GO PRO!
First impressions from recording in the classroom

With a GoPro® head-mounted camcorder
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I first saw a GoPro® camcorder—the HD Helmet HERO—worn by a bicycle motocross (BMX) rider in a promotional video ("GoPro," 2010).[1] I immediately thought of classroom applications, considering what advantage it might provide over normal student and teacher perspectives. Hindmarsh, Heath, and Luff (2010) describe two perspectives: 1) the fixed (static) positions, which offers a consistent, relatively unobtrusive view of the stream of action, and 2) the roving (handheld) *participant* view, which is able to pinpoint particular aspects of the scene (pp. 38-40). I recalled using a static camera to explore relationships between student anxiety and engagement (Kindt, 1997). While this perspective helped me increase my understanding of the nature of classroom interaction, it did not capture the student's view of things, a clear advantage of the GoPro camera (Photo 1).

Photo 1: A participant view

Confident in the camcorder's potential, I ordered the GoPro Helmet HERO late in the summer of 2010 and introduced it in oral communication strategies (OCS) courses at the beginning of the second semester. At the time of writing (late November), I have collected 9 GoPro recordings approximately 90 minutes in length from each of 2 freshman (OCS2•C and OCS2•D) and 2 sophomore (OCS4•C and OCS•D) second-semester OCS courses.

Introducing GoPro

To introduce the camcorder to students, I used the same clips I saw at the GoPro website (www.gopro.com). Preparing to talk about summer activities, I showed BMX video clips from two perspectives, stationary and helmet-held. We then discussed some of the differences the perspectives provide and what might be interesting to do with a head-held camcorder. Students suggested activities like "climbing a mountain," "cooking something," and "riding a roller coaster." Then we considered language learning and our classes in particular.

[1] GoPro® is a registered trademark of Woodman Labs, Inc., used with permission.

After contemplating the idea, I showed students the actual camera and told them that I thought it would be "so interesting" to see the class through their eyes, something that teachers rarely see. Then I asked for general permission to use the camera and for a volunteer. In all 4 classes, agreement to make GoPro recordings and the first volunteer came quickly.

Thoughts on advantages and disadvantages
After 9 weeks of using the GoPro camera, I can see several advantages and disadvantages:

1) A participant's view
The greatest advantage, I believe, is the camera's ability to capture a participant's view of events, whether that of the teacher or a student (compare Photo 2 and Video capture 1). Never before have I been able to see a close approximation of what students see. By seeing and hearing what a student and his or her partner are doing during tasks, I am able to make more informed pedagogical decisions. Viewing a number of students over several class meetings enhances this awareness. In fact, the process of reviewing

Photo 2: Teacher's view of activity

Video capture 1: Student's view of activity

videos has helped me better understand both individual students and the classes in general.

2) Recording instruction
Related to what students see and hear, the camcorder provides excellent recordings of instruction. When I am speaking, the audio is clearly discernable, enabling me to later examine my instructional language. The wearer's voice is also clear. GoPro cameras do not yet have an external microphone, however, so it is often difficult to hear the wearer's partner in student conversations. Asking partners to speak clearly and sit closely or using IC recorders or other supplemental recording equipment can overcome this problem.

3) Capturing teacher behavior
Besides teacher talk, the camcorder can also capture teacher behavior. This is beneficial for teachers examining the effects of their body language, physical

movement, gestures, and the like. This aspect of teacher development could, of course, be captured with a stationary camera, and perhaps even more effectively by an observer or assistant with a handheld camera. It would be useful to examine teacher behavior with the GoPro camera, however, when exploring what students attend to.

4) The GoPro as presence pressure

Several students have commented that the GoPro camcorder provides a kind of virtual teacher's eye, an extension of the teacher's *presence pressure*. In email feedback, one student wrote, "I think most of students will try hard if we have a camera in class because if we do something bad during the class, the camera is watching everything!!!" This also shows that the camera is intrusive to a degree, possibly affecting their behavior both positively and negatively. A number of students note that the camera does make them nervous, but with subsequent use, they get used to it: "It was really fun even I forgot that [my partner] was wearing the camera in the end. It doesn't bother me at all!"

