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Narrator: Claude Comair
Date: August 22, 2002
Interviewed By: Jessah Foulk
Place: Museum of History and Industry

JESSAH FOULK: This is an interview with Claude Comair on August 22, 2002. The interviewer is Jessah Foulk for the Museum of History and Industry.

Now, could you please begin by stating your name, your job title and where you're currently working?

CC: My name is Claude Comair and my job title at Digipen is founder and chairman of the board.   And my title at Nintendo Software Technology is co-founder and chairman of the board.

JF: And by **"DigiPen"**, is that the company or the Institute of Technology?

CC: No, it's the company worldwide.

JF: OK. Now, before we talk about that, we need to go back and talk about some background questions. So, can you tell me, please, about where you were born?

CC: I was born in Lebanon – in a village in the northern part of Lebanon called Tanor Dieng. And I grew up in Lebanon until the age of, I believe, eighteen, around that time.

Then I decided that I should do my medical studies in Lyon, in France. I stayed there for a couple of years; then decided that the situation in Lebanon was beginning to be intolerable for me to bear the news that I was receiving on a daily basis. I did not know what my family was doing, what was happening to my family back home.

So, I finally decided to go back to Lebanon to check what was happening. And in 1977, I visited and decided to remain in Lebanon as long as I felt I

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would be needed and to be beside my family and my loved ones, and to forget about the education that I started in biology and medical field, basically.

I went one day with a young woman, a friend of mine, a dear childhood friend of mine. She was going to the university over there to register for her interior design [degree program].

JF: In the university there?

CC: In Beirut. In a city near Beirut, called Junie. And the university was called University of the Holy Ghost, the University of the Saint Spirit, depending on how you translate it from French.

And I was visiting with her and I was in the hallway waiting for her to finish her application. And at that time I wasn't allowed to be inside the university if I wasn't a student, for security reasons.

So it's a Catholic university, and this priest came forward to me and all of a sudden asked me, "What are you doing here?"

And I got startled, and I lied. I said, "I'm here to register."

And he said to me, "Well, the competition for entrance – or the entrance exam, if you would like – for the engineering [program] will start in a few minutes. You'd better be in place before we open the brown envelopes that contain the exams."

And he actually went into the class telling me that I can finish my registration later, that I should be in the exam on time. So, he took me to the teacher who is looking after the exam, proctoring it, and asked the teacher to escort me back to the end of the exam, to the administration to finalize my application.

Well, I went in pretending, you know, that I would be taking these exams. I sat down, and I got the exam paper. I don't know what took me. It was the entrance exam for architecture. I did it, and I was chosen [for admission].

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I remained in Junie, Lebanon, where I studied until 1983. I finished my first degree there, in architecture. And during that time I fell in love with visuals. The world of architecture was so foreign to what I was accustomed to.

You know, my father is a medical doctor; my uncle is a medical doctor. I was supposed to be a medical doctor, but it didn't happen this way. And for the first year of my life at the university, I was in a conflict with my family because they thought that I was a crazy person by doing so many years in one direction, [and then making a radical change]. All of a sudden, first of all, I came back to a country that was at war. Second, I totally changed my profession and went in a direction where none had – where no preparation for me in the family has been done, you see.

At that time, you would do what your father told you to do. And for that matter, I was a very good kid. I wanted to do medical sciences for them, but eventually I realized that I liked architecture so much more.

And I stayed, and I excelled in it. I graduated from a very hard and tough and rigorous program. And I loved it and enjoyed it. And I wanted to be an architect. That's the only thing I wanted to be.

In the middle of my education, I fell in love with electronics and I started spending every single penny that I made on assembling kit computers. You know, at that time there was no way that you could *officially* do computer science, to go to school, and so forth.

So, I would play with whatever motherboard I could find. I could add things to them, and so on.

And by 1979 I wrote a program, which I called "The U." And that program was a three-dimensional visualization program. It would take the 3-D data of an object, in 3-D space, and through a series of projections, I was able to do a two-tier presentation of that object on the screen.

At the beginning, I just had numbers. I did not have the possibility to have a graphic screen. And I would verify the positions of the digits, the dots, the imaginary dots in the imaginary matrix of the memory of the computer. And I

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would remember many times, sitting hours on end, filling a kilometric paper to see whether my calculations were correct or not.

One of my teachers at that time who was Japanese looked at my work and he recommended that I should go and talk to the Japanese ambassador and show him my work. [He said] that he would actually introduce me at the embassy. Which I finally did, following his insistent attitude.

