Computing Educators Oral History Project
An Interview with *Michael Kölling*
Conducted Friday, March 8, 2013
At Denver, Colorado, USA
Interview Conducted by Barbara Boucher Owens

CONTEXT: This is a two part interview. The first part was conducted in a hotel suite living room in Denver where Michael and Barbara were attending the SIGCSE Symposium. Michael had received the 2013 award for Outstanding Contribution to Computing Education and had delivered a keynote address. The continuation took place via SKYPE with Michael in his office in Canterbury and Barbara at her home in Texas.

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 conducted 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. As you can tell from my accent, it is a German name; I am a
9   German. In the English speaking world most people call me Michael. But I am perfectly
10   happy with that. But as it was originally as my parents christened me it was Michael {three
11   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. My mother for the
20   largest part of her career worked as an administrator for the Red Cross and she administered
21   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, high school and then became a school teacher. So she did not
27   go to university. My father didn't finish school. He was thrown out of school in fact.
28
29 **B: There's a story there!**
30
31 M: Yes. So he. The school system in Germany is sort of a tiered system. There is three tiers
32   based on ability. Basically you get sorted into three different kinds of school fairly early on.
33   Only the highest one, it is called gymnasium, in Germany, it is the only one that leads to
34   university entry qualification. He actually started off in that; didn't perform very well and he
35   said he was always the class clown until the teacher had had enough and he was actually
36   thrown out of school and never finished. He didn't finish to the degree that leads to
37   university qualification. But I think in his family that wasn't really a path that he considered
38   very seriously anyway. Both his parent didn't have a very, at least not a university education
39   either. So my generation, my brother, my sister and myself, we are the first generation to go
40   to university.
41
42 **B: So tell me about your brother and sister.**
43
44 M: My brother, so I have an older brother and a younger sister. My brother he did very well in
45   school. He is very smart, very ambitious. In fact he studied computer science before me. He
46   is two years older, but he never finished. He actually wanted to become a pilot and applied
47   to Lufthansa. At the time they didn't hire at all at that time. So he did his second best choice
48   and studied computer science. He got about two years into it and he got a letter from
49   Lufthansa saying they had started hiring again and was he still interested. He aborted his
50   degree and became a pilot. So he is still a pilot for Lufthansa now and very happy with that/
51   So he has a start of a computer science degree and he never finished. And my sister, she's
52   two years younger than me, she also started a degree and never finished, in sociology and
53   decided after some years that that just wasn't for me and she actually works with dance
54   therapy now. So she is quite different from me. My brother is also quite technically thinking,
55   similar to me in the way of thinking. technically thinking, logical. My sister is much more
56   interested in people and emotions and so she always liked dance. So she has a job doing
57   motion therapy and dance therapy and things like this.
58
59 **B: Hmmm. Very interesting. Were your parents technically oriented in their interests,**
60   **avocations?**

61
62 M: Not really. There was nothing much at all. As I said he didn't finish school but he is actually
63   very interested in education. So he started seriously reading in his adult life. He knows a lot,
64   he read a lot. But he says he became interested in learning only after leaving school rather
65   than while he was at school. And so, he's not specifically a technical person. But he gave us
66   all an interest in learning and has certainly encouraged us to learn new things. So I got more
67   generically the interest in lifelong learning from him rather than specific technical things.
68
69 **B: And how about your mother's support of you?**
70
71 M: The same. She certainly saw the value of and supported us going to university. My father
72   thought you know you will never inherit very much from us, but the one thing I'll always do
73   is make sure you can get an education that is as good as you are able to. And so they both
74   really saw the value of that and worked very hard to enable all of us to do what we wanted to
75   do in terms of education. And I studied for a very long time.
76
77 [6:35]
78
79 **B: Let's start that studying path and let's start that first year when you were just a child**
80   **starting school. What kinds of things do you remember? What is outstanding about**
81   **those early years of education? Teachers, courses, playground?**
82
83 M: The most, I think probably the most part of me is that I always liked going to school. I don't
84   remember details exactly of what we did there, what happened there, at least from the very
85   early years. I don't remember much about my teachers. I have sort of vague memories, but I
86   remember the feeling of always looking forward to going to school. So it was obviously a
87   welcoming environment where.. I remember still my first day in school for the first week of
88   school we had only one one-hour lesson and eased into it very gently. I was extremely
89   disappointed because I wanted to have a break, so there was only one lesson and there wasn't
90   a break. I was actually looking forward, my brother had told me how you played with your
91   friends in the break between lessons and there was no between lessons because there was
92   only one lesson. So I was actually looking forward to being in school longer. And I always
93   enjoyed going. And I think that is the important thing for me to see school as something
94   positive and not something that is an obligation, not something you had to do against your
95   will.
96
97 **B: Did you have friends in those early years that liked the same kinds of things you did?**
98   **Do you remember any?**
99
100 M: Oh, yeah. I remember some friends from the really early years. So in Germany the primary
101   school is the first four years of school. So from those years I am not in contact with any of
102   them. But certainly I had a good group of friends at the time.
103
104 **B: So explain the school. Did all the children go to the next school together?**
105

