

Computing Educators Oral History Project

An Interview with *Michael Kölling*

Conducted Friday, March 8, 2013 and July 10, 2013

At Denver, Colorado, USA

Interview conducted by Barbara Boucher Owens

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Context for the interview: The first part of this interview was conducted face-to-face during a break while both Barbara and Michael were attending the SIGCSE Technical Symposium in Denver, Colorado. Michael had given the keynote talk at the beginning of the conference as a part of being recognized as SIGCSE Outstanding Computing Educator for 2013. Due to tight schedules, the first part of the interview was limited in length, so Barbara arranged with Michael to conclude the interview via Skype four months later.

1 [0:00]

2 **B: This is an interview with Michael Kölling from the University of Kent, Canterbury,**
3 **England, conducted by Barbara Boucher Owens. This interview is being recorded on**
4 **the 8th of March, 2013, in Denver, Colorado, the United States of America. It is part of**
5 **the Computing Educators Oral History Project. Would you pronounce and give your**
6 **name properly?**
7

8 M: My name is Michael Kölling. And as you can tell probably tell by now quite easily from my
9 accent, it's a German name; I am German. In the English-speaking world most people call
10 me Michael. I am perfectly happy with that. But originally, as my parents christened me, it
11 was Michael {three syllables}.
12

13 **B: Thank you, thank you. And actually we will start with your parents. What did your**
14 **parents do for a living? And where did they live?**

15
16 M: My parents lived in Bremen, in Germany. That's in northern Germany, close to Hamburg, on
17 the western side of Germany close to the north coast. They are both retired now. My father
18 was a car salesman. He sold cars for most of his life. He started as a fruit salesman in — my
19 grandfather did a little fruit shop. And then worked with cars, selling cars most of his life.
20 My mother for the largest part of her career worked as an administrator for the Red Cross and
21 she administered some refugee programs for the Red Cross. They are both retired now.

22
23 **B: Thank you. Did they have any higher education? How far did they go in their**
24 **education?**

25
26 M: No, my mother finished school, sort of high school, and then became a school teacher. So she
27 did not go to university. My father didn't finish school, actually. He was thrown out of
28 school in fact.

29
30 **B: There's a story there!**

31
32 M: Yes. So he ... the school system in Germany is sort of a tiered system. There is three tiers
33 based essentially on ability. You get sorted into three different kinds of school fairly early on.
34 And only the highest one, it is called Gymnasium in Germany, it's the high school, that's the
35 only one that leads to university entry qualification. He actually started off in that; didn't
36 perform very well and he said he was always the class clown until the teacher had got enough
37 and he was actually thrown out of school and never finished his ... he didn't finish to the
38 degree that leads to university qualification. But I think in his family that wasn't really a path
39 that they ever considered seriously anyway. Both his parent didn't have a very ... at least not
40 a university education either. So my generation, my brother, my sister, and myself, we are the
41 first in our family to actually go to university.

42
43 **B: So tell me about your brother and sister.**

44
45 M: My ... so I have got an older brother and a younger sister. My brother ... he did very well in
46 school. He is very smart, very ambitious. In fact he studied computer science as well, before
47 me. He is two years older, and he studied ... but he never finished. He actually wanted to
48 become a pilot and applied to Lufthansa. And at the time they didn't hire at all, at that time.
49 So he then did his second best choice and studied computer science. He got about two years
50 into it and he got a letter from Lufthansa saying they had started hiring again and was he still
51 interested. He aborted his degree and became a pilot. So he is still a pilot for Lufthansa now
52 and very happy with that. So he has got a start of a computer science degree study that he
53 never finished.

54
55 And my sister, she's two years younger than me, she also started a degree and never finished,
56 in sociology, and decided after some years that that's just not for her and she actually works
57 with dance therapy now. So she is quite different from me. My brother is also very
58 technically thinking, similar to me in the way of thinking. Very technically interested and

59 logical. My sister is much more interested in people and emotions and things. And so she
60 always liked dance. So she has a job doing motion therapy and dance therapy and things like
61 this.

62 [4:47]

63 **B: Hmm. Very interesting. Were your parents technically oriented in their interests,**
64 **avocations?**

65
66 M: Not really. No, there was nothing much at all. My father, as I said, he didn't finish school,
67 but he actually is very interested in education. So he started seriously reading in his adult life.
68 So then ever since I've been born, certainly, he was ... he knows a lot, he reads a lot. But he
69 said he became interested in learning really only long after leaving school, not while he was
70 at school. And so, he's not a specifically technical person. But he gave us all an interest in
71 learning and certainly has always encouraged us to learn new things. So I got the more ... the
72 generic, the value of lifelong learning from him rather than specific technical things.

73
74 **B: And how about your mother's support of your learning?**

75
76 M: The same. She certainly saw the value and was very supportive of us going to university, for
77 example. My father always said (my mother supports it, you know), "You know you will
78 never inherit much from us, you know, there's not a lot of wealth, but the one thing I'll
79 always do is make sure you can get an education that is as good as you are able to." And so
80 they both really saw the value of that and worked very hard to enable all of us to do exactly
81 whatever we wanted to do in terms of education. And I studied for a very long time.

82
83 **B: Let's start that studying path and let's start in the first year, when you were just a**
84 **child, starting school. What kinds of things do you remember? What is outstanding**
85 **about those early years of education? Teachers, courses, playground ... ?**

86
87 M: The most, I think, probably the most important part for me is that I always liked going to
88 school. I don't remember details exactly of what we did there, what happened there, at least
89 not from the very early years. I don't remember much about my teachers — I have sort of
90 vague memories — but I remember the feeling of always looking forward to going to school.
91 So it was obviously a welcoming environment where ... I remember still my first day in
92 school. For the first week we had only one one-hour lesson and then we were picked up, so
93 we were eased into it very gently. I was extremely disappointed because I wanted to have a
94 break, and because there was only one lesson there was no a break. And I actually was
95 looking forward ... my brother had told me about how you played with your friends in the
96 break between lessons and for the first week there was no between lessons because we had
97 only one lesson.

98
99 **B: Only one lesson!**

100

101 M: So I was actually looking forward to being in school longer. And I always enjoyed going.
102 And I think that's the important thing for me, to just ... to see school as something positive
103 and not something that is an obligation, not something you had to do against your will.

104

105 **B: Did you have friends in those early years that studied ... that liked the same kinds of**
106 **things you did? Do you remember any?**

107
108 M: Oh, yeah. I remember some friends ... from the really early years. So in Germany when the
109 school first ... the primary school is the first four years of school. So from that time I am not
110 in contact with any of them anymore now. But certainly I had a good group of friends at the
111 time.

112
113 **B: Then explain some of the school system. Did all the children go to the next school**
114 **together or ...?**

115
116 M: No. After ... at that time, after four years, then you go to secondary school and that is where
117 these three tiers start. Where, on the lowest tier, it's called *Hauptschule*, the whole education
118 is only nine years long. So after nine years of school you leave and then typically go into an
119 apprenticeship or trade.

120
121 The second, middle tier is called *Realschule*. It's ten years long in total. And then also
122 typically you do an apprenticeship or something, where you still have some schooling,
123 certainly a few weeks a year, but mostly learn in a trade or learn on the job.

