have placed greater emphasis on seeking an evidence base for their work as governments have sought to justify their spending with ‘proof’ of positive outcomes for their investment. A key area of interest for policymakers in education has been to seek an evidence-based understanding about the characteristics of quality teaching that promotes learning for all students. The research informing the development of knowledge about teaching and learning draws upon the expertise of both researchers and practitioners, often with practitioners working in collaboration with researchers.

As teachers become crucial actors in the innovation of their own teaching, it is essential that they are skilled in observing and grading the quality of the students’ learning processes. Since the recent theories on learning psychology advocate the inclusion of the ‘process’ rather than the ‘outcome’ of learning, it seems a good choice to train the teachers to become sensitive to the more subtle symptoms of active, authentic and creative learning. This skill should be mastered at the observation of both individual and cooperative learning.
Educational research is not just an abstract science. It is a useful tool for practical problem solving. It enables educators to identify outcomes, make predictions, and establish cause-and-effect relationships. Factors such as the intuition of sensitive teachers and instructional designers, philosophical insights, and legal restrictions all play legitimate roles in decision making. However, simply put, decisions based on accurate conclusions and generalisations are likely to be better than those based on faulty generalisations.

Vockell (2006) distinguished between four levels of research:

**Level 1** Data collection – What is happening? (What is the problem? Is this what I want to happen? Is this what should happen?)

**Level 2** Internal validity – What is causing this to happen? (Am I causing it? Can I change it?)

**Level 3** External validity – Will the same thing happen under different circumstances? (How far can the results be generalised?)

**Level 4** Theoretical research – Is there some underlying principle at work?

Research can be conceived as occurring at these four levels. They are hierarchical in the sense that each higher level presupposes the knowledge of lower levels and employs lower-level techniques.

### 4.1 Level 1 research

Level 1, data collection, is an authentic mode of research. It is something that teachers should do every day. It consists of finding good ways to assess and describe what is happening. All subsequent levels of research depend on a solid foundation at Level 1. There are, therefore, two good reasons for discussing Level 1 research at the beginning of this textbook. First, it is valuable for finding out what happens in an educational setting, even when we have no intention of doing any higher-level research. Second, it gives us a firm basis for performing or interpreting the more sophisticated levels of cause-and-effect research.

In terms of Level 1 research, our teacher has discovered what he wanted to find out: he knows that he has not been wasting his time and that of his students. But has he shown that his new methods have caused the improvement? This is the question of Level 2 research.

### 4.2 Level 2 research

All decision making in education is based on cause-and-effect assumptions. A teacher makes Decision A instead of Decision B because there is reason to believe that Decision A will lead to more productive student learning. In many cases these decisions are based on custom, authority, or some factor other than the systematic examination of data that constitute Level 2 research. Once a possible causal relationship has been established at Level 2, there is still room for increased sophistication. If we have demonstrated that something may have produced an effect in one isolated situation, we still do not know whether it would work somewhere else. At Level 3 (external validation), we examine the
generalisability of research findings. It should be obvious that Level 2 is a prerequisite for Level 3 research, because if we have demonstrated no effect, then we have nothing to generalise.

4.3 Level 3 research

Level 3 research is not performed by classroom teachers and instructional designers as often as Level 1 or 2 research. Such educators are most frequently concerned about solving pressing, unique problems in their own classrooms rather than generalising about what might happen in someone else’s classroom. Level 3 research becomes important when we want to share our results with someone else, or adapt someone else’s results to our own situation. If we are going to publish the results of our research, for example, and someone else plans to make use of these results, then we need to do Level 3 research. Although educators do not often do Level 3 research, it is still important for them to understand it. A good way to obtain and evaluate new ideas is to read professional journals and talk to other educators about what they have been doing.

4.4 Level 4 research

Finally, there is Level 4, theoretical research. This is the kind of research that social scientists do when they discover, for example, that a new behaviour is learned most rapidly if it is reinforced continuously, but that a behaviour is maintained longer in the face of extinction if it has been reinforced on an intermittent schedule. At this level, the researcher not only demonstrates that there are findings that can be generalised to new settings, but also gives theoretical reasons and explanations about why this happens. In turn, this theoretical explanation suggests other situations in which similar results would be likely to occur.

5 Research types for web-based learning communities

The traditional sequence from fundamental – through applied – to best-practice research has shown a weak framework for mapping the various complementary approaches. In order to anticipate the envisaged mutual learning in web-based teacher communities, it is vital that we can distinguish the various cycles of evidence articulation and aggregation from intuition via observations and to generalised theories. Slettenhaar and De Vries (2006) have mentioned three phases in constructivistic developmental research:

1. The first is the preliminary phase, with a front-end analysis which leads to a prototype. The prototype is evaluated with formative evaluation.

