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Report from a German school project on mobile learning

In this section we present aspects of a German school project on mobile phones with a focus on photo, video and GPS functionality for Mathematics in a 6th grade with 12 year-old students in order to exemplify the general discussion at the beginning of this paper.

The project 'MyMobile: Handy im Unterricht'[1] (Mobile phones within school instruction) was run by the public association 'medien+bildung.com gGmbH'[2]. A Maths teacher, together with a media educational professional, implement the instruction unit *The mobile between sphere and google ('Handy zwischen Kugel und Google'): construction and measuring circles and spheres within teacher-guided instruction and episodes of media-orientated student activities*.

From this project we focus on a short mobile video in which a 12 year-old boy investigates angles at home. He took pictures of differently angles and frames them with a German Pokémon song as a soundtrack for his video.

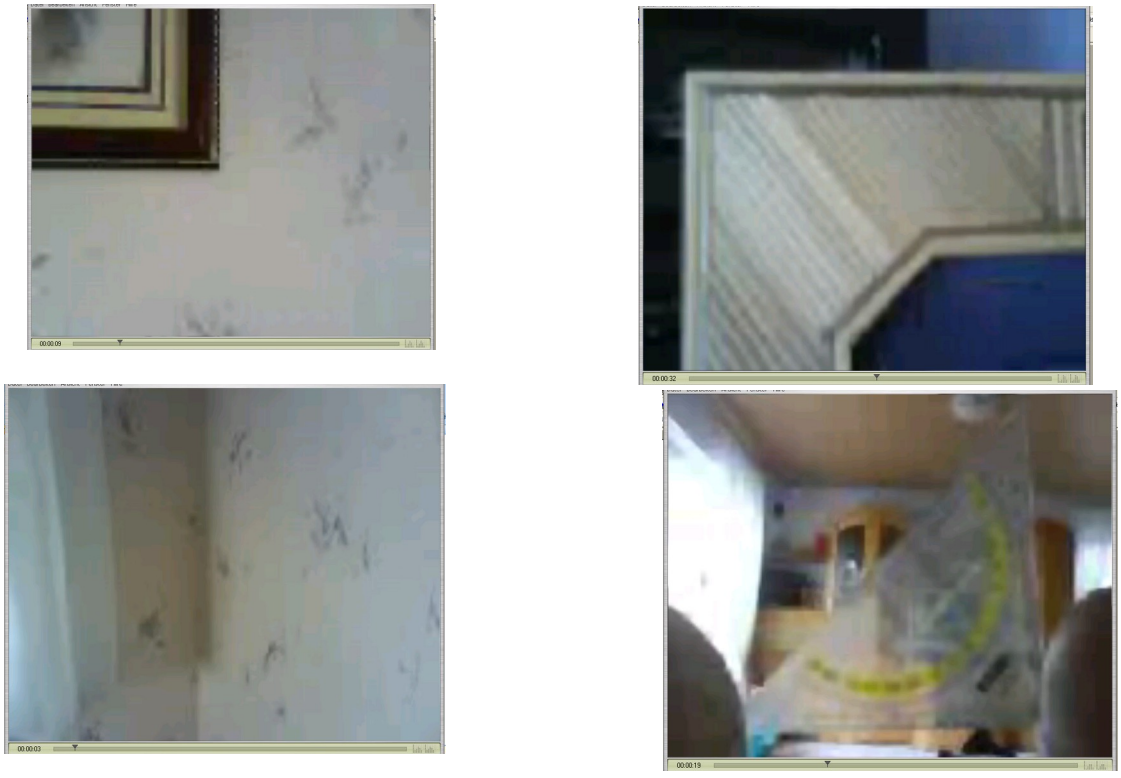

Figure 3 Snapshots of pupil video

The snapshots of the video in Figure 3 show an interaction between clearness and

[1] Friedrich, Katja, Bachmair, Ben, Risch, Maren (2011) Mobiles Lernen mit dem Handy. Herausforderungen und Chancen für den Unterricht. Beltz Verlag, Weinheim, Basel 2011. ISBN 978-3-407-62765-0

[2] medien+bildung.com gGmbH, - Lernwerkstatt Rheinland-Pfalz -
Postfach 21 72 63, 67072 Ludwigshafen
www.medienundbildung.com

ambiguity within the boy's physical environment of everyday life. This interaction is a real step to a higher level of reflexivity. This is a remarkable step because everyday life is normally out-of-bounds for discussions at school; it tends to be taken for granted. In the school the boy's video is not discussed. Therefore, a relevant step to a further level of reflection is missed. Indeed, an informal group discussion of what he had looked for and recorded would have emphasized reflexivity. One must not forget that an increase in reflexivity by way of verbalisation is a typical task of the school. The boy reached the first step of reflexivity by attending to the context of everyday life with his mobile phone prompted by a Maths task in school. He widened the context of his homework and extended the teaching unit's focus on angles by reflecting on his everyday life at home using his favourite Pokémon song as sound track for the video. Furthermore, at the end of his video he refers to Pokémon by showing a picture of a Pop song poster or album cover from his personal media world.