124
125 And only the highest one, *Gymnasium*, is thirteen years in total. That ends with university-
126 entry qualification. And so after only four years, you get sorted into one of those streams.
127 And looking back at it now, I think it's a fairly harsh system where people make life-
128 changing decisions about children at {age} eleven or so, which at the time, I wasn't — well,
129 even as an adult in Germany — I didn't think much about. But now, knowing other systems,
130 is actually ... I find it a very harsh system. It is not like that any more; now the decision is
131 still made, but two years later. Now the primary school is six years in most states in
132 Germany. But there, sort of, the first four years everyone is together and then you get split
133 into these different school streams.

134 [10:01]

135 **B: The next one ... do you remember? Well, let's go back, what do you remember about**
136 **that particular period?**

137
138 M: So in primary school, as I said, my memory is fairly vague and I just have essentially a few
139 isolated incidents in memory. But nothing particular other than that I enjoyed the time. I have
140 a much better memory then from the secondary school.

141
142 **B: OK, let's hear about that.**

143
144 M: We also moved cities and we moved to a different city and I went to a different school in the
145 area. So they were entirely different.

146
147 **B: Tell us a little what was different about the cities.**

148
149 M: The ... I grew up in a small town called Burgdorf, near Hanover in Germany. That was my
150 primary school time. And then around the time when I changed to secondary school, we

151 moved to Bremen, which is further north, close to the coast. Education in Germany is state-
152 based. So every state has its own education system and there are differences. And that was
153 moving into a different state so into actually a different school system.
154

155 And in Bremen, where I moved to, they were essentially half-a-year behind the curriculum
156 compared to where I came from. And that actually ... I think, I've often wondered whether
157 that was actually a fairly decisive factor for me, because suddenly I was very good at school,
158 because the first half-year I was doing things that I had already done. It was essentially a
159 half-year of just repetition. And I was a sort of mediocre pupil before then and suddenly I
160 became very good, because I'd heard it all before. But then there's the fact — once you have
161 this it is actually easier to stay at the front. I became a very good pupil from then on. I often
162 wondered whether it's really just the coincidence of having moved at that time. That
163 certainly ... moving the other way around would have been hard. This way around made it
164 very easy for me.
165

166 **B: Were there particular courses that ...**

167
168 M: Yes. I had a very inspirational maths teacher, so I ... that's when I started to like maths. And
169 that was only because of that teacher there. He was ... well, he was a very nice man to start
170 with. Personally, I really liked him. But he also had a really great way of teaching.
171

172 We had ... I remember one lesson, we were talking about volumes of various shapes. He had
173 a cube. It was a 10-centimeter edge length cube. Which he had actually this metal cube that
174 had one open side and he told us that the volume of that was exactly one liter. And we all
175 knew sort of the liter from ... because in Germany drinks come packaged in liters, and so
176 you'd get a liter of milk and so you know what that looks like. And it seemed to not fit, it
177 seemed too small. And people said, "No, I don't believe that, it will never fit in there." So he
178 just, in the middle of the lesson, sent one of the pupils out to run over to the store and buy a
179 liter of milk and come back and poured it in there. So things like this really stuck in my
180 mind. It was great. Herr Geiersbach was his name. I ... and he really started with me to see
181 maths as a fascinating, positive thing just because his lessons were so much fun.
182

183 **B: Were there particular subjects you did not like?**

184
185 M: Yes, but it was also mostly driven by the teachers. For some time I didn't like English or
186 French, because I didn't like the teachers for both of those subjects. Even though ... well,
187 and I wasn't particularly good at languages either. I later became more competent at it. But
188 ... yes, so it wasn't really the subject I didn't like, it was the lessons I didn't like because of
189 the teachers. Generally I was ... I was generally interested in just about anything, as long as
190 it was interesting and entertaining.
191

192 I had that equally with geography. It was incredibly boring because all we did for years was
193 memorize names and borders of places and there was just no interesting story behind it. And
194 so I found that incredibly boring. History and geography in my school time I really found
195 incredibly boring. I started reading about history in my adult life later and I find it really

196 fascinating now. In school I was not interested at all. But that is, as I said, driven mostly by
197 teachers, rather than subjects.

198 [14:52]

199 **B: Hmm. Then what came next?**

200

201 M: Then ... yes, school progressed. In my time, there was still ... it was a single school going
202 from year five up right to the end, to year thirteen. Often nowadays — another change of
203 school today in Germany — where the last three years are in a separate school. Back then it
204 was the same school. So I was then, from year six on, I was at the same school right to the
205 end. And that was a really good environment, it was a ... I had many friends there. It was a
206 ... I enjoyed being there. I always liked going to school right up to the end, that didn't go
207 away.

208

209 And I was very good at school. I didn't work incredibly hard. I was probably lazy, but it
210 came to me easily enough that I could easily make my way through without ... So, and of
211 course, that makes it easier to enjoy school because there wasn't a great amount of anxiety or
212 pressure. I was good enough that my parents were happy, so they didn't push me to do
213 anything; they said, "You are doing fine, what more can we say."

214

215 **B: Did you do things outside of school?**

216

217 M: Oh, yeah, I did a lot of things. In fact, looking back as now ... I started teaching very early
218 on. I had jobs from very early on. From when I was about fifteen {years old}, I always
219 worked with some kind of outside jobs. And the one thing I have done from very early on is
220 to do extra teaching for younger kids. So I did maths tutoring — it was mostly maths,
221 sometimes physics — tutoring, typically for pupils who were a year or two below me, for
222 money. So there was always some kind of ads in the paper where they looked for someone to
223 help out, you know, do some extra maths tutoring for children. That was one of my very
224 regular afternoon jobs, to earn some money. And then, of course — I realized it only much
225 later — that I probably learned at least as much as the kids I was teaching, probably more, I
226 would say. It's a great reinforcement, of course.

227

228 I had all sorts of other jobs as well. I delivered newspapers. I worked in a strawberry-picking
229 field. Washing cars. And all sorts of things. But the tutoring, the maths, was probably the
230 most constant and on-going.

231

232 And then one of my very influential things is that when I was in year ten, my school got their
233 first computer. So ... and then that whole connection with computer science started. So we
234 were the first year in our school that could choose computer science as a subject.

235

236 **B: What year was this, do you remember?**

237

238 M: Yes, it was in year ten, just before I went into year eleven, so that must have been in 1980. Or
239 1981. So the school bought an Apple IIe. And I had started programming out of school just
240 before that, another half-year before that. I had a friend who was a couple of years older and
241 he was given a computer that didn't work. It was broken. It was called a KIM. It was

242 essentially just a memory board, without a case. It was just the motherboard and it had a
243 keyboard on there like a calculator; just a number pad with hexadecimal numbers and a six-
244 digit display. And it didn't work. But he knew something about electronics, so he somehow
245 made it work and then we spent our afternoons trying to program this and we could just type
246 in 6502 assembly code. And we both didn't know anything about the assembly code but we
247 read, started reading, books and doing little things.

