

MOBILE PHONES MOTIVATE

INTRODUCTION

This article is based on experiences from a recent international project, where mobile phones have been incorporated into teaching and in-company training of young people in vocational education. In Denmark, training mainly takes place as a dual system, where students alternate between school and in-company training.

Access to vocational training is practically free, which contributes to the government's target of 95% of a youth cohort completing a qualifying educational programme. Retention is therefore a central task for both teachers and trainers.

They increasingly need to be able to handle challenges such as the student's concentration difficulties, discouragement, destructive behaviour in the classroom, lack of self-esteem, performance anxiety or lack of awareness of specific skills. In this light, we see special pedagogy as a student's opportunities to exploit his/her potential optimally. There is a need to think innovatively and find new ways of motivating students - knowing that these challenges can not be resolved with one universal remedy. Modern mobile phones can in this context serve as a motivational tool. Use of mobile phones has proven to offer new educational opportunities, and the question is whether similar methodologies can be used in *special* pedagogy³. The focus is on supporting the learner in realizing his/her potential optimally, with a positive effect on learning and the desire to learn. New teaching methods and ways of organizing teaching have changed the meanings of "strong" and "weak" students.

In the abovementioned project, teachers often found themselves lagging behind the students in regards to use of modern mobile phone of the 'smartphone' type. Some of the students had previously had difficulties in adjusting to school and the learning situation, but with mobile phone in their hands, they contributed to their own learning in new ways. Through the advanced use of their mobile phone, they discovered and demonstrated skills not previously acknowledged by the school system.

Students, who haven't drawn (positive) attention earlier, can in this way contribute to their own learning, so that diagnoses and functional deficits no longer are the only decisive factor determining, which learning opportunities are offered to the student.

New technologies can bring added value to education, that is to say, if the supervisor / teacher can create the right framework and facilitate their application. Despite a wide range of possibilities, it should be emphasized that cell phones in themselves do not create miracles or free the teacher from providing personal support and guidance as far as structure, objectives and quality criteria. A personal willingness to learn the technical details is also necessary, at least to some extent.

For the school it is essential to ensure the appropriate technical and IT-pedagogical framework. If this succeeds, the teaching can be enhanced through variation in teaching styles and incorporating youth culture into teaching, and the students' motivation for learning can unfold in flow.

PROJECT 'DISTANCE LEARNING FOR APPRENTICES'

In the project, smartphones are implemented in vocational education at vocational schools, and during training periods in companies. Educators in Spain, Germany, Denmark, Portugal and Turkey have launched the use of modern mobile phone technologies. Students use the media functions on their phones for portfolio work, do independent information search through the use of online databases and test new features such as production of barcodes and mini-format presentations. See more on www.learning-at-distance.eu. The project is supported by the EU's Leonardo da-Vinci program.

The student Hakan comes from a Turkish family, although he was born in Germany. The 18-year-old boy wants to be trained in retail, but has had a hard time finding a training placement. Hakan is therefore in a training program specifically for students without internships. Here he gets almost only negative attention, as he seems unconcentrated, demonstrating a lack of interest in teaching and disrupting other students. He seems mostly interested in his mobile phone, which he also uses during class time without permission. Hakan is given the opportunity to participate in a training programme in a shoe store, whose management is interested in the project with mobile phones. Hakan is given a so-called smartphone, which is in the elite of mobile phones that young people dream of. Hakan is told to experiment with the new tool, first in the training placement and then in school.

In the company Hakan already seems changed. He uses his smartphone to record short audio notes for his logbook, to search for information online for customers and he produces a mini-presentation on the mobile phone about shoe care products. Later, in school, Hakan continues to use the mobile phone; using its calculator functions, downloading formulas from the Internet and finding information about the Second World War on the online encyclopedia Wikipedia. He also asks the teacher for help in finding more advanced smartphone features.

All in all, Hakan achieves surprising professional and academic results and makes a good impression through his positive behaviour and helpfulness, even to the other students. The previously observed behaviour has been completely transformed in a constructive and positive way. Hakan has subsequently been able to enter into an apprentice agreement with the shoe company.