106 M: No At that time after four years you go to secondary school and that is where these three tiers
107 start. On the lowest tier the whole education is only 9 years long. After nine years of school
108 you typically leave and go into an apprenticeship or trade. The second middle tier is ten years
109 long in total. And then also typically you do an apprenticeship where you still have some
110 schooling, typically a few weeks a year, but mostly learn a trade, learn on the job. The
111 highest one, gymnasium, is 13 years in total that ends with university entry qualification. So
112 after four years, you get sorted into one of those things. Looking back at it now, I think it is a
113 fairly harsh system where people make life-changing decisions about children at 11 or so
114 which as a child, even as an adult in Germany I didn't think much about. Now knowing
115 other systems, I find that a harsh system. It isn't like that now; the decision is now made two
116 years later. Primary school is six years in most states in Germany. But then the first four
117 years are together and you get split into these school streams.
118
119 **B: Let's go back, what do you remember about that particular period?**
120
121 M: So primary school, my memory is very vague nothing particular except that I enjoyed the
122 time. I have a much better memory of the secondary school .
123
124 **B: Ok, let's hear about that.**
125
126 [10:25]
127
128 M: We also moved cities. We moved to a different city and I went to a different school so they
129 were entirely different.
130
131 **B: Tell us what was different about the cities.**
132
133 M: I grew up in a small town called Burgdorf near Hanover in Germany that was my primary
134 school time. And around the time I changed to secondary school we moved to Bremen which
135 was further north, close to the coast. Education in Germany is state based. Every state has its
136 own education system and there are differences and that was moving into a different state
137 and a different school system. In Bremen where I moved to they were essentially a half year
138 behind the curriculum compared to where I came from. I've often wondered whether that
139 was actually a very decisive factor for me because suddenly I was very good at school
140 because the first half year was doing things I had already done. It was essentially a half year
141 of just repetition. I was almost a mediocre pupil before then and suddenly I became very
142 good because I heard it all before. Because it is a fact that once you have this it is actually
143 easier to stay at the front. I became a very good pupil from then on. I often wondered if it is
144 really just a coincidence of having moved at that time. Certainly moving the other way
145 around would have been hard. This way around made it very easy for me.
146
147 **B: were there particular courses that.**
148
149 M: Yes I had a very inspirational maths teacher so that's when I started to like maths. And that
150 was only because of that teacher. He was a very nice man to start with, personally, I really
151 liked him. But he also had a really great way of teaching. We had, I remember one year

152   talking about volumes of various shapes. He had a cube. It was a ten centimeter edge length
153   cube. It was a metal cube that had one open side and he told us that the volume of that was
154   exactly one liter. We all knew liter because in Germany drinks come packaged in liters. So
155   you would get a liter of milk and we knew what that looks like. It seemed to not fit, it
156   seemed too small. So people, said no I don't believe that, it will never fit in there so he just in
157   the middle of the lesson sent one of the pupils out to run over to the store and buy a liter of
158   milk and come back and poured it in there. So things like this really stuck in my mind. It was
159   great. He was great. Herr Geiersbach was his name. I really made me see maths as a positive
160   thing because his lessons were so much fun.

161

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

163

164   [13:35]

165

166   M: Yes but it was mostly driven by the teachers. For some time I didn't like English or French
167   because I didn't like the teachers of both of those subjects. Even though, well, I wasn't
168   particularly good at languages either. I later became more competent at it. It wasn't really
169   the subject I didn't like, it was the lessons I didn't like because of the teachers. I was
170   generally interested in just about anything, as long as it was interesting and entertaining. I
171   had that equally with geography. It was incredibly boring because all we did for years was
172   memorize names and borders of places and there was no interesting story behind it so I found
173   it incredibly boring. History and geography in my school time I really found incredibly
174   boring. I started reading about history in my adult life and find it really fascinating now. In
175   school I was not interested at all. But as I said it was driven mostly by teachers, rather than
176   the subjects.

177

178   [15:00]

179

180   **B: Hmmm. Then what came next?**

181

182   M: Then , yes school progressed. In my time it was a single school going from year 5 right
183   through year 13. Often now another change of school today in Germany where the last three
184   years are in a separate school. I was then from year 6 on I was in the same school right to the
185   end. And that was a really good environment I had many friends there. It was a good
186   environment; I always liked going to school to the end that didn't go away. And I was very
187   good at school . I didn't work incredibly hard. I was probably lazy but it came easily to me, I
188   could make my way through without and that makes it easier to enjoy school because it
189   wasn't a great amount of anxiety or pressure. It was good enough that my parents didn't
190   push me to do anything; they said you are doing fine what more can we say.

191

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

193

194   M: Yeah, I did a lot of things. In fact looking back, I guess now I started teaching very early on.
195   I had jobs from very early on . From about 15 I always worked with some outside jobs. The
196   one thing I have done from very early on is to do extra teaching for younger kids. I did
197   tutoring, it was mostly maths, sometimes physics tutoring. I took students maybe a year or

198   two below me for money. There was always some kind of ads in the paper where there was
199   someone to help out or do some extra math tutoring for children. That was one of my regular
200   afternoon jobs too, earn some money. And of course, I found out some time later that I
201   probably learned at least as much as the kids I was teaching, probably more I would say. It
202   was a great reinforcement . I had also other sorts of jobs as well. I had newspapers, I worked
203   on a strawberry farm, digging in a field and washing cars, all sorts of things. The tutoring the
204   maths was probably the most constant and then one of my most influential things was when I
205   was in year 10 my school got the first computer. That whole connection with computer
206   science started. We were the first year in our school that we could choose computer science
207   as a subject.

208

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

210

211   [18:00]

212

213   M: Yes it was in year 10 just before I went into year 11 so it must have been in 1980. Or 81. So
214   the school bought an Apple IIe and I had started programming out of school just before that,
215   another half year before that. I had a friend who was a couple of years older and he was
216   given a computer that didn't work. It was broken. It was a KIM, just a memory board
217   without a case. It was just the motherboard and it had a keyboard on there like a calculator
218   and just a number pad with hexadecimal numbers and a six digit display. And it didn't work.
219   But he knew something about electronics and he somehow made it work and we spent our
220   afternoons trying to program this and we could just type in 6502 assembly code and we both
221   didn't know anything about it but we read, started reading book and do little things.

222

223   **B: It was 6502 so it worked on the Apple.**

224

225   M: Exactly. It was the same processor as the Apple. We just did that for fun in the afternoon and
226   then a few months the school got a computer. It was fantastic and I chose computer science
227   for a subject for the last three years in school. You can choose your subjects. Until then it is
228   all set and for the last three years you can drop some subjects and choose what you want to
229   continue. So we were the first year in school that could do computer science. After a week
230   we knew more than the teacher. He had never done that either. We spent a lot more time at
231   the computer than he did.