248

249 **B: At least it was 6502, so it worked on the Apple.**

250

251 M: Exactly. It was the same processor as the Apple. And so ... we just did that for fun in the
252 afternoon. And then a few months the school got a computer, I thought that was fantastic.
253 And so I chose computer science as a subject. For the last three years in school you can
254 choose your subjects. Until then it's all set and then for the last three years you can drop
255 some subjects and choose what you want to continue. So we were the first year in school that
256 could do computer science. And after a week we knew more than the teacher because he had
257 never done that either. We spent a lot more time at the computer than he did.

258

259 **B: What were you programming in?**

260

261 M: That was BASIC. It was BASIC at first. And then fairly quickly, after only a few weeks or
262 months or so, we switched to Pascal. It was UCSD Pascal. And fairly quickly the school got
263 the second computer, then we had two, and then it sort of grew from there.

264

265 **B: How many of you were there in the computer science class? Because one Apple IIe ...**

266

267 M: There were about twelve students or so.

268 [19:59]

269 **B: How did you share time? That's real timesharing!**

270

271 M: Yeah, that's real timesharing. We just went in there in the afternoon. We could go into the
272 room in the afternoon. School in Germany is typically only until about 1 pm or so and then
273 school is out in the afternoon, you are free. You have homework to do, but certainly a lot
274 more free time than my children now have. I now live in England and my children go to
275 school in England and they come home from school at 4:30 or so and then they do another
276 two hours of homework. They really work them quite hard. I was always running around in
277 the afternoon, playing. So after one o'clock or so essentially school was out, but they let us
278 into the room, so we often sat there in the afternoon. You just had to find a time when no one
279 else was there. But in this group of twelve — those twelve pupils who took this — there were
280 maybe five or so who really caught the bug and spent a lot of time in that room
281 programming.

282

283 **B: Have you kept in contact with any of those students?**

284

285 M: The one friend who got me into it, the one who had this first computer, I'm still in contact
286 with him. He's still a good friend. He is a software engineer now, so he also stayed close to
287 the field. And is still one of my oldest friends.

288

289 **B: Were they all boys in the class?**

290

291 M: I think so. I think they were all boys. It was a coed school, so there were girls in school, but I
292 think in the computer science class ... I think they were all boys, probably.

293

294 **B: You were saying that in your early years, teachers made a huge difference. But the**
295 **computing teacher didn't know computing — but did that teacher also make a**
296 **difference in your life?**

297

298 M: Yes, he was ... I liked him and he was ... I enjoyed going there. Well, first of all I enjoyed
299 the subject, I liked programming, I fairly quickly started to love programming. And he did
300 some interesting things. But mostly, I think, his contribution was to get out of the way and let
301 us do what we wanted to do. He realized, obviously, that we were doing ... that we learned
302 something, that we were doing things that were educationally useful, and he just let us get on
303 with it and gave us a lot of freedom.

304

305 **B: Had he been a science or maths teacher?**

306

307 M: Yeah, he was a maths and physics teacher. And so they got just told that they had to teach
308 computer science now. And ...

309

310 **B: Then you are at the stage when you have to start thinking about university. How did**
311 **you go about that process?**

312

313 M: I decided fairly early on that I wanted to go to university and I just wanted to continue
314 learning. There was a break, though, because there is compulsory military service in
315 Germany, or there was at the time. I didn't and ... but there is also a right, you can object,
316 you can be — and I was a conscientious objector — and then you do some civil service
317 instead. So you can choose this, you can apply anyway, and then there's a process you have
318 to ... there is actually a trial set up where you have to justify this. It's a hurdle but ... so you
319 can do some social service instead, which I did. And so that was ...

320

321 **B: What did you do?**

322

323 M: I worked in a kindergarten for disabled children for eighteen months.

324

325 **B: How did that affect you?**

326

327 M: It was great at first. I really enjoyed it because that's the first time I really had responsibility
328 for other people and I felt like I was doing really useful work. I learned a lot about that kind
329 of work, interacting with people, and I enjoyed it. But at the end also I was really looking
330 forward to go back to university, to go back to learning, and to actually learn something. I
331 was ... I think it was good for me because I was ... at the end of the time I was really keen to
332 go back to learning something. I think had I gone on straight from school I wouldn't have
333 had this sort hunger for learning that I had. Even though I enjoyed the time at that

334 kindergarten, doing that work, at the end I thought I needed something more intellectual,
335 intellectually stimulating again. And because it's eighteen months, essentially I was ... it was
336 a two-year gap between finishing school and then starting university.
337

338 **B: How did you choose the university?**
339

340 M: Essentially just by being in my town. I didn't want to move. I had a very naïve approach to
341 do that. I just applied to the university that was in my hometown because it was there. I had
342 no idea about what it was like. And when I see now what our students do — looking at
343 league tables, looking around, going to open days at different universities, and getting all this
344 information and selecting — I did none of that. I just went to the one university that was in
345 my hometown and went there by default. My parents stayed completely out of it; they didn't
346 say anything about it either. The more interesting choice for me was the subject because I
347 was for a while ... I was sort of debating to study art. I wanted to do painting. Or computer
348 science. And I ...

349 [25:16]

350 **B: This is the first you have mentioned you and art. Now you talked about your sister and**
351 **dance ...**
352

353 M: Yes. I was painting and drawing a lot at the time. You can ... in your last three years of
354 school, you can chose two major subjects. That way you have double the amount of times so
355 you can specialize in two subjects. And for me that was maths and creative arts. And I ...
356 actually, I really wanted to paint. And I did a lot of painting at the time, when I was in
357 school. And then I was debating for years whether I should study art or computer science,
358 those were the two things that most interested me. And ... I really wanted to do both. Then I
359 thought, "OK, I can probably do that better when I study computer science." Because I
360 thought I could paint in my spare time as an amateur. You know, you can do that even
361 though you don't have a formal education. Whereas, computer science without a proper
362 education, I thought, "It's hard, you don't get anywhere teaching that to yourself, doing that
363 on your own is much harder." So I thought — I was determined to both — and I thought,
364 "OK, then I'll learn computer science properly and I can still paint" — which at the end I
365 stopped doing. It was ... I haven't painted for a long time now. But back then I thought I
366 would. And actually it turned out that I ... pretty much after just a few years stopped doing
367 that ... at least as proper paintings. I still do all the graphics for our project now. I still like
368 playing with Photoshop. And there's a tiny remnant of my artistic streak flowing, but it has
369 pretty much disappeared. But at the time it was a big question for me.
370

371 **B: Hmm. You gave a talk today {March 7, 2013 at the SIGCSE Symposium} that people**
372 **reading the transcript, you received the Outstanding Educator Award and gave a talk.**
373 **And in that talk you showed photos of your engineering notebook that you worked on**
374 **and you also commented about how the color got into your work and the shading, and**
375 **so a little bit of that art did come out. And I'm so glad you talked about it.**
376

377 M: I still like doing interface design. And there is a lot of aesthetics and a lot of visual ...
378 something that's hard to put your finger on, some aesthetic aspects coming in that really are
379 very subjective, that are still somewhat related to that maybe.

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B: So you are in the university in Bremen and you now ... tell us more about when you made your choice and what kind of courses you took, what were the influences there, and what you were doing with all your time.