The ambassador sponsored me to go to Japan after my education would finish in 1983.   To go to Japan to follow further education and for the research, totally paid by the Japanese government in the field of visualization and image recognition and simulation of events.

In a city, for example, if you would have to plan what would happen after an earthquake, in terms of disaster, in terms of efforts of relief, and so on. And I joined the team in Japan of Professor Suoshi Sesada, who was world-famous for his research in the field of visualization.

And I was very thankful to the government because they were paying for every single desire that I had. All they needed was just for me to think and to do my research.

And I did that for four years. I met my wife over there, Michelle. We got married and she is Chinese ethnically, but a Canadian citizen. So, she's a Canadian-Asian woman, a Chinese woman that went to Japan, and we fell in love. We got married. After a while, she decided that we should to back to Canada.

I was doing a fairly good living in Japan and I was very worried about Canada. This new adventure in my life that would be … if you would say my first migration was going to France; coming back to Lebanon; staying a few years there; then going to Japan was my second start in life. Then going on to Canada.

It was not something that I was looking forward to, to tell you the truth. As an anecdote, when we went to acquire a visa for me to get, as a Lebanese, we had to go to the embassy, to the Canadian consulate in Tokyo.

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So, I went with my wife and the consul was a lady. And she explained to me that I cannot get a visa to go to Canada from an application presented in Tokyo. Being a Lebanese, I had to go to Syria to do it, a neighboring country to Lebanon, because the embassy in Lebanon had closed. So I would have to travel to Syria.

I was very hesitant, being a Christian - at that time the Christian community - it [in Lebanon] was at odds with the Syrian government.   And I simply stated that it would be totally impossible for me to even *think* of going to Syria to do that. It was simply not possible.

And I turned to my wife and I said, "Well, Michelle. That solves all our problems. We're staying in Japan."

And hearing my comment, the consul decided all of a sudden that she would give me a visa to go. Of course, that didn't make my day. I was upset, internally. Happy in front of my wife, but internally I was upset that, again, my life was going to be more nomadic than stable.

So, a few months later we packed and I quit my job, gave my resignation and left Japan. The guys of the lab that I worked with were very nice. They sent friends from Japan to Vancouver, British Columbia, to help me later on get set up.

But first when we arrived, I didn't know what to do. Prior to coming to Canada, prior to departure, I went to the library and borrowed several hours of videotapes about [Canadian] advertisements. You know, clips of ads, and so on. And I started watching them. I was very intrigued to know about the population. Where am I going to land, you know? Canada is going to be a new thing for me.

So, I got these tapes, about six hours or so. I sat down and I watched them, over and over. And as I was watching, I became more and more happy. In a sense, what transpired was that, since these ads were made for the population, that this population seemed kind of nice, to begin with.

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That's one thing that I realized. And the ads were naïve in another way, too. Those ads were very naïve in my eyes, anyway. You know, you can imagine me, a very serious scientist, looking at a woman talking to a dish: "I can see myself in that dish after washing it in a dishwasher with this liquid!"

I felt very comfortable about coming to Canada, for some reason. I felt like I knew a little bit about Canadians and North Americans, basically, prior to arrival. It's an innocent vision of mine, but that's what I did [to get prepared].

So I arrived to Canada, and I wanted to work as an architect first. I soon found out that Canadians don't go to architects to build. They just went to catalogs, found a home and bought it from somewhere, and somebody would come and put it up for them. So, that's one thing.

The second thing I realized also, was that I didn't know what "Canadian" is. So, how can I build an entity for these people that they can live in? How can I build a home for a Canadian family, when I have no idea how they live?

So I soon realized that I have to rely only on my computer science knowledge, as opposed to the architectural knowledge. Which at times, still surfaces in me. I will be an architect forever. Whatever they do to me, I will remain an architect internally.

JF: In what year did you move to Canada?

CC: I moved in 1988 to Canada. Yes, in 1988.

So, we decided, my wife and I, to forget about architecture. Why don't we use the knowledge that I had acquired in Japan?

And meanwhile, in Japan, I got another degree. I got a master's of engineering, related to computer visualization and computer simulation.

So I decided that I am going to utilize this to make a living. And I decided to create a company. I didn't want to go to work for anybody. I decided to create a company, a different company. We didn't know what to call it; we thought of so many names, and Digipen was our *last* choice. It was the last

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choice on the list. And, obviously, all the names that we liked, they either existed already, or we were unable them to use for one reason or another by the Canadian "naming company rules," or whatever you call it.