2. The next phase is the formative phase, in which the pilot is improved by formative evaluation.

3. The last phase is the retrospective phase, in which the final version of the pilot is reformulated into a design by summative evaluation.

The three criteria for the design are quality, coherence and practicality. One might state that whether the research undertaken more or less satisfies the criteria of ‘practicality’ determines whether that research is more practical or more fundamental by nature.
The Short Term Memory (STM)-model (see Figure 1) includes four dynamic blocks: three research blocks (the studies) and a scientific discourse block, and seven static blocks which contain a question, design, plan, results or theory.

**Figure 1** DeResA: a practical design research approach

![Diagram of DeResA model](image)

*Source: Slettenhaar and De Vries (2006)*

The model of Slettenhaar and De Vries for intra- and interteacher theorisation and learning is highly attractive, as it allows a fertile crossover between the domain of formalised theories and the ‘conjectured’ local or even ‘personal’ theories by the individual teacher. The links between the two are the scientific discourse and the ‘proven’ design. This last one derives its face validity from the fact that a certain conceptual implementation either proves to work out well or proves to fail. In this way, the conjectured theories are not only a source for hypothesising, but a source for practice-based evidence as well. Below is the attempt to envisage this recent DeResA in the wider landscape of traditional evaluation research methods.

## 6 Evaluation research

Evaluation research refers to the application of the scientific method or other forms of disciplined inquiry to the process of making decisions about the quality of educational processes, products, or outcomes. Educational evaluations usually focus on needs analyses, cost-benefit analyses, and the formative or summative evaluation (defined below) of educational products and programmes. An educational evaluation consists of more than just the collection of research data. It uses the information obtained from the research process as one of several tools to evaluate a product or activity. Other components of the evaluation process include analysing the goals of a programme or the needs of a system, assessing the resources available for the programme and the contexts of the programme, determining the criteria or standards according to which decisions will be made, and interpreting the results after data have been collected.
The educational evaluation focuses heavily on value judgements that will lead to effective decisions; it uses research methods to collect data that can help lead to valid judgements. Whereas educational research in general focuses on testing hypotheses and building theories, educational evaluation usually has a noticeably practical – and more limited – purpose: to make decisions about a particular educational product or activity. In the education literature, there are two types of evaluation:

1. **Formative evaluation** occurs during the planning and operation of a product or programme. Its purpose is to provide information that may result in the improvement of the product or programme. For example, by observing students during a cooperative learning activity, a teacher may obtain information that would suggest modifying the instructions given to the students.

2. **Summative evaluation** occurs after a product has been developed or a programme has been completed. Its purpose is to provide evidence regarding the quality of a product or programme. For example, a teacher may examine test scores at the end of a cooperative learning unit and determine that the unit is worth repeating next year. In either case, the role of research is to provide valid data and effective comparisons to enable the teacher to make wise decisions.

### 6.1 Action research

Action research refers to the practical application of the scientific method or other forms of disciplined inquiry to the process of dealing with everyday problems. It is particularly focused on teachers and other educators who aim to make their particular educational activities more productive. It is more concerned with specific classes and programmes, and less concerned with generalised conclusions about other classes and programmes. This paper considers action research to be a valid enterprise, and fully endorses the concept of teachers and students becoming involved in such research.

### 7 Activities and categories of educational research

Educational research concerns the levels of goals, analysis, design, media, implementation, testing, evaluation and policies. Traditionally, these fields are covered by the next disciplines in educational technology: paedagogy (goals), curriculum (analysis, macrodesign and macro-implementation), instruction (microdesign, micro-implementation), instrumentation (microdesign, media and micro-implementation), statistics and methodology (testing and evaluation) and educational organisation and management (goals and policies). Educational research and the disciplines covering it are defined by the problem-based learning. Educational research belongs to the methodology of the behavioural sciences. It needs the full scale from phenomenological, empirical, analytical to action research. The most robust research paradigm is the search for homothetic regularities like those common in science and basic psychology. However, the field and the phenomenon of learning, teaching and paedagogy is wide and diverse: many variables play simultaneous roles. Also, the relevance of unique phenomena and persons enforce the research to be ‘involved’, rather than distinct and ‘objective’. This is particularly the case when teachers themselves are keen on optimising their own practice. An important attitude is the eagerness to find hardcore underlying factors that decide on
learning effects. But the urgency of the ‘here’ and ‘now’ legitimates teachers to ‘zoom in’ on the critical factors that will help make ‘these students’ succeed ‘now’. For this sake, the ‘idiosyncratic’ and the ‘action research’ under the ‘tradition of a phenomenological’ approach needs to be studied and brought into practice.