M: So I started studying computer science there and the degree structure in Germany, especially at the time, but partially still today, is a lot more open and flexible than in the Anglo-Saxon countries. For example in the UK where I now work, there is essentially a fixed timetable that students have to do. You get told what subjects to take and which year. The first year there are no electives at all. And then you have the other years there are some electives, but you get told exactly how many subjects to do, when to do them, and so on. I guess in the US it is somewhat similar.

In Germany there was none of that at all. You just get told, “To get your degree you have to have this many subjects in this area” and that’s it. No one tells you when and how quickly to do that. There is sort of a nominal workload and study time, so you can finish the degree if you do a full workload in five years. There was no equivalent at that time of a bachelor’s degree, there was only a five-year degree that’s roughly equivalent to a Masters, there just was no shorter degree. But no one cares about when and in which order and how quickly you do this. So no one tells you how many subjects to take in a year. A full workload would be as it is now in our university, four subjects per semester. But sometimes I did only two or three subjects or sometimes I did a subject that had nothing to do with my degree program. I did French and philosophy, just because you could.

[29:41]

When you were in the university at the time in Germany, once you were a student you could go to any subject in any subject you want. So I attended lectures in other subjects just because I found it interesting, but contributed nothing to my degree. And I was in no hurry to finish my degree. So even though the nominal study time is five years, the average time that people actually take is six-and-a-half years. And some are taking longer. It’s a very open, very free system. No one really tells you what to do when. You are really expected to take care of it yourself and make your own life plan. So, there’s no limit of time, how long you take until you ... as soon as you ... as long as you get your subjects together at the end you can then apply for the final examinations and if you’ve proven that you’ve done the right amount of modules and do your degree examinations at the end.

I enjoyed studying. I enjoyed being there. I did that for quite some time. I had some teachers that were ... some professors that were very influential. The ones I liked most were the ones that talked a bit, sort of beyond the edges of computer science. There was one who talked a lot about art and philosophy and he was a very interesting person. He taught us programming, but he made all these connections to other fields. That is what fascinated me most, those people who always had the broader view of things, they were my favorite teachers. I had some of them.

B: How did you choose what to do next? How long did it take you? You said that ...

M: I studied for six-and-a-half years.

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B: So you took ...

M: In Bremen the degree program had a very strong project-based component in it, so there is a software development project that lasts ... it goes over two years with a group of about twenty students and a professor and some research assistants. So you are in a group with these twenty, twenty-five people for two years and build a system. And they are fairly big systems. They are systems that, at the beginning, when you first read the specification, sounds impossible. They're real proper research systems. And out of this project group, the professor, Leslie Keedy was his name ...

B: Could you spell that for me?

M: Keedy, that's K double-E D Y. Leslie. He is English, but he had been in Australia before then. And then came to Germany to my university and started teaching there and I did the project with him. So I was working in his research group. And from then, through his Australian connections, one of his Australian ex-Ph.D. students, who was now a professor himself, came to visit in Germany. He had this Australian connection. And that is how I ended up in Australia eventually. When I got to the end of my degree, they told me about a scholarship program. He said, "There's this scholarship you can apply for to go for a year overseas if you want. We would welcome you to come to Australia and visit if you get this scholarship." And the name of the Australian connection is John Rosenberg, who was very influential in my career because he became my Ph.D. supervisor later. So John invited me to Australia and he said ...

B: Where was John at the time?

M: He was at Sydney University in Sydney. I applied for that scholarship and he wrote me a nice supporting letter. I got the scholarship from a German academic exchange program called DAAD, which funds scholarships for overseas.

B: Does this count as part of your six-and-a-half years?

M: No, that is after that. So after ... I did that immediately after finishing my degree.

So I ... at that time, when I got my degree, when I finished my computer science degree in Germany, I didn't actually know really what I wanted to do. I was ... I had no real plan. I knew I wanted to do something with computer science, but I didn't have a more concrete idea. Then this chance of just going overseas for a year. And that was ... the plan was just to work in a research group for a year as a sort of research assistant. But it had no formal goals. I wasn't enrolled in any qualification. I wasn't on any degree program. I just saw that as a year out working in a computer science area, but going overseas and having a holiday at the same time. So I ... that suited me very well, because I didn't really know what I wanted to do, but I knew I liked being at university. I liked this kind of work, I enjoyed that.

[35:06]

471 So I applied and got that scholarship and then went to Australia for what was planned for ten
472 months, that was the length of the scholarship. And I worked with John Rosenberg and his
473 group on implementing an operating system. It was a distributed object-oriented object
474 operating system. So I had a ... that was one of my areas of interest, was operating systems,
475 at the time. Object orientation and operating systems. And so I just wrote code for ten
476 months. But he also got me into teaching a bit. So he was teaching the operating systems
477 lecture at the university and I first took some classes and then he let me do some of the
478 lectures. So he ... it was a real sort of apprenticeship relationship. He ... really sort of got ...
479 sort of showed me the ropes of being an academic essentially. And I learned a lot from that.
480 At the end I decided that I wanted to stay. And so I applied then at the end of my ten months
481 to do a Ph.D. at Sydney University and I stayed in Australia and started a Ph.D. there. And
482 John became my Ph.D. supervisor. That's how I ended up in Australia. And these planned
483 ten months at the end became ten years. I was in Australia for ten years.
484

485 **B: Were you at Sydney the whole time?**

486
487 M: No, I was in Sydney the first five years and then moved to Melbourne, to Monash University.
488

489 **B: To Monash, yeah.**

490
491 M: And that was essentially following John. John got a position at Monash, so he moved to
492 Monash. And at that time I was in the middle of my Ph.D. and I decided to move as well, to
493 continue working with him, to continue my Ph.D. under his supervision. So I then moved to
494 Monash with John as well.
495

496 **B: But your Ph.D. is from ... ?**

497
498 M: The Ph.D. is still from Sydney University, so I remained enrolled at Sydney University with
499 my Ph.D., but was physically sitting in Melbourne, but that was ... so the last two years I was
500 doing a Sydney Ph.D., but I was located in Melbourne. Because I was closer to my
501 supervisor it was much, much easier work. But I got my Ph.D. from Sydney University and
502 then worked at Monash University then afterwards. Also in the last few years of the Ph.D. ...
503

504 **B: So were you ... were you teaching as well the whole time?**

505
506 M: Yeah, I was teaching the whole ... so it was the whole time during the Ph.D., from the
507 beginning on, I had a — what was it called? — research associate position, where you are
508 expected to teach with half of your time and have the other half of your time for your
509 research work, so for the Ph.D. work. So I was teaching the whole time while I was there.
510

511 **B: What were your favorite things to teach?**

512
513 M: Programming. It was ... at the beginning it was very clearly programming. I really just liked
514 coding and teaching about coding. And at first I was supervising classes that were to go with
515 the lectures, but I very quickly started giving lectures as well. Sydney University was just
516 redesigning the whole first year programming teaching at the time and started a problem-

517 based learning approach. There was a lot of educational, pedagogical discussions going on
518 and I became interested in the pedagogical side of things. That is also how my Ph.D. topic
519 came about. I first decided that I wanted to do a Ph.D., without knowing actually what I
520 wanted to do. So I ... and John said, "OK, I'll supervise you. No matter what you are doing,
521 just pick something." In retrospect, now that I am supervising Ph.D.s myself, I'm astonished
522 that he did that. I thought it was very brave.
523

524 So I spent a couple of months thinking and looking around, trying to think of a project, of
525 something to do. And at the time there was a big discussion in the department about the first
526 programming language, you know, what they We were teaching Pascal at the time and
527 everyone felt that that became outdated, that wasn't ... they had to change. It was getting too
528 old. And most people also thought it should be something object-oriented. And then that's
529 where the agreement stopped. No one could agree on which language it should be. And there
530 was a big discussion. There was a working group established to look at different options and
531 different programming languages. And I looked into that. My opinion was that I didn't really
532 like any of them and that was in the time when I was thinking about a Ph.D. project. So I
533 thought, "Okay, I'll make my own."