5) The effects of novelty

Another benefit of introducing the camera has been the effect of novelty on a number of levels. Some students said that they have seen the camera used by comedians in stunts, and they find it interesting and unique. Some initial enthusiasm might also be tempered, however, as students realize the camera is heavier and the headband less comfortable than expected. Still, in week 9, new wearers and partners especially, seem to enjoy using the camera.
The camera also allows me to explore novel possibilities. While it is true that using activities and materials for the first time inevitably requires adjustment and revision to increase their effectiveness, this alone should not deter applications of innovative technology or procedures (Beck & Kosink, 2006). One concern may be that there is too much innovation too often for students to maintain a productive comfort level, especially for those that prefer carefully controlled activities. Also, it is time-consuming to create one-off materials for each class, so teachers will need to make judicious decisions on how much time and energy to invest.

6) Logistic issues

When using GoPro equipment, there are also a number of logistic issues that require extra attention from the teacher. Files need to be successfully recorded and stored. The camera must be set properly—with charged batteries and an empty memory card—and turned on. Systems for choosing volunteers, providing all students with opportunities to participant, and gathering feedback need to be established. None of these tasks are odious, but they do take time and organization.

GoPro applications

In the first 9 weeks of collecting classroom data using the GoPro camcorder, I have developed some procedures, activities, and materials made possible by

the unique perspective it provides. At the beginning of the first class, as I was introducing the camera, I put it on during my explanation. This became the first recording that I showed in subsequent classes. I could have used footage from the first student volunteer, but I thought focusing on myself would help students to feel more comfortable with the camera while better understanding its purpose, what it captures, and how it may be used.

The first instance of bringing student language captured by the GoPro camera back to a class as materials was a section from approximately the last minute of my explanation through 2 minutes of a conversation task. This resulted in a transcription comprising of several lines of my explanation and then ¾ of a page of their conversation. It provided a number of learning points, including both linguistic and strategic foci. Because of the visual aspect of GoPro data, I was able to examine not only what is being said, but at what participants are doing.

Video capture 2: View of GoPro-derived collaborative activity

In week 4, I used GoPro footage to focus on the use of gesture and expression. I extracted a 3-minute excerpt of my explanation during individualized teacher to student instruction. Students matched a list of gestures and expressions with when they occur in the transcription with the help of a partner (Video capture 2). It appears that there is great interest in recordings from students' own classes, which, being of their actual production, is set in their zone of proximal development (ZDP) (see de Guerrero & Villamil, 2000; Vygotsky, 1978), making it easier to access and engage in.

Future directions

There appear to be a many possible applications for GoPro cameras. By the end of the semester, I should to have sixty 90-minute recordings and intend to use NVivo 9 (Richards, 2010), a type of qualitative data analysis software (QDAS), to aid in organizing and analyzing this relatively large amount of data. Some possible areas for further study include: 1) exploring ways to address the challenging task of aligning teacher and student expectations, 2) involving students more in analyzing clips, 3) designing in-depth questionnaires and conducting interviews to clarify student experience, 4) exploring the effect of the camera, and 5) documenting how the camera can promote *concurrent self-reflection* in the teacher, as he or she recalls insights gained from the videos in real-time in subsequent classes.

Final thoughts

Although there are a number of issues related to its implementation—including cost, logistic concerns, student comfort, place in the larger curriculum, and

integration with other technologies —there is great potential for new insights from this innovative camcorder, particularly from the participant perspective it provides. As with all innovations, there will be a period of experimentation and development leading to more efficient and effective methods. My impression is that the GoPro head-held camcorder can lead to new possibilities in collaborative learning, materials development, student motivation, teacher education, and other areas of classroom research. I expect it—and future, more-lightweight versions with improved audio capture—to become a staple among educators' observational and developmental tools.

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