The description is based on Teacher Uwe Grunwald's observations Valckenburgschule, Ulm / Germany, Spring 2009.

All of the teachers from the five countries report a noteworthy increase in motivation of their students. Students, who previously disturbed the class, work in the project with commitment and enthusiasm and have the extra energy to be resource persons for other students.

The teachers express that the young people are enthusiastic about using tools from their own world. The students are impressed by the ultra-modern equipment they receive and that teachers and companies use the same tools. It seems that young people do not see school tasks done with mobile phones as work or tasks; instead they explore spontaneously and with curiosity the various features of the phones and their use in training contexts - even during breaks or leisure time.

Some students have even achieved professional results not previously seen in their respective training programmes. For example, Turkish students have, on their own, designed barcodes that link to professionally relevant websites, when photographed with mobile phones. In Denmark, a closed group on a social online network is being tried out at this time, via the mobile platform, Facebook. Here, students with training placements in different companies can maintain contact with each other and the teacher.

Teachers have direct insight into learning outcomes, as students upload images, sound and movie clips, links or text fragments to virtual platforms, during in-company training or work in groups.

Teachers also send small quick mobile tests using multiple-choice questions. A Danish teacher: "*The students like them, and we can drop being discrete. The students have no inhibitions towards showing their results to each other.*"

CONTACT BETWEEN TEACHERS AND STUDENTS

Both teachers and students have generally been pleasantly surprised about the potential for a more informal and less rigid way of communicating. Students experience a feeling of security and closeness, while the teachers see it as "being allowed into the student's world."

The project participants emphasize the optimized interface between students and teachers, who can now reach each other with more flexibility than usual. SMS, MMS, emails or even phone calls are all used, especially when there are acute practical problems to be solved. The teachers tried initially to set up rules for contact, but these have not proved to be necessary, as the additional work load they feared has not yet occurred: *"We can now respond immediately to questions from students. Normally, they would probably have given up or spent several days on a small problem."*

STUDENTS GROW

Hakan, who seized the opportunity to grow in an unconventional way, when it was offered to him, is no exception. Although the project does not directly target young people with concentration difficulties, destructive behavior or self-esteem issues, it is, to a great extent, the students with different learning needs, who benefit from the new approach to education. In all of the project countries, it is noted that students demonstrate new professional skills, have the courage to stand forward, for example by recording themselves with small videos, and exhibit a social behavior that contributes positively to the community.

THERE ARE ALSO BARRIERS

The new approach does not, of course, just merge smoothly into the daily reality of educational programs. Technical issues can be overwhelming, especially for teachers who start with negative attitudes towards mobile phones. The teacher's age is not necessarily important. However, students and young teachers have the natural advantage of being born into a digital era where rapidly developing technology and multiple communication forms are handled with ease. This does not mean that an easy relationship to digital technology automatically leads to optimal educational planning or empathic teaching styles.

Another typical challenge is the conventional schools' IT-networks and IT managers' attitudes towards support. Schools should be strategic in their integration of modern information technologies in pedagogy, using an appropriate technical framework.

Companies have not yet actively contributed with new vocational methods, presumably due to lack of resources and their primary focus on business. On the other hand, the companies involved have been open to new approaches and welcomed the results that were useful for them. That in itself has had a positive impact on students.

Barriers to the project have not yet been found among students. Contrary to the worst scenario, they treated the equipment responsibly and according to agreed upon rules. However, it is worth pointing out that even when young students seem to have a professional relationship to the use of digital media, this can mask a lack of critical judgement in the use of media. Teachers should guide the students in taking a critical and reflective point of view.

Moreover, we assume that the pioneer method's novelty value will decrease with time and thus lose some of its motivational power. It will be the teachers' task to anchor the learner-centered pedagogy and possibly follow up with the integration of updated technology.

WHAT IS A 'SMARTPHONE' AND WHAT CAN IT DO?

Smartphones are the new generation of mobile phones, which have emerged over the last few years and soon will conquer the market. Smartphones with their mini keyboards are not just phones, but have computer functions as email, calendar and address book, and office programs for reading and editing. The multimedia phone features such as camera, video, sound recordings or podcasting is advanced and can compete with specialized equipment. Smartphones can be customized with new software, and the variety of these programs is increasing. The social communication platforms, GPS functions and games are especially popular.