232

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

234

235   M: It was BASIC. It was BASIC. At first and then fairly quickly after a few weeks or months
236   we switched to Pascal. It was UCSD Pascal. And fairly quickly the school got a second
237   computer. And then we had two and it grew from there.

238

239   **B: How many of you were there in the computer science class? There was one Apple IIe**

240

241   M: There were about 12 students or so.

242

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

244
245 M: Yeah, that's real timesharing. We just went in there in the afternoon. We would go in the
246   room in the afternoon. School in general was typically only until about 1 pm or so. And
247   school is out in the afternoon you are free. You have homework to do but certainly a lot more
248   free time than my children now have. I live in England and my children go to school in
249   England and they come home from school at 4:30 or so and then they do another two hours
250   of homework. They really work them quite hard. I was always running out in the afternoon
251   playing. So after one o'clock or so essentially school was out but they let us into the room.
252   We often spent the afternoon. You just have to find the time when no one else was there. In
253   this group of 12 pupils there were 5 or so that really caught the bug and spent a lot of time in
254   that room programming.
255
256 **B: Have you kept in contact with any of those students?**
257
258 M: The one friend that got me into this, the one who had this first computer, I'm still in contact
259   with him. He is still a good friend. He is a software engineer now so he also stayed close to
260   the field. And is still one of my oldest friends.
261
262 [21:30]
263
264 **B: Were they all boys in the class?**
265
266 M: I think so, I think they were all boys. There were girls in the school; it was a coed school but
267   in the computer science class I think they were all boys, probably.
268
269 **B: You were saying that in your early years, teachers made a huge difference. But the**
270   **computing teacher didn't know computing but did that teacher also make a difference**
271   **in your life?**
272
273 M: Yes, he was. I liked him and he was. I enjoyed going there. First of all I liked programming I
274   fairly quickly loved programming. He did some interesting things but mostly his contribution
275   was to just get out of the way and let us do what we wanted to do. He realized obviously that
276   we were doing something, that we were learning something, doing things that were
277   educationally useful and he just let us get on with it and gave us a lot of freedom.
278
279 **B: Had he been a science or maths teacher?**
280
281 M: Yeah, he was a maths and physics teacher. And they had just got told that they had to teach
282   computer science now.
283
284 **B: So then you are at the stage where you have to start thinking about university. How did**
285   **you go about that process?**
286
287 M: I decided fairly early on that I wanted to go to university and I wanted to keep on learning.
288   But there was a break because there is compulsory military service in Germany, there was at
289   the time. I didn't because there is also a right that you can object. And I was a conscientious

290   objector. And you do some civil service instead. So you can choose this, you can apply
291   anyway and there's a process. You actually have a trial set up where you have to justify this.
292   It's a hurdle that, so you can do some social service instead. Which I did. So that was
293

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

295

296 M: I worked in a kindergarten for disabled children for 18 months.

297

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

299

300 M: It was great at first. I really enjoyed it because it was the first time I really had responsibility
301   for other people and I felt I was doing really useful work. I learned a lot about that kind of
302   work, interacting with people and I enjoyed it. But at the end also I was really looking
303   forward to going back to university, to go back to learning. I think it was good for me.
304   Because I was at the end of the time I was really keen to go back to learning something. I
305   think had I gone on straight from school I wouldn't have had this hunger for learning that I
306   had. Even though I enjoyed that time at kindergarten doing work, at the end I thought I
307   needed something intellectual, intellectually stimulating again. And because it was 18
308   months it was essentially a two year gap between finishing school and starting university.

309

310 **B: How did you choose the university?**

311

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

320

321 **B: This is the first you have mentioned you and art. You talked about your sister and**
322   **dance.**

323

324 M: Yeah. I was painting and drawing in art a lot of time. In your last two years you can chose
325   another major. You have double the time so you can specialize in two subjects. And for me
326   that was maths and creative arts. And actually I really wanted to paint. And I did a lot of
327   painting at the time I was in school. And I was debating for years whether I should study art
328   or computer science, the two things that most interested me. I really wanted to do both. Then
329   I thought, I can probably do that better and study computer science because I thought I could
330   paint in my spare time as an amateur. You can do that even though you don't have formal
331   education. Whereas, computer science without a proper education, I thought it's hard, you
332   don't get anywhere. Teaching that to yourself, doing that on your own is much harder. So I
333   was determined to both, so I thought , I can learn computer science properly and I can still
334   paint which at the end I stopped doing. I haven't painted for a long time now. But back then I
335   thought I would. Actually it turned out after a few years I stopped doing that., any stuff,

336   proper paintings. I still do all the graphics for our project now. I still like plying with
337   Photoshop. There is a tiny remnant of you know my artistic streak flowing but it has pretty
338   much disappeared. But at the time it was a big question for me.
339