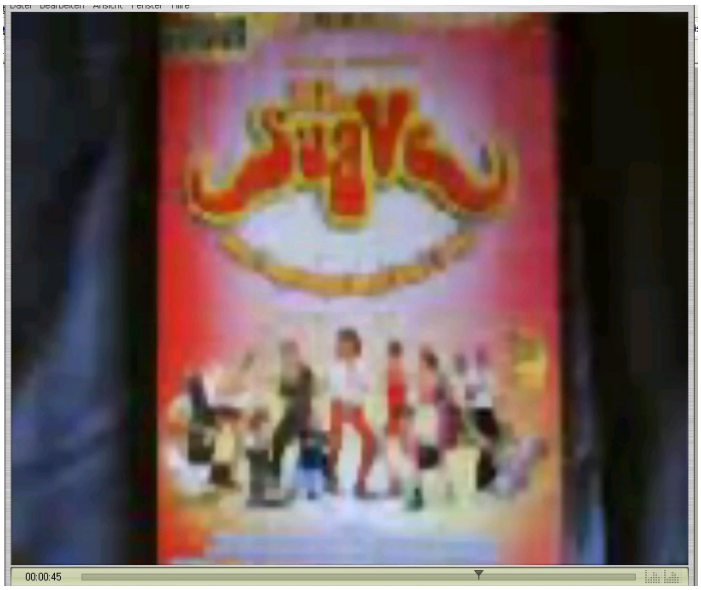

Figure 4 Pop song poster or album cover

The boy generates a context which combines his Maths tuition in school with his media favourites. However, at a first glance from a perspective outside this personal context it seems this context does not deal with learning and Maths. It may seem that Pokémon is not about Maths but situated in the gender perspective of a boy. Asked by the female media educationist about this he was not talkative as to why he enriched his investigation of angles with a Pokémon soundtrack. We are rather certain that he was not keen to reveal his emotional relation to Pokémon because he relates to Pokémon in a male way. For him, and the majority of boys, Pokémon is related to competition, struggling to get from one level to another. It is about scores and linearly measured development. However, for the male Maths teacher scores and linearity could open a challenging curricular field: how can we bring together (mathematically) the topic of angle as segments of circles and spheres with the entertainment issue of levels and scores? How can we combine the simple linearity of counting and scores with the higher complexity of angels? It is an interesting mathematical task, which has the possibility to be included in the context generated by the boy. The boy generated this context with the help of the applications of the mobile phone and by adding a sound track. Furthermore, he took up the linkage between mobile devices to entertainment.

Secondly, we would like to discuss another example of a media-induced learning context which results from linking the teacher's whiteboard with the student's mobile phone. It is not a technical link via cable or Bluetooth. On the photo in Figure 5 a student engages with the photo application of his/her mobile phone with the teacher's whiteboard. Taken at face value, we see a classroom setting with two media, the whiteboard and the mobile phone. A 12 year-old student takes a photo of the whiteboard on which the teacher drew two circles with the terms 'Mittelpunkt' (centre) and 'Radius'. With this the teacher introduces the learning unit on angles.

From an analytic point of view, the context is generated by the interaction of the teacher, with his drawing on the whiteboard, and the student, who takes a photo of the two circles. Usually a teacher asks the students to reproduce the circles in their exercise book by means of dividers and handwriting. By using the mobile phone's photo application the teacher-generated context is widened by means of the mobile phone. The video example in Figure 3 makes visible this enlargement of the reflexive learning context. The mobile phone opens the context of the classroom to work at home and to the everyday life of the student. At home the student investigated, among other things, mathematical angles within ambiguity of forms. Specifically, the everyday life context of the student includes his world of entertainment which contains, among other things, media such as the Pokémon sound track. The Pokémon sound track is not just marginal; it is really relevant. It is a strategy game with levels, calculable results, comparisons of success etc. These issues of the strategy game and the entertainment context are germane to Maths.

The teacher's decision to combine the whiteboard with the mobile device offers the option to assimilate two different areas of context. The context of the whiteboard is controlled by teacher and is based on the structure of the teacher-guided instruction. The context of the mobile phone incorporates everyday life and entertainment and belongs to the domain of the students. Both contexts are assimilated into one formal and informal learning context by the teacher + whiteboard and student + mobile phone. The new and widened context contains the formal learning of the school and informal learning of everyday life incorporating entertainment.

What is the additional affordance compared with 'just' using homework with an exercise book and dividers? From our perspective the answer is the integration of the mobile device into everyday life and entertainment. The mobile provides a new context for schools.

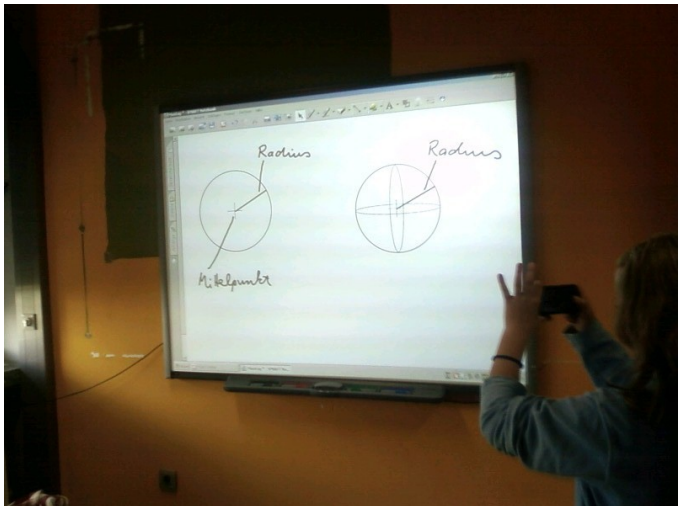

Figure 5 Student taking a photo of the whiteboard

These two, rather arbitrarily chosen examples from Maths tuition offer an insight into how media education can deal with the new mobile cultural resources. In the foreground are user-generated contexts which are generated in everyday life with mobile devices and against the background of students' modes of learning and reflexivity in everyday life. Furthermore, from this perspective the definition of media literacy receives new aspects of reflexivity. It is reflexivity in contexts. Of course, it is a naïve reflexivity which is typical for everyday life. But the school, with its long cultural experiences of reflexivity, could and should concentrate on empowering its students to obtain a higher level of reflection.