534 [39:58]

535 **B: So was Blue your idea?**

536

537 M: Yes, Blue was ... that was ...

538

539 **B: Totally your idea.**

540

541 M: That was my idea. I went to John and said, "I want to design a programming language for
542 beginners, an object-oriented programming language for beginners. To teach object
543 orientation to beginners." And at the beginning I was just thinking about a language. Now,
544 looking back, the environment was ... is, now in my professional history, a much more
545 important part. That came a bit later when I then started to analyze what the requirements
546 were, what I really wanted this language to be. And I realized fairly quickly that the
547 programming environment is a major aspect of that, an important influence. And so that was
548 ... but that was just one of the list of criteria at first, that it has to have a good programming
549 environment. So that became part of it. In my mind it was always one thing.
550

551 **B: I'm going to stop that part of the academic because we only have a couple more minutes**
552 **left. We might consider putting your talk from today to kind of fill the interstice ...**

553

554 M: Yep.

555

556 **B: ... and I will ask you some questions that have nothing to do with that portion of your**
557 **life. Just some more general ... you kind of did share some of your teaching philosophy**
558 **in the talk today. Can you summarize your teaching philosophy in two sentences?**

559

560 M: {Sighs} I ... that's hard. That's a very hard question. It certainly would be different now
561 from what I would have said then.
562

563 **B: Okay. Two sentences, one then and one now. {long pause} How did you change?**
564

565 M: Well, I ... then I was much more focused on the technical side of things. So back then, I
566 would have said I wanted to teach the underlying principles in a way that people can really
567 understand the principles and apply them, become competent in whatever they are doing.
568 Away from the rote learning to really a proper understanding of the concepts.
569

570 Now I would consider that secondary, even in, say, what refolder is. I want to inspire and
571 create joy and motivation. I think once they're hooked, once they actually ... once they like
572 what they are doing, then you can teach them anything. So I think the most important thing at
573 the moment I would see is a role model, to show the joy that programming can bring and
574 show the fun side of it. I think that's the most important part for me now. And everything
575 technical is secondary.
576

577 **B: Thank you. You did it! You got it into the short period of time.**
578

579 **We have several other things I'd like to talk to you about. Are you comfortable in**
580 **continuing this in a phone conversation?**
581

582 M: Yes, that would be a good idea.
583

584 **B: So let me ... think about what we've talked about or what you talked about today. And**
585 **I'll take a little video snippet.**
586

587 **So we can ... I can thank you for this part of the conversation. Is there one word that**
588 **you would like to close today with, one little comment that you didn't get to say and you**
589 **were really dying to say?**
590

591 M: No, I don't think there's...
592

593 **B: OK, so we can continue some other day on this one. I really ... I know how busy you**
594 **were at the conference, and I am just grateful for this hour, so thank you very much.**
595

596 M: Thank you.
597

597 [43:25]

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599 *****

600 **PART II July 10, 2013 via Skype Michael is in England, Barbara is in Blue Ridge, GA USA**
601

602 **B: This is a continuation of an interview with Michael Kölling of Kent University in**
603 **Canterbury, England. The interview began in Denver, Colorado, on March 8th, 2013. It**
604 **is being conducted by Barbara Boucher Owens as part of the Computing Educators**
605 **Oral History Project. This continuation is being conducted via Skype on July 10th, 2013.**
606 **Michael is in England and Barbara is in Blue Ridge, GA, USA.**
607

608 **Good afternoon to you, Michael. Welcome back.**

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M: Good morning to you.

B: Thank you! Welcome back to this interview. When we stopped for a short pause of four months {laughs} you had just finished your Ph.D. {as part of the interview narrative} and you were staying on in Melbourne. I asked you a few questions about teaching philosophy after that. But I'd like to go back to Melbourne. Talk about the young Ph.D., the vision for the future, what you did and how that pathway was influenced by people, students, place, family. Could you talk a bit about it?

[44:47]

M: Uhm, yes. So, in my Ph.D., as I said — I think I said that over the end of the previous part of this interview — was about developing Blue as a language and environment for education. And that was very much influenced by my experience in teaching. I had been an instructor at the university from my student days on and I was always a bit unhappy with the toolsets that were there. So when I was then searching for a Ph.D. topic that is what came to mind. So that was ... it came very much out of this personal need, because I wanted to have the tools. And so that led to the development of Blue, which was my Ph.D. topic.

And then I was very lucky that the university where I did that, the University of Sydney, actually adopted Blue for first year teaching and used it for two years. So I got very good support from the department there in developing it. And I actually got real users. So the whole university department used the system. And that was, of course, for me, being a Ph.D. student in my XX, very exciting and a great opportunity. And that was great motivation, of course, in ... to work hard, to know that there would be students. And I knew when I was working on it that next year the students would be using it. So the department made the decision before it was entirely finished. An astounding feat of optimism that it would all work out. But it did!

B: And the question ... you were though in Melbourne at the time. Is that correct?

M: No, that came after. So I ...

B: Oh.

M: That was during my Ph.D. My first few years of the Ph.D. I was in Sydney — at Sydney University in Sydney — and that's also when the department started to use ...

B: OK.

M: Then I went to Melbourne just before finishing my Ph.D. I went to Melbourne and the last year or so of my Ph.D. I was in Melbourne, but I was still enrolled for the Ph.D. in Sydney. My supervisor, John Rosenberg, he went to Melbourne. He changed jobs and became dean of the faculty in Melbourne. And so I wanted to stay close to my supervisor, to work more efficiently. So I continued to work and was still enrolled in Sydney, but then living in Melbourne and starting to work at Monash in Melbourne.

655 **B: OK. How did your career at Melbourne develop?**

656

657 M: That went very well. It was a very interesting place to work and they had It is a very large
658 university ... it's, I believe, Australia's largest university, Monash University. And they had
659 a whole handful of different computing departments. There was a computer science
660 department. The one I was in was focused more on software engineering, so really sort of
661 software development focus. So there was a software engineering department. There was also
662 in the department of IT, that also had library sciences in it. And so it was an interesting place.
663 It was a very large place to work in.