340   [27:10]
341
342   **B: Hmm. You gave a talk today {March 7, 2013 at the SIGCSE Symposium} that people**
343   **reading the transcript , when you received the Outstanding Educator Award and you**
344   **gave a talk. In that talk you showed photos of your engineering notebook that you**
345   **worked on and you also commented about how the color got into your work and the**
346   **shading, and so a little bit of that art did come out. I am so glad you talked about it.**
347
348   M: I still like doing interface design. There is a lot of aesthetics, a lot of visual something that is
349   hard to put your finger on, some aesthetic aspects coming that are really very subjective, that
350   are still somewhat related to that.
351
352   **B: So you are in the university in Bremen and tell us more about when you made your**
353   **choice and what kind of courses you took, what were the influences there and what you**
354   **were doing with all your time.**
355
356   M: So I started studying computer science there and the degree structure in Germany, especially
357   at the time, partially today, is a lot more flexible than in the Anglo Saxon countries.   For
358   example in the UK where I now work there is essentially a fixed timetable that students have
359   to do. You get told what subjects to take and in which year. The first year there are no
360   electives at all. The other years there are some electives but you are told exactly how many
361   subjects to do and when to do them and so on. I guess in the US it is somewhat similar. In
362   Germany there was none of that at all. You just get told to get your degree you have to this
363   many subjects in this area and that's it. No one tells you when and how quickly to do that.
364   There is sort of a nominal study time so you can finish the degree if you do a full workload in
365   five years. There was no equivalent at that time of a bachelor's degree, there was only a five
366   year degree that is roughly equivalent to a masters. There was no shorter degree. But no one
367   cares about when and in which order or how quickly you do this, so no one tells you how
368   many subjects to take in a year. A full workload would be as it is in our university four
369   subjects in a semester but sometimes I did only two or three subjects or sometimes I did a
370   subject that had nothing to do with my degree program. I did French and philosophy just
371   because you could. When you were in the university at the time in Germany once you were a
372   student you could go to any subject in any subject you want. So I attended lectures in any
373   subject just because I found it interesting but contributed nothing to my degree. And I was in
374   no hurry to finish my degree. So even though the nominal study time is five years the
375   average time that people actually take is six and a half years. And some are taking longer. It
376   is a very open, very free system. No one tells you what to do and you are really expected to
377   take care of it yourself., make your own life plan. So, there's no limit as to time how long
378   you take. As long as you get your subjects together at the end you can apply for final
379   examinations and if you prove that you have done the right amount of modules and do your
380   degree examinations at the end. I enjoyed studying; I enjoyed being there. I did that for
381   quite some time.
382
383   [31:00]
384   I had some teachers that were, some professors that were very influential. The ones I liked most
385   were the ones that talked a bit sort of beyond the edges of computer science. There was one

386   that talked about art and computer science. He taught us programming but he made all these
387   connections to other fields. That's what fascinated me most, those people that had a broader
388   view were my favorite teachers.
389
390 **B: How did you choose what to do next? How long did it take you?**
391
392 M: I studied for 6 ½ years. In Bremen the degree program had a very strong project based
393   component in it, so there is a software development project that lasts over 2 years with a
394   group of about 20 students, a professor and some research assistants. So you are in a group
395   with these 20, 25 people for two years and they are pretty big systems. In the beginning it
396   sounds impossible, they're proper research systems, and out of this project with the professor,
397   Professor Keedy was his name
398
399 **B: Could you spell that for me?**
400
401 M: K double E D Y . Leslie. He is English but he had been in Australia before then. And then
402   came to Germany and my university and started teaching there and I did the project with him.
403   I was working in his research group and from then, through his Australian connections, one
404   of his Australian ex-PhD students, who was now a professor himself, came to visit in
405   Germany. He had this Australian connection and that is how I ended up in Australia
406   eventually. When I had got to the end of my degree they told me about a scholarship
407   program. He said, there's this scholarship you can apply for you can go for a year overseas if
408   you want. We would welcome you to come to Australia and visit if you get this scholarship.
409   And the name of the Australian connection is John Rosenberg who was very influential in
410   my career because he became my PhD supervisor later. So John invited me to Australia and
411
412 **B: So where was John at the time?**
413
414 M: He was at Sydney, Sydney University. I applied for that scholarship and he wrote me a nice
415   supporting letter. I got that scholarship from a German academic exchange program called
416   DAAD which funds scholarships for overseas.
417
418 **B: Does this count as part of your 6 ½ years?**
419
420 M: No this is after. I did this after finishing my degree. So at that time when I got my degree
421   when I finished my computer science degree in Germany, I didn't know actually what I
422   really wanted to do. I had no real plan. I knew I wanted to do something with computer
423   science but I didn't have a more concrete idea. Then this chance of just going overseas for a
424   year and the plan was just to work in a research group for a year as a research assistant. But it
425   had no formal goals. I wasn't enrolled in any qualification. I wasn't on any degree program.
426   I just saw it as a year out working in a computer science area but going overseas and having a
427   holiday at the same time. That suited me very well because I didn't really know what I
428   wanted to do but I knew I liked being at university. I liked this kind of work, I enjoyed that.
429   So I applied and got that scholarship and went to Australia for what was planned for ten
430   months, that was the length of the scholarship. I worked with John Rosenberg and his group
431   on implementing an operating system, a distributed object oriented operating system. That

432   was one of my areas of interest, operating systems, object orientation and operating systems.
433   And so I just wrote code for ten months. But he also got me into teaching a bit. He was
434   teaching the operating systems lecture at the university and I first took some classes and then
435   he let me do some of the lectures. It was a real sort of apprenticeship relationship. He really
436   sort of showed me the ropes of being an academic. At the end I decided that I wanted to stay.
437   I applied at the end of my ten months to do a PhD at Sydney University and I stayed in
438   Australia and started a PhD then. And John became my PhD advisor. That's how I ended up
439   in Australia. That planned 10 months became 10 years. I was in Australia for ten years.
440
441   **B: Were you in Sydney the whole time?**
442
443   [36:30]
444
445   M: No, I was in Sydney the first 5 years. Then moved to Melbourne to Monash University and
446   that was essentially following John. John got a position at Monash so he moved to Monash
447   and at that time I was in the middle of my PhD and I decided to move as well, to continue
448   working with him, continue my PhD under his supervision. I then moved to Monash with
449   John.
450
451   **B: Your PhD is from?**
452
453   M: My PhD is from Sydney University so I remained enrolled at Sydney University but my PhD
454   advisor was sitting in Melbourne, so the last two years I was doing a Sydney PhD but I was
455   located in Melbourne. Because I was closer to my supervisor it was much, much easier work.
456   But I got my PhD from Sydney University and then worked at Monash University
457   afterwards.
458
459   **B: Were you teaching?**
460
461   M: I was teaching the whole time from the beginning on. I had a research associate position
462   where you are expected to teach half the time and have the other of the time for your research
463   work, for the PhD work. So I was teaching the whole time.
464
465   **B: What were your favorite things to teach?**
466
467   M: Programming. It was at the beginning it was very clearly programming. I just really liked
468   coding and teaching about coding. At first I was supervising classes, I very quickly started
469   giving lectures as well. Sydney University was just redesigning its whole first year and
470   program teaching at the time and started a problem based learning approach. There was a lot
471   of education, pedagogical discussion going on and I came interested in pedagogical side of
472   things. That is also how my PhD topic came about. I first decided that I wanted to do a PhD
473   without knowing actually what I wanted to do. So I .. and John said ok I'll supervise you. No
474   matter what you are doing, just pick something. In retrospect now that I am supervising PhD
475   students I think that was very brave. I spent a couple of months thinking and going round to
476   think of a project, of something to do. At the time there was a big discussion in the
477   department about the first programming language. We were teaching Pascal at the time and