So DigiPen was the name. My wife hated it. I kept saying to myself, "Well, *IBM* is an ugly name, too! What does it mean, 'International Business Machines'? It's nothing!" What made the name is what this company is going to *do*.

So, basically, it doesn't matter what we would call it now. But later, it would be glamorous and everybody will like it because it will be doing something different than other people would do.

That was the first setup. I spent $25, all in all, [to get the company started]. And those were probably the best $25 I've ever spent in my life.

We started the company and I made up my mind – now I'm going to be a father, by the way. Michelle was pregnant. And when I was young, I had a stable father. I used to go to the clinic and sit there. My father had an office with a table – it was tangible.

And I wanted to be that kind of a father for my kids. They would come to visit me [in my office]. In my mind, you see?

So I wanted to create a company. I didn't want to go anywhere else to work. And my wife's family is pretty well off and established in Canada. They have a wonderful accountant that came to me and he said, "Your father-in-law asked me to help you analyzing this situation." I said, "Fine!" His name is Ron Walsh. He is a very good friend and helped me over the years, and until today he is still the accounting firm that I use in Canada.

So Ron came to me and he said, "Claude, I like your ideas, but why don't we do a study of the market first?"

I decided that a study of the market is a good idea to start with. I am an engineer; I have nothing to do with business. And on top and above that, I've been only involved in the academic world. So, I was totally foreign to

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everything that you may call "business," or being "street-smart." I couldn't even read the books! At that time, I was unable to read a summary of year-end [expenses and revenues] – you know, what's "income"!? I only understood that you shouldn't buy things that you don't have money for. That's basically more or less the motto that I had in my mind, or the resolution.

And on top and above that, I always heard from my parents, "Never borrow money! The banks will foreclose you!" or something like that. So, I said to myself, "I know nothing about the business. I'm starting a venture. This man wants me to do a study of the market." I said, "Why not?"

And we studied a little bit of the situation, and the bill for doing the study of the market was about $100,000.

So, I said to myself, "No, no. This is illogical." And I don't have that type of money to start this company! Why don't we use the $100,000 to start the company, too, and if it fails we would have studied the market at the same time! You know, we would be better off! [laughter]

So, I decided, "Forget the study of the market!" We set up in my house. We were utilizing at that time my in-laws' home in Canada. My father-in-law was the ambassador to the Vatican at that time, so he wasn't there. So we used the house. I took over the dining room; turned it into my office. And we started the business.

We registered the company DigiPen – an ugly name. And so be it. We will do great things!

And I said to myself, "We will only hire people that have a research project." Because like that at least they will be close to the academic world. I can understand them, you see; I can understand what they are doing. And they can understand me a little bit.

So, it doesn't matter if the project made money at the beginning as long as it's a good idea and there is a drive and love behind it, and passion.

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And that was a must! Every single employee that we hired in the first couple of years had a project, a crazy project of some kind.

And we started. I put an ad in the newspapers for hiring personnel, and Mr. Chu, Jason Chu, was the first applicant out of 200 people.

So I spent, maybe, my first month of business interviewing these people that lied to me, left and right. For an engineering position, I had a skiing instructor apply, pretending to be an engineer.

So, I was flabbergasted by the innocence of Jason, Mr. Chu. And he was the only one who came to me and told me that he knew nothing about the business. He told me he was a self-taught engineer and didn't know how to program. But he also said that he was willing to learn and he doesn't deserve the salary that I was offering. He would settle for $1,125 a month, Canadian.

I said, "Yes, come on board!" So, the company was myself, who knew very well my job, that's true, plus a person who was a mechanical engineer who had nothing to do with computer software.

And we started our business this way.   And our first bill that we gave to a person was $12, plus a few cents. Another bill was $40, and something.

The first year, we decided that Vancouver was not computerized enough in the engineering offices, so I created a system in Vancouver where DigiPen would negotiate on your behalf the purchase of the [computer] equipment. Every penny that we can make for you as a saving, you have to spend it in our company to learn how to use [the hardware].

So, basically, we would go to some distributor to buy workstations for an engineering office. Let's say, the list price would be a million dollars or half-a-million dollars. We would get a 30 percent or 40 percent discount, approximately.