7.1 Four steps in the scientific process

Step 1 Identification of a problem. In this step, the problem is often vague and loosely defined.

Step 2 Formation of a hypothesis. A hypothesis is nothing more than a conjectural statement that provides a tentative expression of what the scientist or thinker believes will be a resolution of the problem. It is based on the scientist’s careful observations and insights into the problem, which are based on such processes as personally experiencing situations, reading the literature and thinking.

Step 3 Reasoning and deduction. The scientist analyses the hypothesis and determines what observable events will follow as consequences if the hypothesis is correct. Usually, there are many observable phenomena that can be deduced from a single hypothesis.

Step 4 Verification, modification or rejection of the hypothesis. The scientist observes the results of empirically collected data to see whether the predicted consequences actually do follow.

Steps 3 and 4 are performed repeatedly. If a prediction based on the hypothesis formulated in Step 2 is supported, this is taken as an indication that the hypothesis is a valid answer to the problem identified in Step 1. If a prediction based on the hypothesis is not confirmed by the results of the experiment, this is taken as an indication that the prediction was based on an unsound deduction, the hypothesis needs to be modified, or the hypothesis needs to be rejected completely. Each time the scientist completes Step 4, it is necessary to return to one of the earlier steps. The exact reaction will depend on what the outcome was in Step 4. If the results supported the hypothesis by confirming the prediction, then the researcher will probably go to Step 3 and generate another prediction. If the results were contrary to the prediction, then the researcher might return to Step 2 and modify the hypothesis before returning to Steps 3 and 4. If the results were so contradictory as to refute the entire hypothesis, then the scientist might return to Step 1, try to clarify the problem further, and eventually state a new hypothesis. By appropriately repeating the various steps in this process, the scientist is able to develop a useful theory that will serve as a solution to the problem.

8 The role of ICT in learning among teachers

ICTs are the means to provide an access to and engage in the continuous learning necessary for successful participation in the societal development of all social groups of a population. ICTs have become a critical tool for professional training; the sooner learners know how to use ICTs, the easier they can find their way to capture the newest methods
of data acquisition and transformation to knowledge. Scientific and technical progress and the global spread of technologies developed in the most advanced countries of the world constitute one of the main arguments in favour of the leading role of education in the 21st century. The level of technological development is indicative nowadays not only of the economic power and living standards of a particular country, but also of the place and role of this country in the global community, and the scope and prospects of its economic and political integration with the rest of the world.

The era of new ICTs does not eliminate the most difficult problems that the world of education faces now and that have to be solved irrespective of whether the new technologies are adopted or rejected. Nevertheless, training and development, social and professional requirements, globalisation of communication, the economy, and political projects of building a new society rely heavily on the introduction of ICTs into education. The alternative is to lag behind these developments chronically and, in effect, fail to meet the challenges of the 21st century.

The main features in the educational system of the information society are production of knowledge, geographical and temporal independence on knowledge acquisition, and pedagogic and structural innovation in the teaching-learning process. To provide this, educational policy must ensure:

- up-to-date pedagogical competence in the information society
- the integration of new pedagogic opportunities
- equal and flexible access to education
- effective and flexible education structure and organisation.

Attempts to improve education through the use of ICTs suffer from the absence of sound educational paradigms that could really support fundamental renewal. This renewal can be contributed by pointing out that beyond the delivery of information, that is, of ‘content’, we systematically need to take into account interaction and activity, the learning ‘contexts’, the completely renewed social and cultural environments that education is calling for and ICTs are now capable of delivering. It appears that most national plans to introduce ICTs in the educational system should:

- take into consideration specific national economic, social and cultural conditions
- borrow from similar plans and experiences of other countries (particularly those with a comparable economic and social framework)
- ensure matching of the desired scale of ICT introduction in education with available technical, financial and human resources
- develop comprehensive action plans for various levels and agents within the educational system
- take into account the consequences of ICT application and use as experienced by various categories of students, educators, educational systems and society as a whole.