478 everyone thought that became outdated, they had to change, it was getting too old. Most
479 people thought it should be something object oriented. That's when the agreement stopped.
480 No one could agree on which language it should be. There was a big discussion. There was a
481 working group established to look at different options, programming languages. And I
482 looked into that. My sort of opinion was that I didn't really like any of them and that was the
483 time when I was thinking of a PhD project so I thought, okay I'll make my own.

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

487 M: Yes, it was. I went to John and said I want to design a programming language for beginners,
488 an object-oriented programming language to teach object orientation to beginners. And at
489 the beginning I was just thinking about language. Now looking back the environment was
490 and is now in my professional history much more important. That came a bit later when I
491 began to analyze what the requirements were, what I really wanted this language to be. I
492 realized fairly quickly that the programming environment is a major aspect of and an
493 important influence. But that was just one of the list of criteria that programming
494 environment. That became part of it, in my mind it was always one thing.

496 **B: I could stop that part of the academic because we only have a couple or more minutes**
497 **left. We might consider putting your talk from today to kind of fill the interstice and I**
498 **will ask you some questions that have nothing to do with that portion of your life. Can**
499 **you summarize your teaching philosophy in two sentences.**

501 M: It is hard. It is different now from what it would have been then.

503 **B: Ok one now and one then.**

505 M: Back then I was more focused on the technical side of things. I wanted to teach the
506 underlying principles in a way that people can really understand the principles and apply
507 them, become competent in doing whatever they are doing away from the road lining to a
508 proper understanding of the concepts. Now I would consider that secondary. Now I want to
509 inspire and create joy and motivation. I want them to like what they are doing. Then you can
510 teach them anything. I think the most important thing at the moment is a role model to show
511 the joy that programming can bring and the fun side of it. I think that is the most important
512 part for me now. Everything technical is secondary.

514 **B: Thank you. You did it! You got it in the short period of time. We have several other**
515 **things I'd like to talk to you about. Are you comfortable in continuing this in a phone**
516 **conversation?**

518 M: Yes that would be.

520 **B: I want you to think about one thing you'd put in a video segment. Is there one think**
521 **you'd like to close with that you didn't get to today? That you didn't say and are really**
522 **dying to say?**

523

524   M: No I don't think so.

525

526   [43:38]

527   ***

528   ***

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

530   **USA**

531

532   **B: This is a continuation of an interview with Michael Kölling of Kent University in**

533   **Canterbury, England. The interview began in Denver, Colorado on March 8th, 2013.**

534   **It is being conducted by Barbara Boucher Owens as part of the Computing Educators**

535   **Oral History Project. This continuation is being conducted via SKYPE on July 10th,**

536   **2013. Michael is in England and Barbara is in Blue Ridge, GA, USA. Good afternoon**

537   **to you, Michael. Welcome back.**

538

539   M: Good morning to you. (talking over)

540

541   **B: Welcome back to this interview. When we stopped for a short pause of four months**

542   **{laughs} you had just finished your PhD and had just finished your PhD in Melbourne.**

543   **I asked you a few questions about that. Talk about the young PhD, the vision for the**

544   **future, what you did and how that pathway was influenced by people, students, place,**

545   **family. Could you talk a bit about it?**

546

547   M: Uhm, yes so, in my PhD I said already in the previous part of this interview, was about

548   developing Blue as a language and environment for education and that was very much

549   influenced by my experience in teaching. I had been an instructor at the university from my

550   student days on and it was always unhappy with the toolset that was there. So when I was

551   searching for a PhD topic that is what came to mind. So that was ... it came very much out of

552   personal need because I wanted to have a tool. And so that led to the topic of Blue which was

553   my PhD topic and then I was very lucky that the university where I did that, the University of

554   Sydney, actually adopted that for the first year teaching and used it for two years. I got very

555   good response from the department there and developed ... and actually got real users so the

556   whole university department used the system and that was of course very amazing for a PhD

557   student and that was very exciting and great opportunity and great motivation to work hard

558   and there would be students and I knew when I was working on it that the next year students

559   would be using it so the department made the decision before it was entirely finished. An

560   astounding feat of optimism that it would all work out. But it did!

561

562   **B: And the question then, you were in Melbourne at the time. Is that correct?**