That money in totality was given back, credited back to the buyer in terms of training [by our company]. We wanted to make sure that people who were buying our solutions were very well trained.

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And we would install the new computer system at DigiPen, and bring the employees of the company from all levels, including the directors and VPs and so forth, to be trained, and then sent back to their companies. And then slowly, slowly bring the computers that they bought out of DigiPen back into their companies.

So at DigiPen we had several little companies. Our work became the work of every single company that we were trying to help. And once the solution within DigiPen started being productive, with the manpower of the said company, we would pack it and move it to that office.

Like that, they did not lose the senior people. We introduced the computer into the engineering environment and architectural environment in a very smooth way.

And we learned also slowly, slowly how to teach them. And first year we did a lot of business immediately. Friends came from Japan to vouch for us in a meeting at the University of British Columbia. We received hundreds of companies attending the lectures that we gave to see what is visualization, what is the state-of-the-art at that time of simulation, and so forth. And how they can introduce it into their offices, and so forth.

And at the same time, a group from Japan came with a professor, Professor Sesada, to tell the people of Canada that "This man, Mr. Comair, who is a foreign person to you, actually did write the software and the software is his authorship." And that it was all right to basically give me a seal of approval.

And immediately the name of the company and the quality of the company was actually working, hand in hand. So, the name was growing and the quality was growing and slowly grew in a city that wasn't computerized. We grew just to big size.

JF: Please talk about what the original business plan was for DigiPen.

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CC: Ah! Nothing! Just do business! [laughter] In the field that I know, my education was computer simulation and visualization. So I really didn't have any business plan.

JF: You had no targeted plans?

CC: I had no targeted plans. Many kids are going to hear that, and they are going to think that this is the way to go about [starting a business].

I'm sure there are much more sound and scientific ways to start the business, but I didn't. I didn't. I had absolutely no idea what I would be doing and I still have no idea what we will be doing.

And people asked me one time, "What does DigiPen do or what will it do in the future?"

And I said, "It will do exactly what the people of DigiPen know to do." If someone knows how to paint, we will actually turn it into DigiPen, and if they cook, we will turn it into DigiPen and we will be cooking**.**

So I do not have [a clear business plan]. At this point, as frightening as it is, the only issue that I keep at DigiPen and I said from the beginning, is that research would be these crazy people and their crazy ideas. They have driven us into the craziest fields.

A few years back, we were already visualizing the most complicated engines, and hundreds of villas and homes have been already completely visualized. One early client in the first early couple of years in Orange County [California] called me and he said, "If you come down to Balboa Island, I'll make your travel worthwhile."

So I picked up a flight, went there, and met with the person who I don't want to name. I don't know if he likes to be named. And immediately, in less than fifteen minutes I got…

End of Analog Audio Tape 1 of 2 for August 22, 2002

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CC: …on a handshake fifty or sixty prototypes to visualize homes that they were building in a complex. And it happens that this person went bankrupt and couldn't pay, so I ended up with these homes that I didn't know what to do with, all these databases.

And I didn't want to sell them as architectural plans. So what I did, I invented "virtual home renting." You would come to me if you wanted to do an advertisement. For example, we did one for a gas company and hydro company – for B.C. Gas. They wanted homes where we could show the pipes going through the walls and how they would look, for an ad.

And I would actually rent you a home! I would rent you a home that you could explode, blow up.

JF: A virtual home?

CC: A virtual home! By the second … I would charge $1,000 a second. You know, a fifteen-second animation is $15,000. And it could be cheap at that time because I had those things ready-made.

I created a fast way to do TV presentations. You know, like *Movie of the Evening* or *Behind the News*. At that time, TV stations would not have the necessary hardware to do their own logos and their own whatnot. And, as a matter of fact, this is how I moved entirely the company from the engineering to the art and entertainment industry.

This is another little story that may be of certain value to young people on how you can never tell what happens to you. I received a phone call from a young producer at CKVU-13 by the name of Johnny Mitchell. And he tells me, "Mr. Comair, I heard about you. I heard that you have the software and the hardware to create 3-D visuals and so forth." I said, "Yes."

He said, "Well, my problem is that we are changing the name of CKVU-13 to UTV, the letter "u", as in … a short for "you," as in "y-o-u" – "you." And it's going to be UTV instead of CKVU-13."

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And I knew how to create all sorts of animations for the backgrounds, the foregrounds, the movie of the evening, the weather network. I said, "*Wow*! *Wow*! This is very good, but I have nobody to help you because we don't have an art director." Right? We don't have anybody that has any artistic sense.