One cannot make sensible policy choices without assessing the current situation, specifying the goals to be reached, projecting the means to attain them, implementing the strategies and evaluating the results.
The concern of policymakers, thus, is twofold: to reach a better understanding of the validity of education in its own specific dimensions, and to help in defining appropriate strategies for change. In contrast to the institutional learning networks, it is the unforeseen interaction and development of mutual learning needs that determine how a learning community develops. The pragmatic learning need is crucial here, not the need for a higher learning certificate. Looking from the last few years at the regular secondary schooling certification, it is highly probable that web communication focuses on examination items. However, the survival of a synchronous learning community has a much higher level of impact; its members experience a learning need and will undertake discussions that are much more fundamental compared to traditional systems based on arbitrary cornerstones like the entrance and final examinations. Three dimensions are brought forward as organising for the upcoming ‘learning communities’ and so-called ‘learning networks’:

1. Learning scenarios will be embedded in communities of practice, and less orchestrated as top-down delivery processes, like in traditional schooling and corporate training. Mobile and online learning are likely to benefit from new flexible paradigms that bring a learner back into the centre. The key function of mobile learning is to find the right learning partners.

2. Student learning will be continuously shifting towards project-based learning and problem-based learning, in which curricula and teachers mostly facilitate the process. Learning by gaming (simulations and metamodelling) is one of the methods to make students curious about underlying processes and meaning. As it comes to cultural sciences like geography, history and art, it is the existential motive rather than the certificate criterion that will soon determine how and what learners intend to learn.

3. Participation in virtual realities will provide a growing opportunity to make learners alert and better prepared for complex jobs. Mobile learning in light of these evolutions will dramatically change institutional learning practices.

Lifelong learning has become a key subject in dialogue among social partners, and between them and governments. Partnerships of governments, the social partners, enterprises, and a wide range of institutions and representatives of civil society increase the effectiveness and resource base, and improve the equity outcomes of learning and training programmes. Education has experienced a gradual shift from teacher-centred education and training towards learning by the individual. Rapid growth in information available and individuals’ need to use it selectively for knowledge creation have accelerated this shift.

9 Conclusion

So far, the polarity between teachers and researchers has not proved to be a very fruitful one. Much more promising is the attempt to make teachers keen on the dimensions of ‘quality’. This demands both practical solutions and methods to register student learning behaviour. For this sake, researchers can be involved to advocate lucid observation methods. The cooperation between teachers and researchers is a vital one, as they share complementary implementation and analytical skills.
Teacher training is built upon teacher-training colleges, but even more on the many hours of experience in the real school situation. A natural incentive to improve one’s teaching skills is the comfort and pleasure of seeing students learning in a concentrated and effective way. At the same time, however, teachers develop a narrow focus on what has to be understood as ‘effective learning’, and hence, the criterion of ‘effective teaching’. The process of confronting experienced teachers with research methodologies is a diverse and rather complicated one.

An important aspect is to widen the teacher’s awareness of what should be taken into account as ‘learning’. Bloom’s (1984) categories in his ‘taxonomy’ have been an eye-opener for traditional school practices the last three decades. So far, the transfer of knowledge from the expert to the student was seen as the ultimate goal. Bloom articulates knowledge, comprehension, application, analysis, synthesis and evaluation as his categories. Learning in Bloom’s view is a process that builds upon knowledge, but it needs a wide variety of situations, problem-solving tasks and metacognitive exercises before it reaches the level of creative thinking in the learner. As extrapolation of Bloom’s attention for the higher levels of learning, we now face the attention for the existential factors in learners’ thinking and awareness; it is a fact that the fast assimilation of multicultural precautions in society demands from the youth an essentially new position towards given curricula and its societal conventions. Rather than accepting the vast period of K12 and beyond up to 16–18 years of obligatory school life, intending to absorb what is accepted by adults at that time, it is their claim that school should provide the climate for developing and redefining the essence of society and subsequent modes of lifestyle.

In this crux of innovative schools, the new teacher roles should be understood. It is inevitable that the learning among teachers will become more dominant; individual role transformations are widely insufficient. The only way to let teachers accommodate this Copernican turn in youth culture is to let teachers spar and sharpen views amongst each other. Yes: it is the learning amongst teachers that is the necessary step towards innovating education. In other words, it is now the teacher who faces the need to learn and relearn at the higher levels of Bloom’s taxonomy. There is no fixed curriculum for them to follow, except the subtle signs from youth cultures that say: Do not treat us as docile receptive learners; accept us as the main solution for building the new society, where multiculturality is the problem and solution at the same time.

References


**Note**

1 http://www.teacherswithoutborders.org