664

665 So I got a position there. As — what was it at first? I think it was probably associate lecturer,
666 then lecturer later on. And that was ... it was an interesting move. I continued working on
667 Blue first, during my Ph.D., and then fairly soon after on BlueJ, which is a successor system.
668 And that was quite ... well, supported by the head of department there as well, so that was
669 very good.

670

671 **B: I see by your vita that you went from Melbourne to Denmark.**

672

673 M: Yes. That ...

674

675 **B: How did that transpire?**

676

677 M: I was in Melbourne for probably five years or so. A bit shorter, four years, somewhere
678 thereabouts. It doesn't matter exactly. So I was in Melbourne for a while and working there.
679 And in terms of work that went very well. So we started BlueJ as a project. That was a
680 success. Then I came to the end of my Ph.D. Then there was a question of what to do next.
681 The Blue project was still interesting to me. And so I was wondering ... we had exactly two
682 options Sorry, I'm not directly answering your question because I'm getting pulled, I'll
683 get there in a minute.

684 [49:52]

685 **B: That's fine.**

686

687 M: Just keep things in order, chronological order. So when the Ph.D. was finished and I was
688 thinking about what to do, I didn't really want to drop the Blue system. It was an interesting
689 project, and we had users and I thought it was interesting work. And at the same time Java
690 just become popular. So that was in about 1999 for the {indecipherable} system. It had been
691 out for four years or so. It was obviously becoming very popular. And so we had the choice
692 of either continuing with Blue, which was an academic language, and we thought that will
693 always remain an academic niche project and people would pat you on the back and say,
694 "Yes, good work" but then they'd go and use something else.

695

696 Or the other option was to throw away our language, hard at the moment, and use Java
697 instead and build a Blue-like environment for it. So we could use our environment and throw
698 away the language, and rebuild it for Java. And that is what became BlueJ. We decided that's
699 the more interesting option because that way we dropped one-half of our project, but bring
700 the other half out and actually get people to use it, real users. Because Java didn't have a very

701 convincing educational environment. We thought that something in that space where no one
702 had done anything, that we could do something new. And that is what we did. That became
703 slowly somewhat popular. Some people started using it and then it had already started in
704 Australia. So for my professional career that was probably the most important step for me.
705 Because BlueJ was a successful project in the sense that it had real users and eventually, after
706 some years, a fairly large number of real users. For my professional development that was
707 very important.

708

709 **B: Can I ask a question quick? What do you consider a “real” user?**

710

711 M: A real user is someone who is not your friend who is using it to do you a favor.

712

713 **B: {laughs} So it still could be students, but not necessarily professional programmers?**

714

715 M: I mean a real user is someone who uses it because they really want to use your software and
716 not just to play around or to evaluate it, but someone who is actually ... has an interest in
717 using it and would ...

718

719 **B: OK.**

720

721 M: ... like to achieve something for themselves. Because students are very, most definitely in
722 my mind, real users. They are using it because they want to learn something or, well,
723 sometimes because they are told to use it, because their teacher thinks it's the way to

724

725 I mean people who don't use it just for ... to evaluate it or to ... because you have asked
726 them to. Someone who is unconnected and uses it because they want it. That has driven me
727 ever since. It has from the beginning ... from the very beginning, since I've developed
728 software, I got a real kick out of having real users. Not just build something that three other
729 researchers look at, which often happens in university projects. A lot of people do really
730 fascinating, great, interesting work, but it's then a handful of other researchers who actually
731 hear about it. And I got real satisfaction out of having people use my software. It's just
732 personally really satisfying, it's good fun. If you put a lot of effort into building something,
733 then to know that it actually has an impact, that someone actually ... that it matters to
734 someone, that it makes a difference for someone. And so having BlueJ actually becoming
735 fairly popular — and popular means at the beginning some hundred people using it and I
736 thought that was a great number. At the moment we have really over ten million downloads.
737 So it's grown a bit.

738

739 **B: Whoa!**

740

741 M: {faded sounds during technical difficulties}

742

743 **B: We're losing the sound. Michael — I just lost the sound.**

744

745 M: {more faded sounds} Is the sound back now?

746

747 **B: Now it is. Wup! I don't know if it's here or there.**

748

749 M: I haven't touched anything here so I don't know why that ...

750

751 **B: Yeah, it's OK now.**

752

753 M: So I was saying that at first, when we had the first hundred users or so, I was very excited,
754 really. It was great to see that people were actually using it. And so professionally, for me,
755 BlueJ, because it was the first project that became really big, where there were large user
756 numbers, a lot of interest, for my professional career that was a very important step, of
757 course. It was also what my first papers were about. My first presentations were about Blue,
758 and then BlueJ. So that this ... my whole career started with those two systems, Blue and
759 BlueJ. And that all happened ... the first few years of that was still in Australia, at Monash.

760 [55:18]

761 And then, as you said, I went to Denmark. And the reason was just that by that time I had
762 children. During my Ph.D. my first daughter was born and then a bit after my second
763 daughter. And I decided at some stage that I wanted to get my family, my parents and my
764 children, closer together. Because my parents were still in northern Germany and we lived in
765 Australia and I wanted my parents and my children to be able to meet more regularly. So we
766 decided to move to ... here, to northern Europe. First we looked at northern Germany, but
767 then it turned out Denmark was close enough, so ...

768

769 **B: Was your wife from Australia or ...?**

770

771 M: Yes, she was Australian. And moved, we moved all together then to Denmark. So it's still ...
772 looking from over there, maybe it sounds funny because it's still a different country, but it's
773 only a few hours driving, so it's close enough to visit on a weekend easily.

774

775 So I went to Denmark for private reasons and the ... professionally, that collaboration with
776 Australia continued. And for a long time, the BlueJ project was split and we had some people
777 working on it in Australia, some in Denmark. And then a little bit later {faded sound} the
778 University of Kent also became involved through Ian Utting, before I was {faded sounds}.
779 For a while it was three sites that collaborated on the project.

780

781 **B: OK. What was the climate like in Denmark? Were there professors that you worked
782 with there? Or were you the lone professor on BlueJ?**

783

784 M: On BlueJ I was the only one. There were other people working on software engineering more
785 generally, and especially some ubiquitous computing. And for a while I collaborated with
786 them a bit and was considering moving a bit more into a new area and ... expanding a bit out
787 of the computing education area into more traditional software engineering and programming
788 languages area again. {faded sounds} computing education was really through languages; I
789 was initially interested just in programming languages and it was just a coincidence that the
790 language I designed was for teaching. For me, the — initially, when I started — the
791 interesting bit was language design, not ... about teaching, I knew very little, I had no formal
792 education, no background in teaching. So that was ... I saw myself always as a software

793 engineer, a language designer. So that ... for a while I was going back to that and getting out
794 of that education bit a little bit and going back.

795
796 That at the end hasn't happened. The ... education, and especially BlueJ, and there was then
797 a follow-on project I started in Denmark called Greenfoot, another education project. They
798 both became so successful and interesting that they actually continued to take up all of my
799 time. So in Denmark, in the education space, I was the only one working there. I went to a
800 very small, new computer engineering institute that was at the time ... had only been founded
801 a few years before. The idea was to try to build up something there. And eventually that
802 didn't work out as well as I hoped. And so I stayed in Denmark for only three years and then
803 I moved on.