He said to me, "Well, I have nobody else *but* you. Everybody's telling me that it takes weeks and weeks and weeks to do a few seconds of animation. And somebody told me that you can do twelve hours a year."

I said, "Well, that's true." We had put together a system that allowed us to create, in 1988, twelve hours of animation already in a year. Which is *immense*, really! While other companies would charge you five to ten thousand dollars per second and it takes you six hours per second to make an image, sometimes. We did thirty images per second; that's six hours an image; that times thirty, you know, how much that is per second.   And we were there developing hours and hours of animations a year.

So he came to me and he said, "Well, I need to meet you and I'll pay you whatever you want but I really would like this thing done."

I said, "Well, listen. The only person who is close to an artist here is myself. And I will sit down, we will hog a workstation. I'll sit down with you. I'll try some things. If you like it, you may take it. If you don't like it, you don't have to be obligated."

And it was a weekend. So, we sat down during this weekend, Johnny Mitchell and myself, doing logos; digitizing a logo; showing it to him in real time; going up and down; exploding it; putting colors on it. Everything I've done this guy liked! Everything!

Not to say that it wasn't nice! [laughter] But *everything*! It was so nice and so easygoing!

And when we finished the job, I got paid for it immediately, which wasn't the case with engineers. An engineering company would practically kill you before they paid a debt!

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So the next day, I grouped the people of the company, on Monday. I remember very well that Monday; I will never forget it. And said to them that every single engineer would finish their work, and then we'd pack and go to Hollywood.

I'm never going to work with engineers anymore, as an engineering company. We are moving into the entertainment industry – TV, movies, video games. You name it, we'll do it. But no more, no more, these tough clients that we have. Extremely demanding. In a situation of an engineer, if there is anything that goes wrong, they don't want it. They won't pay for it.

Here we have a client that if [we do our best work] …*wow*! He's in awe in front of it! That's it! This is the future for us.

And, indeed, I moved the company at once and economically I did like a big, big car – *whoosh*! – I turned us towards Hollywood and we moved here. And this is when I encountered Nintendo.

I wanted to do video games. I knew that in 1990 nobody came close to, at that time, what we had internally. It wasn't published work. It wasn't work that you would hear about it in the university. These are proprietary software [programs] that we have done. We really worked over them, and they were extremely efficient. So luck and providence moved in a way that I met the son of Mr. Yamaguchi**,** the owner of Nintendo, who recommended me to talk to Nintendo.

I brought my work and the work of DigiPen. And, indeed, a few days later Mr. Arakawa, the president of Nintendo of America, gave me a phone call. And we decided to meet. I came from Vancouver to Seattle, and then from Seattle to Redmond that morning.

And the meeting was scheduled to be about forty minutes. We stayed about six hours together, talking. And me, very young at that time. Didn't realize how young I was.

JF: What year was this?

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CC: I didn't realize how young I was, and how crazy I was, in terms of, you know, telling Nintendo, "I recommend you to build a world, a studio world, from which you get all your characters." And it would be the Disney World of video games, you know? And then we would rent that world to other companies, and other channels, like TV channels or something. So they can actually have real time virtual reality.

In a sense, all the games that you have are in this world. And, say, you put the pad on the ground in your room, and you start jogging on it and on the TV you see yourself going into the world. You're running. And all of a sudden another person that logged into the same world picks up a car and he's driving in the city pretending to be … it's a game about being a cabbie or a taxi driver. And he's this crazy taxi driver going around, speeding up and so forth. And all of a sudden he hits you! You know, he kicks you out of the game, right? Out of the world. Because you're dead, basically.

Meanwhile, another person, who every morning likes to try the flight simulation game, logs onto the same database and takes his flight simulator. And he's looking down on this entire thing. Sees the taxi driver hitting you, right?

He won't see that tomorrow morning, because tomorrow morning you decide to actually play a little bit later, a fraction of a second later. The cab driver misses you and you don't get killed.

My multiplying this event by 10,000, 15,000, 20,000 users on the same database, you achieve a near virtual-reality world. You achieve real virtual reality.

Virtual reality is not about the goggles. Many of us think that virtual reality is about some goggles and some gloves and people standing in front of a monitor, which they can't see, in front of a keyboard, which they can't see.