All of this is supported by the fact that the mobile broadband with almost unlimited mobile Internet is gaining ground. But how can the functions be used in conjunction with learning objectives? The chart below gives an overview of educationally relevant functions:

WHERE TO START?

What is interesting in the learning context are the specific benefits gained from involving mobile phones. In the project, educators from five countries selected focus areas in which to observe the possible added value:

1. The personal interaction between teacher and student, between the training supervisor and student, and between students. Here the Internet-based social mobile platforms are especially interesting, but the informal and personal framework for everyday communication through mobile phones is also explored. Thus, mobile guidance is tested - synchronously and asynchronously – a yet underexposed topic with considerable potential.
2. Teacher-controlled activities: Materials and tests are sent to students to be read/watched/heard. Students deliver answers in mobile form.
3. Learner-centered activities: Students experiment with new ways of working with their e-portfolio. In addition, they seek information in mobile databases exactly where and when they need it. They explore special features like barcode scanning and card reading or mobile platforms for communication in closed groups of students.
4. The conditions of the education system: The project participants gather and describe their experiences with the possibilities and barriers in the school environment, with colleagues, with the curricula, in cooperation with training companies, etc. There is focus on both the technological and pedagogical framework.

YOUTH CULTURE, LEARNING STYLES AND FLOW

SEIZE YOUTH CULTURE

Cell phones and smartphones in particular belong to youth culture. The mobile phone has become an unavoidable communication tool for young people. The question is whether the teacher/advisor can find a meaningful interface between training tasks and the student's world by making the mobile facilities useful in education.

Integrating elements of youth culture in education requires that you are aware of informal learning. Formal learning is structured, supported and evaluated in formalized education, while informal learning takes place more or less unconsciously in daily life. Informal learning offers great potentials. Informal learning arenas are dominated by desire - *something you really want to be able to do* - or at least by strong necessity - *something you have to be able to do in order to achieve a certain benefit*.

Informal learning gives, for the most part, immediate meaning and thus often has a motivational advantage over formal learning in an educational institution. When there can be transfer from informal learning into formal learning, the road is made easier for the young person.

Competent use of mobile phones can, in this context, make both educational practitioners and students aware of the students' special skills, thus fostering student self-confidence. When a student does not perform in a conventional manner, the teacher can take a detour and give support by identifying the student's skills in his own world: How does the student handle his mobile phone and new technologies? How does the student play computer games and organize with others? What strategies does the student have to solve problems in his own world? You will, more often than you expect, be able to point at competencies such as 'adaptability', 'technical skill', 'creativity', 'perseverance', 'cooperation' or 'initiative'.

After identifying how the student uses his strengths and resources, the teachers have the task of designing learning activities that match the student's learning process. For example, personal presentations can be practiced with use of the mobiles' facilities. For example, professional presentations were practiced during the project, where students recorded each other – a typical and ordinary part of young people's daily life. The footage was later used as a basis for professional client presentations.

In communication between tutor and multilingual students, it was seen that more fluent written and oral communication can be trained through sms-/chatcommunication, which is the preferred form of communication for many young people. Experiences from the project show that it can be an advantage to give professional as well as personal guidance via mobile phone, either synchronously in personal conversation and chat, or asynchronously via SMS and sending small mobile documents. Finally, education can benefit from the students' ability to organize communities through Internet forums, which also are operated with mobile interfaces.

INTEGRATING MOBILE PHONES INTO TEACHING INCREASES THE VARIETY OF LEARNINGSTYLES

Teachers want to and should be able to vary their communication and students' approaches to learning. The mobile phone as a tool can contribute to a more holistic approach to learning, combined with visual, kinaesthetic and tactile learning styles.

The analytical approach requires that one can identify and separate sub-elements from a whole. With an analytical learning style you would like to concentrate on the task chronologically / point by point and at a quiet pace. An essential tool for keeping track of the task's sub-elements is writing, classically understood as being in a correct written form. Writing is, however, an area where many vocational students have had negative experiences, as students diagnosed with reading and writing difficulties also have.