563

564   M: No, that came after.

565

566   **B: Oh**

567

568   M: So I. That was during my PhD. My first two years of my PhD I was at Sydney University

569   and that is when the department started to use …

570
571 **B: OK**
572
573
574 M: Then I went to Melbourne just before finishing my PhD. I went to Melbourne and the last
575   year or so on my PhD I was in Melbourne but I was still enrolled for the PhD in Sydney. My
576   supervisor John Rosenberg he went to Melbourne. He changed jobs and became dean of the
577   faculty in Melbourne and so I chose to follow my supervisor to work more efficiently. I
578   continued to work and was still enrolled in Sydney and continued to work at Monash in
579   Melbourne.
580
581 **B: Ok. How did your career at Melbourne develop?**
582
583 M: That went very well. It was a very interesting place to work. It was a very large university.
584   They had a lot of things at Monash. They had a whole handful of computing departments.
585   There was the computer science department. The one I was in focused more on software
586   engineering so, software development, so there was a software engineering department.
587   There was also IT that also had library science and so it was an interesting place. It was very
588   large place to work in. I got a position there. What was it at first? It was I think associate
589   lecturer and then lecturer later on. And that was an interesting move. I continued working
590   on Blue during my PhD and fairly soon after on BlueJ which was a successor system. It was
591   quite well supported by the head of department there as well so it was really good place.
592
593 **B: I see by your vita that you went from Melbourne to Denmark.**
594
595 M: Yes
596
597 **B: How did that transpire?**
598
599 M: I was in Melbourne for five years or so a bit shorter, somewhere there abouts. It doesn't
600   matter exactly. So I was in Melbourne there for a while and in terms of work it went very
601   well. We started BlueJ as a project. That was a successful project. It came at the end of my
602   PhD. Then there was a question of what to do next. The Blue project was still interesting to
603   me. We had two options; sorry I am not directly answering your question. I'll get there in a
604   minute.
605
606 **B: That's fine.**
607 [6:30]
608 M: Just keep things in order, chronological order. When the PhD was finished and I didn't know
609   what to do, I didn't really want to drop the Blue. It was an interesting project, and we had
610   users and it was interesting work. At the same time Java had become popular. So that was in
611   about 1999. It had been out for about 4 years or so. It was becoming very popular. And so
612   we had the choice of either continuing with Blue as a language and we thought it would
613   always remain an academic niche and people would say yes, good work and then they go and
614   do something else, or the other was to throw away our language and use Java instead. And a
615   Blue like environment so we could use our environment and throw away the language and

616   we build it for Java and that is what became BlueJ. That was the more interesting option
617   because that way we dropped one half of our project but bring the other half out and actually
618   get people to use it because Java didn't have a very convincing educational environment. We
619   thought there is a space that hasn't been done before and we thought we could do something
620   new. And that is what we did. That became slowly somewhat popular. Some people started
621   using it and then it had already started in Australia. So for my professional career that was
622   probably the most important step for me. Because BlueJ was a successful project in the sense
623   that that it had real users and eventually, after several years, a rather large number of real
624   users. For my professional development that was very important.
625
626   B: Can I ask a question quick? What do you consider a real user?
627
628   M: Real user is someone who is not your friend, who is using it to do you a favor.
629
630   B: So it still could be students, but not necessarily professional programmers?
631
632   M: I mean a real user is someone who uses it because they really want to use your software and
633   not just to play around or to evaluate it but someone who actually has an interest in using it.
634   To achieve something for themselves. Students are most definitely in my mind real users;
635   they are using it because they want to learn something or sometimes because they are told to
636   use it because their teacher thinks. I mean people who don't use it just for to evaluate it or
637   because you have asked them to, someone who is unconnected and uses it because they want
638   it. That has driven me ever since. That has from the very beginning once we had the
639   software; I get a real kick out of having real users. Not build something that three other
640   researchers look at which often happens in university projects. Lots of people do really
641   fascinating, great interesting work but it is then a handful of other researchers who actually
642   hear about it. And I got real satisfaction out of having people use my software, real
643   satisfying, it is good fun. If you put a lot of effort into building something and you know it
644   actually has an impact, that someone actually, it matters to someone that makes a difference.
645   And having BlueJ becoming fairly popular and popular at the beginning means some 100
646   people using it and I thought that was a great number. At the moment there are over 10
647   million downloads. It has grown a bit.
648
649   **B: Whoa! We're losing the sound. Michael I just lost the sound. I don't know if it is here**
650   **or there.**
651   [11:13]
652   M: It was very exciting to see that people were actually using it. And for me professionally.
653   BlueJ, it was the first project that became really big where there were a large number of
654   users, a lot of interest. For my professional career that was a very important step. It was also
655   about which my first papers were accepted, about Blue, BlueJ. My whole career started with
656   those two systems, Blue and BlueJ. And that was all that happened those first few years. It
657   was all in Australia, Monash. And then I went to Denmark. By that time I had children.
658   During my PhD my daughter was born and then a bit after my second daughter and I decided
659   at some stage I wanted to get my family, my parents and my children together because my
660   parents were in Germany and we lived in Australia and I wanted my parents and my children

661   to be able to meet more regularly so we decided to move to northern Europe. At first we
662   thought northern Germany but then it turned out Denmark was close enough.

663

664   **B: Was your wife from Australia?**

665

666   M: Yes, she was Australian and moved, we moved all together to Denmark. So looking from
667   over there it is a different country but it is only a few hours driving so it opened up even on
668   weekends we could easily. So I went to Denmark for private reasons and professionally that
669   collaboration with Australia continued for a long time. The BlueJ project was split and we
670   had some people working on it in Australia, some in Denmark. And then a little bit later the
671   University of Kent also became involved through Ian Utting. For a while it was three sites
672   that collaborated.

673

674   **B: OK, what was the climate like in Denmark? Were there professors that you worked**
675   **with there? Or were you the lone professor on BlueJ?**

676

677   M: On BlueJ I was the only one. There were other people working on software engineering
678   more generally, especially on ubiquitous computing. For a while I collaborated with them a
679   bit and was considering moving a bit more into a new area and expanding a bit out of the
680   computing education area into more traditional software engineering and programming
681   languages again. So computing education was really through languages; I was initially
682   interested in programming languages and it was just a coincidence that the language I
683   designed was for teaching. For me the interesting thing when I started was language design.
684   But teaching I knew very little, I had no formal education, knowledge in teaching and I saw
685   myself always as a software engineer, language designer. For a while I was going back to
686   that and getting out of that education a little and going back. At the end it hasn't happened.
687   The education, especially BlueJ and a follow on which I started in Denmark was Greenfoot,
688   another education project. They became so interesting that they took up all my time. So in
689   Denmark in the education space I was the only one working there. I went to a very small,
690   new computer engineering institute that was at the time had only been founded a few years
691   before. The idea was to try to build up something there. Eventually that didn't work out as
692   well as I hoped, so I stayed in Denmark for only three years and then I moved on.