But they're waving the gloves in the air; trying to capture things in the air and put them on top of each other. And they think that this is virtual reality.

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That is not virtual reality. The gloves are nothing else but an input device. The goggles are nothing else but a TV screen. And what makes it virtual reality is, in a gimmicky way, is just that it *looks* spatial; it looks cool; it looks out of this world. Then people say, "Oh, this is the tools of virtual reality."

But virtual reality, in truth, is actually the randomness. Try to get the closest possible to the randomness that happens in our daily life.

Today I said hello to my wife. I kissed her; took the time to smile. I missed a deadly accident. And I didn't die, right?

That is reality. And in order to make a virtual reality, you have to have enough randomness of these events – right? – to actually simulate or to tend towards reality. That is virtual reality.

So, I proposed this idea to Mr. Arakawa. At that time, the NES and the upcoming SNES, the new SNES that was on the market, which was…

JF: What is "NES"?

CC: NES is the Nintendo Entertainment System and SNES the Super Nintendo Entertainment System.

There were 8-bit machines and 16-bit machines, and so forth. But they were like flat screen machines. And I tried to explain to Mr. Arakawa that there was no such thing as 3-D. It's all flat. It's all a projection on a two-deep plane, on a glass plane that looks like a 3-D. Like a photo that shows you a world that looks like the real world, but it's not really a 3-D photo. You cannot put your finger in it in depth.

And I kept explaining to them that it would be … it's of no consequences, these 8-bit pictures that they have. They're talking about colors and limitation in color space. Eight-bit gives you 256 colors, basically. Sixteen-bit gives you 64K colors.

But these are color codes that you're talking about and you're talking about, you know, a panel, a flat picture. But how do you obtain the picture? One

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way is to obtain it through a 3-D database. One way is to obtain it through an artist directly that paints that picture.

And they were telling me, at that time, that there is not enough horsepower in the machines, and so forth. But, anyway, the conversation took an interesting turn. Mr. Arakawa, being older than I, and running a much larger corporation, looked at me probably the way I would look today at a young engineer coming so enthusiastic and shaking my head, thinking, "This guy doesn't know anything about the business world, and how much it costs to change something."

But he actually adopted me and slowly, slowly started to ask me my technical opinion about some of the very critical issues in the Nintendo world.

And very soon, in 1991, we decided that we needed to create a school, a university that would be dedicated towards the video game industry. It was not acceptable to both of us…

JF: Both of you?

CC: Yeah, Mr. Arakawa and myself – it was not acceptable to us that there would be no legal, legitimate degree [program] that represented our industry. There would be a degree in anthropology; a degree in history; a degree in English; a degree in any language, including dead languages. And you can get up to a Ph.D., but you couldn't get a degree in video gaming.

So, I decided that this is something worthwhile to work on. Mr. Arakawa asked me if DigiPen would be willing to house the school. I said, "Yes." He said, "We'll give you support and moral support, and at the same time our engineers and your engineers can put up a curriculum."

In 1991 we started the curriculum study. In 1994 the curriculum ended.

So our first curriculum, which I'm hoping to give you guys here – a copy of the original curriculum in the game industry – took us a solid three years, plus three years more of hectic testing, marking up classes, assigning the workload, testing whether these sequences of events would lead to a person

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that can work in the industry, as well as making games good, technically and artistically and content-wise.

We did not have any archetype to follow, or a model. It wasn't a law school. It wasn't a law school that we were making; it wasn't a medical school where you could actually look up to somebody and say, "Well, teach us, O Grand Master!"

We were here trying to set something from scratch. And at times I felt very depressed, because wherever we went in the educational world where we hoped to find help and advice, we were met by sarcasm. "*Ha ha ha*! You guys are planning to play *games* at *school*?"

Or, you know, try to explain to these people that it took me sixteen, seventeen years of university studies in order to acquire the knowledge that I had.

That this is extremely *tough* – that making games in real time, that react in real time; that represent simulations of the real world – stories, artificial intelligence, multiple processes on machines that are so small and so rudimentary that it needed the best people in the computer science industry to actually accomplish the job. Dedication, passion, know-how – *everything* was to be put in this curriculum.

And we came up with a curriculum that was of 160 credits. We were in Canada, so it was also necessary for us to start a test grid. So, we opened a school in Canada in which we taught a version of the curriculum, not complete. But it took two calendar years, not two academic years; two calendar years, which means they had to do two full years to finish the curriculum.