804
805 **B: So it was your contact with Ian that has started this last segment of your career at**
806 **Kent? Is that partly ... ?**

807
808 M: Yes, that was part of it and part of it was coincidence. When I decided to move on I looked
809 around for work somewhere in northern Europe. I wanted to stay in the area and I wanted ...
810 I didn't want to learn yet another language. I had just learned Danish somewhat, never really
811 properly fluently, always only spoke ... always fairly badly anyway. I didn't want another
812 language, so I looked only in English- and German-speaking areas.

813 [59:55]

814 And then at Kent a good position came up and I knew a couple of people there. Ian was one
815 of them, through the BlueJ project. I also knew David Barnes and I had written a book
816 together with him.

817
818 **B: Right.**

819
820 M: He is at the University of Kent, and so there was another contact. Somewhat coincidentally, I
821 met him at a SIGCSE conference, actually, where he approached me because he wanted to
822 write a book. And he said would I mind if he writes a book using BlueJ. And at the time
823 {faded sounds} but I am also planning to write a book about BlueJ, but we'll just keep it
824 separate. I said I'm happy to give him information that he needs, but he should just be aware
825 that he'll be in competition, I will also be writing a book. And it happened that I never got it
826 off the ground. I just didn't manage to find the time to get started and {faded sounds} my
827 publisher. He had a publisher, but they said, "Well, a book about BlueJ isn't interesting." My
828 publisher was pushing me and wanted the book, but I didn't get it done. So finally David
829 said, "Let's band together and write it together." And that worked very well.

830
831 **B: Wonderful!**

832
833 M: So that had happened before I went to Kent already. So I had two contacts there. I had really
834 worked successfully with David, we actually managed to write the book and get it out. That
835 was a big step for me. And it was a very nice collaboration. David's a very nice guy. I knew
836 Ian. So I knew a few people. And then this job came up, so I applied and I got it. And then I
837 moved to University of Kent. That's now eight-and-a-half years ago. So I ended up in there,

838 but since it's one of my longer stints at the university without moving around. I had moved
839 around a bit before, but now I'm fairly well settled.

840

841 **B: Can we change ...? A couple things. Can ... are you still teaching students face-to-face**
842 **in addition to working on your Greenfoot project?**

843

844 M: I've got a standard academic position here as a professor, which means research and
845 teaching. I do a normal teaching load. So I ... for the first few years here, I often taught our
846 introductory programming course. The last ... I don't know, two or three years or so, I'm not
847 doing that any more. I had a sabbatical year and handed that over to someone else. And so
848 now I am teaching at the moment ... I'm teaching three courses per year. I'm teaching an
849 HCI course and HCI is one of the subjects I really, really like to teach. I find it really very
850 interesting. And it's not ... in many computing courses it's not very well covered. It's often
851 overlooked, probably tacked on to the end. I find it really fascinating, I like HCI. So I teach
852 that jointly with Sally Fincher. We do a lot of team teaching at our department, so we share
853 the teaching of that course.

854

855 And I teach a kind of tools course, which is a sort of small course, teaching students about
856 professional development tools: profilers and source repository systems and
857 internationalization, deployment tools. So it is a very practical course.

858

859 And then, just new for next year, I will be teaching a foundations course, we call that. The
860 year we are now offering before our first year, for students who don't quite have the
861 requirements to take an Intro {course} that the first year. For most of them it is language —
862 they don't have sufficient English language skills. So they {faded sounds}, where half their
863 time they are learning English and the other half they start something to do with their subject.
864 So there I'll be using Greenfoot to give them a gentle introduction to some programming
865 while they brush up on English before they then get into our first year.

866

867 **B: Is that course ... each department has a variant on that course, is that what you're**
868 **saying?**

869

870 M: Yeah, there is one central unit in the university that coordinates them, but they get people
871 from different departments to offer subject-specific courses in them.

872

873 **B: Hmm! Very interesting.**

874

875 M: We are just starting that, that's new. Because we get a lot of interest from international
876 students who don't quite fulfill our requirements, entry requirements. So we give them a
877 chance to come here and {faded sounds} themselves up to scratch and then start.

878

879 **B: Hmm. How does your career path, the structure ... ? Like here in the US, we do**
880 **assistant professor, associate and full professor. Do you have the same career track?**

881

882 M: It is quite similar. So here it is ... we have one more step. It is usually assistant lecturer,
883 lecturer, senior lecturer, reader, and then full professor. So we've got five steps. It's a fairly

884 gradual progression. And ... in principle quite similar in the US, but the steps are slightly
885 different.

886 [65:11]

887 **B: So did you start at Kent? At what level did you start?**

888

889 M: I started as a senior lecturer here, when I came here and was then promoted to professor a
890 few years ago.

891

892 **B: OK. Thank you.**

893

894 **Part of what I wanted to talk about in this pathways ... can you talk about — you**
895 **alluded to — one of the benefits of a professional organization was that you met David**
896 **Barnes at SIGCE. And I like to hear those kinds of things. But can you tell me what**
897 **professional organizations you belong to and how they affect your career?**

898

899 M: I am a member of both the ACM and SIGCSE, obviously within that, and of the BCS, that is
900 the British Computer Society. That's the only two professional associations that I am a
901 member of. So the British Computer Society, obviously is a ... is locally relevant here in the
902 country, in England.

903

904 Over the last three or four years or so, they have been very interesting because I work here in
905 a group in England called Computing at Schools. And we are trying to get computer science
906 re-introduced in ... at school level, in — what do you call? — high school. Actually no,
907 through the whole range of school from primary. The BCS has become very supportive of
908 that and very involved with it. Before this Computing at Schools development I had fairly
909 little contact with the British Computer Society. I was a member, but wasn't really very
910 actively involved. Since then, because the British Computer Society is very supportive of that
911 work, I have been in regular contact with them. They have been very helpful and very
912 supportive. We met a number of people through this, even though this initiative of
913 Computing at Schools started outside of the British Computer Society, but they then became
914 fairly quickly fairly supportive. So that's the one in the UK, yes.

915

916 **B: It's becoming a model, I think, to us, too. We look at what's going to happen with that**
917 **very interesting program.**

918

919 **What service? You said that you've been involved with them. Is that in a service role?**
920 **You are a advisor, developer ...**

921

922 M: I am formally just a member. I'm not ... I don't have a service role with them. I am very
923 active just in assets, called Computing at Schools, which collaborates with the BCS, but I
924 have no formal role in the BCS or in ACM for that matter.

925

926 **B: Mmm hmm. Can you talk a bit about the ... we are sort of getting to the end of the**
927 **interview. Can you talk about some of the major challenges that you've had in your**
928 **career? What do you think were the biggest stumbling blocks and the things that you**
929 **overcame and how did you do that?**

930

931 M: I always had the impression of my own career that I have always been very lucky that things
932 just happened by chance that opened opportunities for me. My career progressed fairly
933 smoothly without a great amount of planning on my part, it sort of went one step at a time.
934 And ... so I don't ... I now try to think of stumbling blocks or hurdles on the way. There
935 wasn't very much. I always thought I was very, very lucky with the developments as they
936 happened. I mean I've been doing my work always. I've been working away and generally
937 interested in my work and I've been working a lot because I liked to. But then ... somehow
938 always at the right time some opportunity opened to go somewhere.