In the holistic approach, it is possible to a greater extent to approach problem solving by other means than writing, for example through drawing, through image and portfolio usage or through the spoken word. The holistic learning style prefers to keep "many balls in the air" and a high pace during task performance. Observing young peoples' media consumption shows that adolescents easily navigate through the TV's, computer's, MP3 player's and mobile phone's many possibilities. This is certainly a special competency, which is supported by the fact that children and young people are born into the digital age ("digital natives"). unlike adults over approx. 25-30 years ("digital immigrants").

Students with a preferred visual learning style also tend to have problems with conventional teaching, which often supports auditive learning, where the teacher leads the classroom and speaks in monologues with a few questions for the students. Most of us have at some point experienced students not having heard an important message that the teacher has repeated several times. But less than 15% of students have the auditive learning style as their favorite. When working with digital media, images as well as movies both have great significance.

The young people not only view many images, but they also produce them themselves. The images can be sent as multimedia or used as documentation in an assignment. It is natural for students to use mobile phones for image documentation, and in Denmark, these have the same value as written communication in official evaluations.

Finally, a large proportion of vocational school students are, popularly expressed, "practically gifted," which is reflected in the fact that their learning skills are in the tactile and kinaesthetic areas, where the mobile phone can be included in a natural way.

This project has apparently succeeded in matching the majority of the students' preferred learning styles. In all but a few cases this helps to foster desire to learn among students, which can be seen in their great enjoyment of and enthusiasm for their work, their concentration and obliviousness to time and place.

MOTIVATION THROUGH 'FLOW'

Flow is, according to Mihály Csikszentmihályi⁸, *"a special kind of energy that manifests itself by a high level of consciousness, perfect concentration, followed by an intense feeling of happiness (euphoria) and an experience of absolute unity of purpose"*.

In their project work with smartphones the students seemed to enter into a flow state, where they were fully aware and focused on the task. According to the Danish researcher Hans Henrik Knoop⁹, in the flow mode one can exploit the learning principle to the fullest. In the learning situation the flow is often

associated with problem solving: being creative in the sense of being able to find possible ways to solve the problem, and being innovative in the sense of getting new and different ideas and ways to do the work and thus acquire learning. Flow also has self-reinforcing role, since the student tries to reexperience being totally absorbed and alive, and the feeling of well-being that the activity gave him/her. In this way, flow can act as a magnet for learning supported by the use of modern digital media.

Optimal learning can take place when both the right amount of professional challenge and the skills to perform the activity are present. Flow is about immersion, energy, joy, inner motivation and learning on the one hand, and on the other hand, structure and clear objectives.

Students with learning disabilities especially need for the teacher to organize their learning activities, so that the goals, framework and effect of the activity become clear to them. This is an essential condition for flow, but the teacher can never directly bring about the state of flow.

Absorption requires attention and concentration, and sustaining attention requires motivation. The students' work with digital media in both school and internship offers the basic motives for learning¹⁰:

Activity motives are in play when we are active, want to create and seek excitement. Students are both physically and tactilely active and can quickly seek solutions to problems.

Cognitive motives are driven by curiosity and interests, and the students clearly demonstrate their keen interest and curiosity in the media's opportunities.

Social motives are our interactions with other people, which students use in interaction with other students, customers, fellow workers or boss when solving tasks. The effective sharing of photos, presentations, portfolios and social platforms also strengthen the social motives.

□ Emotional motives may be driven by anger, fear, joy or enthusiasm. The project shows that it is primarily the positive emotions that motivate students when using modern media. Students experience their curiosity, creativity and skills when using media, which results in them mastering the work.

IN PRACTICE

Here we have selected two areas to illustrate how the mobile phone is put to use in teaching and guidance:

BRING THE MOBILE PHONE IN TO PORTFOLIO PRODUCTION

Using the mobile phone in portfolio production is an obvious choice. The portfolio documents the students' learning and work outcomes. It also describes the student's decision-making process and therefore supports reflection. The portfolio is part of the communication between student, school and training company, and a presentation portfolio can also be used in job search after completion of the educational programme. The trend is towards increased use of e-portfolio, with digital images, audio and video recordings, and links

Being able to manage files produced with the mobile phone, increases students' chance to record relevant situations as they happen, because the mobile phone is almost always at hand. The students' natural familiarity with the mobile phone makes its use easier, and the threshold for creating productions for educational purposes is thus lower. At the same time, informal learning is combined with the formal learning environment, and the students' understanding of their own learning increases.