That program produced wonderful people, you know. People that are now so famous and working everywhere in the industry that makes my heart fly. Every day, I see some of them. When they come back to hire from the school, I am the happiest person on earth!

This curriculum was taught for two years over there [in Canada]. And then we decided that in 1996 we were ready for the grand opening, for the degree. I

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always insisted on having a degree institute for our industry as opposed to a certificate or a diploma.

Not to undermine the role that the technical institutions are doing, but to become a computer scientist in the field of gaming you need to study a lot of mathematics, a lot of computer science, physics, as well as the arts of making things.

So 120 credits, the model that was followed by normal university studies, was not acceptable. Furthermore, why would I live by a general education? I didn't want to have the general education imposed on the students.

I am a big advocate of general education. Don't take my words for saying, "Oh, general education should be abolished!" It's not true. But I wanted to create a degree from which you graduate and you go to work. And since it's not a technical degree but an academic degree, I had absolutely to squeeze in anything other than engineering topics that went directly to enhance your ability of becoming an engineer.

So I did not emphasize the fact that you really need to speak English properly, or I did not actually teach you how to communicate with other people. I did not put any of the two general years, the usual first year and second year of university that you see.

I was criticized a lot for that and I stood my ground with the higher education board, the coordinating board of the state of Washington. And I put my foot down and I said, "It's going to be Washington with my way or I will go somewhere else."

JF: Had you moved from British Columbia?

CC: No, we were *moving*. We came with the curriculum to meet with the higher ed board. And the first thing they criticized was the fact that you don't have an option for these people to change. And I explained to them that people who enter this program should have made up their minds already. And the twelve years that they studied at school should have prepared them properly for those things.

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And I am not asking money for this kind of education. Instead, I would like people that paid the tuition to be investing directly into the engineering fields, or engineering topics such as computer languages, such as mathematics.

We have more than fourteen [classes] in mathematics – fourteen times three credits of lectures. That's horrendous for an engineering degree, or, sorry, for a computer science degree.

But I insisted, and I put my foot down and I said to them, "Well, listen. This is what they need to go to work, right? It's already 160 credits. I'm not going to make it 180 or 200 credits. It's not going to be possible!"

And so we argued and argued, and I put my foot down. And I said, "Well, is it going to be Washington or shall we go somewhere else to do it?"

Well, I won! [laughter] And we had a compromise – a sentence that we had to write on the curriculum that says this is a very vertical education. Which we did. Which wasn't a lie.

JF: Why did you go to Washington in the first place? Why didn't you stay in British Columbia?

CC: Well, Washington for us was…. First of all, we wanted to recognize the role that Mr. Arakawa has played and Nintendo has played to help us morally, at least. It's true that we did not receive money from them to run the operations or anything. But at least they invested their time. They are the people that know how to make games. They possess the secrets of the game-making process. And they were willing to make it public through us and available to kids. And I valued that a lot.

And, in the state of Washington, you have also Microsoft, which is a huge corporation that was providing probably 90 percent of the computer [software] of the world. Mr. Gates can correct me here, I'm just guessing, 90 percent would be a total guess. But to my feeling, anyway, it would be about 90 percent of the computers that I see around me do use, one way or another, a program from Microsoft.

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And so Microsoft is a big software force in the region here. Nintendo is here. It's the best in world gaming at that time. And today, I believe it is still. And you had other companies around as well, that were very big.

But I believe that the area was extremely rich in its industry that actually is catering to the software as opposed to hardware [markets]. And Sierra was here; Electronic Arts has an office here. These are wonderful companies, and if you are going to create a school you must be amongst your clients.

My clients are the companies that will hire from my students. So I had a promise and I live to this day with this promise. DigiPen never advertised. The 20,000 or 30,000 demands for applications this year that we receive is with no advertisement at all.

DigiPen promised the students and promised the industry that there will be an outstanding effort to teach the kids over there an outstanding curriculum, and that they will be ready for work as soon as they actually leave – not that they have to be retrained again. The industry witnessed and, as a matter of fact, today if you can get a graduate from DigiPen, it's always a blessing for your company, if you are in the game industry.

So, these companies actually come every year to the school and book so many seats to take home. And that's the reason why our employment rate is very high. It's not due to me. My effort only, if I can say so, is to actually go and promote the students. But it's the students themselves and the graduates [who] are out there who are becoming directors – they want more, you know, of the same.