939 [69:31]

940 **B: It may be that you see those opportunities and seize them.**

941

942 M: Yes, maybe that's the one thing to do to make the most of it. In terms of challenges ... well, I
943 don't know. There's the sort of small-scale, day-to-day things that everyone has, where I
944 think I always don't get quite enough time to do all those things that I would like to do. I
945 have Ph.D. students now who come up with pretty interesting ideas. And I've got more ideas
946 than time to work with them. But that's just normal. Everyone has that. That's not ...

947

948 **B: How many students do you have?**

949

950 M: I've got three Ph.D. students at the moment and a couple of Master's students. And then I
951 have three people who work for me as paid developers on BlueJ and Greenfoot projects.

952

953 **B: Hmm. Good.**

954

955 M: {faded sounds}

956

957 **B: You are so busy with all of that. Do you have any outside interests?**

958

959 M: I do. Actually I live here close to London and I like to go into London and go to the theater
960 and go to concerts and do that quite regularly. Especially now here, in this time of year, it's
961 just ... our summer has just started and I do have a real interest in theater, music, and do
962 those things. So I try ... I actually do try to get out and get away from the screen.

963

964 And then the other thing, obviously, is I have two children. I try to spend time with them and
965 I go round doing things with them. Although that is sort of getting a bit less now. They are
966 getting into the teenage years now and getting to the phase now where they want to do things
967 without me. But I still like to go spend time with them and I go places with them as well.

968

969 **B: What are they interested in? Are they interested in computing?**

970

971 M: They are two girls. Thirteen and fifteen {years old}. When they were younger, when they
972 were still around ten {years old} or so, I showed them a bit. I showed them Scratch
973 {unintelligible} and they loved it and they were good at it. That's gone away, unfortunately.
974 They are now in the phase, the typical teenage phase, where they are with their girlfriends
975 and computing is not really cool and so far {faded sounds} not very much. I think they

976 actually have a genuine interest, especially my older one, in languages and art, and so ... the
977 technical, formal thing is not so much their thing. I am quite happy with that. I am happy that
978 she has seen what it is and can make an informed decision whether she likes it or not. At least
979 she has looked at it and knows what it's about.

980

981 **B: You had early in the interview said that you had done painting and you were trying to**
982 **decide if you were going to be an artist or a computer scientist. Do you do anything with**
983 **your art?**

984

985 M: No, I haven't done anything for decades actually. That was ... when I ... at the time when I
986 started studying, that was a serious consideration. And I thought I was going to do painting
987 and computer science. And I thought, "I can study computer science and then paint in my
988 own time." That has stopped completely. I haven't done that for a long, long time. Every now
989 and then, every few years, I'll think maybe I should try again and start again, but I'm not.

990

991 **B: {chuckles} Do you have a vision for the future, what ... especially with Computing in**
992 **the Schools, how computing may change, how your role or the role of your students**
993 **when they become professors, what do you see happening in the next five years, twenty**
994 **years?**

995

996 M: A challenge is that computing is ... it's reaching everyone in every part of their life.
997 Everyone has phones and iPads and things. The problem is, I think, that the modern presence
998 of computing in people's lives reduces them to being consumers. And I think the hurdle of
999 being a consumer of computing milieu, being able to watch a YouTube video on your iPad,
1000 as I think to actually being a developer, you know, actually a producer, becoming creative, I
1001 think it's getting harder and harder because those tools become so polished, that there's a real
1002 big hurdle that's very hard to cross. When I got my first computer, all you could do with it
1003 was program it. You couldn't do anything but being creative. I think the creative side of
1004 modern gadgets is so well hidden away, that I think that's the challenge. That the kids now
1005 feel they can do everything already, because whatever you want to do, there is an app for
1006 that. There's ... getting them to even understand that you can be creative beyond just using
1007 software, but by developing software, I think it gets harder and harder to get people to see
1008 that.

1009 [74:54]

1010 This bug that we all had in young years, when you discovered programming and you feel
1011 really powerful and suddenly you can do all those things, it's getting quite hard to get people
1012 to experience that. And I think the ... in a paradoxical sense, our computing systems
1013 becoming so prevalent and ubiquitous and polished and are becoming so good — that
1014 computing is everywhere now and so good — is working against us in the sense that it's
1015 much harder and harder, I think, to get people interested in becoming truly creative, and that
1016 means making their own software with computers. I think that will be a challenge. So
1017 somehow ... because the computing systems are so good, so far away from what you can
1018 achieve on your first day, it just seems frustrating to just even try.

1019

1020 **B: Huh. Very interesting. I see what you're saying. Very interesting.**

1021

1022 **The last question — well, there are two last questions. The penultimate question, I**
1023 **guess, is if you were going to give advice to a young person interested in going into**
1024 **computing, and especially a young women, what would you say?**
1025

1026 M: The advice I really think is just to go and give it a try. I think ... that's really the main thing.
1027 There is ... I think there is a huge amount of personal satisfaction you get out of when you
1028 have developed something yourself that you just cannot explain. You cannot tell someone
1029 really. You have to experience it. The one thing you have to overcome is you have to first ...
1030 you have to get yourself to do it once. And once you do it, then you know what we mean.
1031 Once you've felt it, you know. You can't tell people. I think the best thing is to go and do it
1032 and you will see what I mean.
1033

1034 **B: That's good. Thank you.**
1035

1036 **And the final thing I ask people — and many people refuse to answer the question — is**
1037 **if there were one story about you that you hope people will remember, what would you**
1038 **like that to be? I watched you puff your cheeks when I asked that one! {chuckles}**
1039

1040 M: I am ... I hope that people will... I genuinely want to make peoples' lives better. Sometimes
1041 you ask yourself, you know, "Why am I doing all this? What am I here for? Why am I
1042 working so hard? What do I want to be left when I am gone?" Or "How do you want to spend
1043 your time on earth?" I think what you can do is ... you want to be a positive influence. And
1044 in my mind a positive influence is to give people more choices, increase opportunities or
1045 choices for people. And so I hope that with my work I am creating something that allows
1046 some people to do something that they otherwise wouldn't have been able to do. So ... what I
1047 would like people to remember is that I really somehow tried to make a difference.
1048

1049 **B: And that's a wonderful closing story, because one of the first stories you told, about**
1050 **when you were working, was when you worked with people that had severe disabilities,**
1051 **when you were doing your alternative service. And you started your life wanting to**
1052 **make a difference and you're finishing your career — well, you're not finishing, but**
1053 **your mid-career — trying still to make a difference. I think that is a wonderful story to**
1054 **remember — that Michael wants to make a difference, to make peoples' lives better.**
1055 **Correct?**
1056

1057 M: That's right.
1058

1059 **B: Well, thank you for all your contributions and thank you for the time that you have**
1060 **spent with me doing this interview. Don't go away, but I think our interview has come**
1061 **to a close. Is there any last word you want?**
1062

1063 M: Thank you. Thank you for having me.
1064