693

694   **B: So it was your contact with Ian that has started this last segment of your career at**
695   **Kent? Is that partly…?**
696   [16:00]
697   M: It was part of it and part of it was coincidence. When I decided to move on I looked around
698   for work somewhere in northern Europe. I wanted to stay in the area and I didn't want to
699   learn yet another language. I had just learned Danish somewhat, never really properly
700   fluently, always only spoke it fairly badly anyway. I didn't want another language so I
701   looked only in English and German speaking areas. And then at Kent a good position came
702   up and I knew a lot couple of people there, Ian was one, through the BlueJ project. I also
703   knew David Barnes. I had written a book together with him. He is at the University of Kent
704   so there was another contact. Somewhat coincidentally I met him at a SIGCSE conference
705   where he approached me. He wanted to write a book, and he said would I mind if he writes a
706   book using BlueJ? At the time I am also trying to write a book about BlueJ and just trying to

707   keep it separate. I said I am happy to give him the information he needed but he should just
708   be aware that he'd be in competition as I also would be writing a book. It so happens that I
709   never got it off the ground. I just didn't manage to find the time to get started with my
710   publisher. He had a publisher but they said, well, a book about BlueJ isn't interesting. My
711   publisher was pushing me and wanted the book but I didn't get it done. So he said why don't
712   we get it done and write it together? And that worked very well. So that had happened
713   before I went to Kent already. So I had two contacts there. I had really worked successfully
714   with David, we actually managed to write the book and get it out and that was a big step for
715   me. And it was a very nice collaboration; he is a very nice guy. I knew Ian. I knew a few
716   people and this job came up and I applied and I got the job and I moved to the University of
717   Kent. That is now 8 ½ years ago. So ended up being there ever since. It was one of my
718   longer stints at university without moving around. I had moved around a bit before but not
719   now. I am very well settled.
720
721 **B: Can we … a couple of things. Are you still teaching students face-to-face in addition to**
722   **working on your Greenfoot project?**
723
724 M: I have an academic position here as a professor which means teaching and research. I do a
725   normal teaching load. So I .. the first years I often taught our introductory programming
726   course. The last … the first .. I'm not doing that anymore. I had a sabbatical year and
727   handed that over to someone else. And for now I am teaching at the moment – I'm teaching
728   three courses per year. I'm teaching an HCI course and HCI is one of the subjects I really,
729   really like to teach. I find it very interesting. It's not, in many courses very well covered.
730   It's often overlooked, probably tacked on to the end. I find it really fascinating; I like HCI so
731   I jointly taught with Sally Fincher; we do a lot of team teaching at our department so we
732   share the teaching of that course. And I teach a tools course, it is sort of small course,
733   teaching students about professional development tools – profilers and source repository
734   systems and internationalization. Development tools. So it is a very practical course. So new
735   for next year I will be teaching a foundations course, that we are now offering before our first
736   year for students who don't quite have the requirements to get into the first year. For most of
737   them it is language -- they don't have sufficient English language skills. So they half are
738   learning English and the other half they start something to do with their subject so there we
739   are using Greenfoot to give them a gentle introduction to some programming while they
740   brush up on English before they get to the first year.
741
742 **B: Is that course – each department has a variant on that course, is that what you are**
743   **saying?**
744
745 M: There is one central unit in the university that coordinates them, but they get people from
746   different departments to offer subjects, courses in them.
747
748 **B: Uhm, very interesting.**
749 [20:59]
750 M: We just started that, that's new. Because we get a lot of interest from international students
751   who don't quite fulfill our requirements, entry requirements. So we give them a chance to
752   come here from scratch and then start.

753
754 **B: How does your career path, the structure? Like here in the US we do assistant**
755   **professor, associate and full professor. Do you have the same career track?**
756
757 M: It is quite similar. Here we have one more step. It is usually assistant lecturer, lecturer,
758   senior lecturer, reader and then full professor. So we have five steps. It is a fairly gradual
759   progression. In principle it is quite similar in the US, but actually slightly different.
760
761 **B: So did you start at Kent, at what level did you start?**
762
763 M: I started as a senior lecturer and was then promoted to professor a few years ago.
764
765 **B: OK. Part of what I wanted to talk about in this pathways. You talked about, you**
766   **alluded to one of the benefits of the professional organizations, is that you met David**
767   **Barnes at SIGCE. I like to hear those kinds of things. But can you tell me what**
768   **professional organizations you belong to and how they affect your career?**
769
770 M: I am a member of the ACM and SIGCSE, obviously within that and of the BCS, that is the
771   British Computer Society, the only two professional organizations that I am a member of. So
772   the British Computer Society is the obviously locally relevant society in the country, in
773   England. Over the last three or four years or so they have been very interesting because I
774   work here in a group in England called Computing at Schools. And we are trying to get
775   computer science re-introduced at school level, at high school, actually no at the whole range
776   from primary. The BCS has become very supportive of this. Before this Computing at
777   Schools development I had fairly little contact with the British Computer Society. I was a
778   member but wasn't very active. Since then because the British Computer Society is very
779   supportive of that work, I have been in regular contact with them. They have been very
780   helpful and very supportive. We have a number of people with them even though this
781   initiative of Computing at Schools started outside of the British Computer Society but they
782   then became very quickly very supportive. So that is the one in the UK, yes.
783
784 **B: It is becoming a model, I think, to us, too. We look at what is going to happen to that**
785   **very interesting program. What service, you said you have been involved with them, is**
786   **that in a service role, as an advisor, developer?**
787
788 M: I am formally a member; I don't have a service role with them. I am very active in
789   Computing at Schools which collaborates with the BCS, but I have no formal role with the
790   BCS nor with ACM.
791
792 **B: Can you talk a bit about … We are sort of getting to the end of the interview. Can you**
793   **talk about some of the major challenges that you have had in your career? What do**
794   **you think were the biggest stumbling blocks, the things you overcame and how did you**
795   **do that?**
796   [25:00]
797 M: I always had the impression of my own career that I have always been very lucky that things
798   just happened by chance that opened opportunities for me. My career progressed fairly