Students with special needs often have difficulty handling being given a task and then left to themselves. It is essential that the teacher / trainer guides by:

- providing technical advice and referring to relevant sources
- providing clear technical questions which can be answered by means of mobile productions
- helping to identify relevant documentation situations
- setting the time frame and adjusting it along the way
- supporting collaboration between students
- being available during the process within agreed-upon conditions
- providing feedback on student productions and helping with recording/saving documentation.

It is often found that the students themselves are very enthusiastic about their own final products. Often it turns out, however, that it was the process that was significant for the professional and personal insights. The teacher must therefore help the learner to put the process into words and to obtain a self-critical distance to the final product. In this context, one can either refer to prior established quality criteria / guidelines or to quality standards for the professional productions that the portfolio relates to.

MOBILE GUIDANCE – A DIFFERENT COMMUNICATION FORM

As professional and personal mobile guidance has not yet been the object of research, there is very little literature on this topic. The mobile phone can be a shortcut for young people who find it difficult to make personal appointments and "*sit face to face.*" Impatient students or students with attention deficits often give up beforehand, instead of seeking professional help from a teacher who "*never is nearby, when you need him.*"

Synchronous contact through the mobile phone or online chat on social mobile platforms can replace face-to-face guidance. Guidance is then given to a much greater degree on the students own terms and familiar ground. To keep a professional distance, the school can consider formalizing this kind of guidance:

- Is there a need to make an agreement on the time frame or definition of the content?
- Is there clarity regarding the confidentiality of mobile conversations and instant messages?

Asynchronous (deferred) mobile guidance can take place using SMS or exchange of documents / media files that are suitable for mobile use. Consideration must be given to the following:

- Has the student received permission for publication from the persons included in the photo, film or sound? Has the school provided a template for contract documents?
- The documentation of work processes in training companies should take into account trade secrets and agreements on publication for educational purposes.
- Does the school have ethical standards regarding the storage and forwarding of SMS messages or mobile documents?

Both mobile guidance forms can also be misleading, however. In other contexts, it has been documented that usage of a Danish dialect not officially recognized is automatically associated with lesser intelligence. When the teacher / advisor cannot read body language, but only hear the student or read short SMS messages, errors may occur, and an accent or abbreviations can give a distorted impression. Typical phonetic, linguistic or cultural peculiarities should be decoded in advance, when guiding multi-language students or students with dialect. Students with different ethnic background than Danish or very young students may have a particular style of communication in their phone calls, SMS or chat that is unfamiliar to teachers / advisors.

SUMMARY

Using digital media in teaching appeals to young vocational students, as the project's many examples demonstrate. This can be interpreted as a success in matching the majority of the students' preferred learning styles, in incorporating youth culture in a relevant way, and in facilitating teaching, so that learning in flow becomes possible.

1. Students participate in and contribute to their own learning. Students are active and act from their own strengths and competencies.
2. The learning process is changing, so that students participate in the choice of method and approach and become more equal with the teacher. This obviously requires that the teacher agrees to waive some of his power and control.
3. The students' benefits from the teaching, in theory as well as practice, increase, as they are motivated by their desire to learn and their involvement.
4. The community is strengthened (primarily in school education), where students are involved and engaged in learning, and support each other.
5. The students' confidence and self-esteem is strengthened, as the focus is on their strengths and competencies rather than on deficits and functional limitations.

The question so far is not only how schools can incorporate mobile phones into teaching, but - what is mobile technology and how can it be used, in a way that can directly influence (special) pedagogy, guidance and competency goals? This is all an ongoing process for the teacher / advisor and for the school, because at this point in time, the motivational media are smartphones. Only time will tell what types of technologies or work methods will motivate children and young people with learning difficulties in the future.

Thanks to member of the project's quality panel, Charlotte Koelle Joergensen, education leader, Social and Health School Greve, Denmark.