The skiing accident between myself (Karl Niklass) the ski instructor, and my student (Carolien Van Culenborg).

On the 13th of January 2011 I was requested by the Götzens ski school to instruct a group of Dutch people for three days in the Axamer Lizum ski area. The group were of mixed ability, but we did quite well on the first day. Most of them were making turns and using the drag lift on the beginners nursery slope. On the second day, after starting on the nursery slope we ventured up the mountain. Generally the snow conditions were better there than the beginner’s area and the terrain was less steep (important the first time up the mountain as anxiety can set in). Some of the group went onto the Damenabfahrt after the lesson. On the third day, I gave the group the option of repeating the route we had taken the day before or going onto the Damenabfahrt (the only blue slope in Lizum) again, but this time with me. The group agreed to take the Damenabfahrt.

The group did very well on the first and steepest part of the piste. Carolien was the weakest member of the group. She often turned her upper body to the mountain which then transferred her weight onto the mountain ski, resulting in loss of control. She also wanted to try and get the turn completed quickly, resulting in a “zig zag” turn shape. These are common misconceptions with novice skiers, brought about by underlying psychological problems with regard to speed, fear of the fall line, loss of control etc.
On the first two days we worked on addressing these problems with the whole group by doing “hallelujah” turns, that is, staying on the fall line for the time it takes to say this word, increasing the turn radius and finishing the turn by going back up the mountain.

Carolien often resorted back to the type A shape of turns, with the resulting loss of control. To prevent this happening, I let her hold onto the grips of my ski poles. She could now follow my line and copy my body actions better. It also provides a great psychological aid, as it restricts the field of focus, thus reducing anxiety. We had already practiced this a few times on the previous days and occasionally at the beginning of the Damenabfahrt. This type of turn is shown below.

Line A appears to be slower for most beginners as there are more turns. In fact the opposite is true because the skis are always facing downhill and tend to be parallel most of the time. On the other hand line B is more round and flowing, being closer to the skis natural radius. The speed throughout the turn is more constant in this basic turn, with the skis in a wedge shape for longer in the fall line.

My body actions are copied by the student. I make the movements necessary for the turn just before they do. I have a better feel for what they are doing, and to some extent I can also correct their upper body actions. I dictate the line of the turn, giving the student less distractions, thereby letting them concentrate on the task in hand.
The sequence of events leading up to the accident is shown below. I had let the rest of the group go on ahead to a pre arranged meeting point about 100 meters below. Carolien and I could now make our turns together without the distractions of the rest of the group.

We had already made several turns together before this point. Carolien’s line did not follow mine. She went too wide and then attempted to make a sharp turn. Her upper body turned to the mountain causing a transfer of weight to her mountain ski. This pulled me backwards and a little off balance. Just as I was attempting to recover my balance her downhill ski crossed my left ski and the side of her mountain ski caught the back of my left ski. My ski was trapped, and as she fell, my left ski and leg were pushed forwards and rotated inwards. This all seemed to happen in slow motion. I was expecting my binding to release at any moment, but due to the slow nature of the fall and the ski loosing contact with the snow my left knee was rotated gradually inwards until with a popping sound the ligaments in my knee broke.
This was the first accident I have had whilst teaching in over thirty years as a ski instructor. I am very proud of my safety record and safe teaching methods. The accident happened at 11:50 on the 15th of January. The snow conditions on that day were good. It was a sunny day with an air temperature of -5°. I made sure Carolien was safe and called the chief instructor to inform him of the situation. He arranged for another instructor to take over my group. By then another member of my group had walked back up the slope and secured the area. He then helped me remove my skis and to sit upright. I then called for the mountain rescue for myself. The replacement Instructor arrived and I was transported to Innsbruck klinik.

The picture below shows the top and middle part of the Damenabfahrt and the location of the accident.

The Damenabfahrt is 3,100 meters long and has a vertical drop of 775 meters. The average gradient is 14.5° (marked as a blue slope). I normally allow two hours for the first descent. This includes the lift transportation and a short stop at one of the mountain huts. Therefore, the speed of the decent is not much faster than walking pace.
I had my bindings checked after the accident to see if there was any malfunction of the binding. The results of the computerised test are shown below.

The results show that the bindings were set correctly and were in perfect working order.
The left knee injuries are as follows:

2. Partial rupture of the medial collateral ligament.
3. Bone bruises of the lateral tibia plateau and lateral femurcondyl.
4. Tears to the medial cartilage.

The abschlussbefund is shown below.
It is now expected that two operations for reconstructive surgery of the knee are required. The first, to clear away damaged tissue and scar tissue. The second operation is to reconstruct the anterior cruciate ligament and the medial collateral ligament. Before, between and after the operations intensive physiotherapy is necessary. It is not sure at the moment if full mobility of the knee can be restored.

Additional Information

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For the latest update of this document please go to the following web site:

www.white-smoke.at

Under the contents of the home page go to “Charlie’s Knee” and then the sub section “The Skiing Accident”.