799   smoothly without a great amount of planning on my part. Just step one at a time. I just try to
800   think of stumbling blocks or hurdles. There wasn't much. I always thought I was very lucky
801   with the developments as they happened. I was always doing my work and interested in my
802   work and I worked a lot because I liked to. Somehow always at the right time some
803   opportunity opened to go somewhere.
804

805   **B: It may be that you see those opportunities and seize them.**
806

807   M: Yes, maybe that's the one thing to do to make the most of it. In terms of challenges, I don't
808   know. It's just the small scale day-to-day thing that everyone has. I'm thinking I don't get
809   quite enough time to do those things I would like to do. I have PhD students now who come
810   up with interesting ideas and I've got more ideas than time to work with them. That's just
811   normal everyone has that.
812

813   **B: How many students do you have?**
814

815   M: I've got three PhD students at the moment and a couple of master's students and I have three
816   people that work for me as paid developers on BlueJ and Greenfoot projects.
817

818   **B: Hmm. Good. You are so busy with all of that. Do you have any outside interests?**
819

820   M: I do. Actually I live here close to London and I like to go into London and go to the theater
821   and go to concerts and do that quite regularly. Especially now this time of year, our summer
822   has just started and I do have a real interest in theater, music and do those things. I try and I
823   actually do try to get out and get away from the screen. The other thing obviously is I have
824   two children. I try to spend time with them and go round, although that is sort of getting a bit
825   less. They are getting into the teenage years and now getting to the phase they want to do
826   things without me. But I do like to go spend time with them, I go places with them.
827

828   **B: What are they interested in? Are they interested in computing?**
829

830   M: I have two girls, 13 and 15. When they were younger, when they were around 10 or so I
831   showed them Scratch and they loved it and they were good at it. It has gone away now,
832   unfortunately. They are in the teenage phase where they are with their girlfriends and
833   computing is not really cool and so far they don't have interest. They, have a genuine
834   interest, especially the older one, in languages and art …the technical not so much. I am
835   quite happy with that, I am happy that she has seen what it is and for making an informed
836   decision as to whether she likes it or not. She knows what it is about.
837

838   **B: You had early in the interview said that you had done painting and you were trying to**
839   **decide whether to become an artist or a computer scientist. Do you do anything with**
840   **your art?**
841

842   M: No, I haven't done anything for decades. Actually that was at the time I started studying that
843   was a serious consideration and I thought I could study computer science and paint in my

844   own time. That has stopped completely. I haven't painted for a long, long time. Every few
845   years I think I should start again but I 'm not.
846

847 **B: Do you have a vision for the future, especially with Computing in Schools, how**
848   **computing may change, how your role or the role of your students when they become**
849   **professors, what do you see happening in the next five years, twenty years?**
850 [30:07]
851 M: Computing is reaching everyone in every part of their life. They have a phone or an iPad.
852   The problem is I think that the modern presence of computing in their life reduces them to
853   becoming consumers. I think the hurdle of being a consumer of computers, you know being
854   able to watch YouTube on your iPad to actually become a producer, a developer, being
855   creative, I think it is getting harder and harder because it has become so polished, it has
856   become a big hurdle that is very hard to cross. When I got my first computer all you could
857   do with it was program it. You couldn't do anything fun without being creative. I think the
858   creative side of modern gadgets is so well hidden away that kids now feel that whatever you
859   want to do there is an app for that. There's ... getting them to even understand that you can be
860   creative beyond just using software but by developing software, I think it gets harder and
861   harder to get people to see that. The bug that we all had, you know, when you discovered
862   programming and suddenly you can do all those things, it is getting quite hard to get people
863   to experience that. I think in a paradoxical sense our computing systems are becoming so
864   prevalent and ubiquitous and polished and becoming so good is working against us in the
865   sense that it is much harder to get people to become interested in becoming truly creative
866   and making their own software with computers. That will be a challenge. So somehow,
867   because the computing systems are so good, so far away from what you can achieve on your
868   first day, it just seems frustrating to even try.
869

870 **B: Very interesting. I see what you are saying. Very interesting. The last question -- well**
871   **there are two last questions/ The penultimate question, I guess, is if you were going to**
872   **give advice to a young person interested in going to computing and especially a young**
873   **women, what would you say?**
874

875 M: The advice I really think is to go and give it a try. There is I think a huge amount of personal
876   satisfaction you get out of when you have developed something yourself. That you just
877   cannot explain. You cannot tell someone. You have to experience it. The one thing you have
878   to overcome is that you have to do it once. Once you do it then you know what we mean.
879   Once you felt it, you know. You can't tell people. I think the best thing is to go and do it and
880   you will see what I mean.
881

882 **B: That's good. Thank you. And the final thing I ask people and many people refuse to**
883   **answer the question is if there were one story about you that you hope people will**
884   **remember what would you like that to be? I watched you puff your cheeks when I**
885   **asked that one!**
886

887 M: I hope that people will… I genuinely want to make peoples' lives better. Sometimes you ask
888   yourself, you know, why am I doing all this? What am I here for? Why am I working so
889   hard? What do I want to have left when I am gone? How do you want to spend your time on

890   earth? I think what you can do is … you want to be a positive influence.   A positive
891   influence is to give people more choices, increase opportunities or choices for people. I hope
892   that with my work I am creating something that allows some people do something that they
893   otherwise wouldn't have been able to do. So what I would like people to remember is that I
894   somehow really tried to make a difference.
895

896 **B: That is a wonderful closing story, because one of the first stories you told about when**
897   **you were working was when you were working with people that had severe disabilities**
898   **when you doing your alternative service and you started your life wanting to make a**
899   **difference and you are finishing, well you aren't finishing, but you are mid-career**
900   **trying to make a difference. I think that is a wonderful story to remember – that**
901   **Michael wants to make a difference, to make peoples' lives better. Correct?**
902

903 M: Yes.
904

905 **B: Well, thank you for all your contributions and thank you for the time that you have**
906   **spent with me doing this interview. Don't go away, but I think our interview has come**
907   **to a close. Is there any last word you want?**
908

909 M: Thank you for having me.
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