In 1995, I was asked by Mr. Arakawa to start the company with Nintendo called DigiPen. This company would be made out of students from DigiPen, graduates who at this time were populating DigiPen itself, because that was our first and foremost hiring ground. And many people told me, "But, you know, you have an unfair position – you hire your own from your own graduates. You *know* them. You know them for four or five years and, you know [their capabilities]."

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Well, of course I know them! That's the reason why I took a dive into education. It's to actually man the factories with proper manpower. It will prosper these people and they will have fun altogether making games, and so on.

Blame me for that, if you like! Go make your own school! I mean, who's forbidding you from doing so?

Nintendo Software Technology is the second generation, the company after DigiPen. So DigiPen, in 1995, started. Two years later we have created in DigiPen the engines that are necessary to make video games of a superb quality, you know, at Nintendo-acceptable quality, which was very, very tough.

And in 1998 Mr. Arakawa called me and he asked me whether I would be willing to dissolve DigiPen and create with him Nintendo Software Technologies and appointed me … or gave me the opportunity to become the chairman and chief technology office with one aim, which is to create a factory (I call it "factory") but a game development outside Japan that would be equal to quality to the Japanese counterpart.

And I took that job and I became the chairman. And again, I once more relied on the manpower and the graduate from DigiPen students. And they've done extremely well.

JF: How does this differ from Nintendo of America?

CC: Nintendo of America is a sister company to Nintendo Software. We are both fully owned companies by our mother company in Japan, Nintendo Company Ltd., NCL. And although we have a lot of autonomy, we are still reduced to report to our mother company in terms of financial issues and coordination and so forth.

But every company operates as a separate entity. We do not exchange much manpower or information.

JF: Does Nintendo of America also produce games?

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CC: No. Nintendo of American is a sales operation. NST is purely a production environment, is a software environment, software maker. And NST was created from merging two companies together, three companies together – DigiPen, the personal DigiPen, Canada; DigiPen and another company led by Mr. Samura, Scott Samura**,** which was called Big Bang at that time. Big Bang contributed with a few people, and DigiPen contributed over 90 percent of the manpower.

And it was clear that NST created – Mr. Samura and I run jointly the company, he as the president. Mr. Samura retired a few months ago and another person is now our president.

The company has made wonderful gains. We have made bestsellers and …

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CC: …we've sold unbelievable amount of copies. Did very, very well. The graphics and the water motion is world-famous for being the best water motion ever generated on a computer. That's the making of the engineers who have come from DigiPen.

Previously we have done Pokemon possibilities. As you can see, Nintendo Software is becoming mature enough to handle the most difficult licenses that Nintendo has. Pokemon is one of them, an extremely delicate license.

And now we are doing Tenaka, which is a very difficult snowboarding game filled with inverse schematics and the effects of snow and blizzards. It's amazing how much the game cube is actually giving us the potential to express ourselves as engineers and artists, as game directors.

So, in brief, this is the succession of events that led me to come to North America as well as to Washington State. DigiPen molded from Canada to DigiPen in Washington. We prospered. We became even more influential in the field of education. We teach grade 12 now, as well as university studies. We have programs in the entire state of Washington, in the grade K-12

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schools to teach them computer science, mathematics and arts through gaming, and it's doing fantastically well.

JF: I did not know that. Is that through public high schools?

CC: Yes, exactly.

JF: Is it DigiPen curriculum?

CC: It's DigiPen curriculum, which is registered as a standard. So instead of taking your normal grade 12, you can take a grade 12 DigiPen computer science, grade 12. And we are going nationwide with the program next year.

It is very rewarding, because DigiPen now is actually helping young kids that otherwise did not want to give any more attention to "dull education"; to those good old lectures that are actually competing with TV presentations.

You see, today we are so spoiled by the shininess and glitter of every single thing that you see on TV and the movies. Everything is so polished, so worked-out. You know, an ad costs two, three million dollars to make, more than a movie sometimes.

So imagine how much polish you put in this fifteen seconds or thirty seconds or a minute? You cannot compete anymore as an educator. You cannot just stand in front of kids and tell them, "OK, I'm going to tell you a story that is going to attract your attention."

You have to actually utilize the means of today and the mediums of today; two worlds, actually, encouraging people to study more abstract ideas, such as mathematics.

And the fact of making video games with people jumping and running around and doing things could actually not only be very clever in terms of developing problem-solving issues, but also in terms of developing simple and straightforward mathematical skews, such as translation, such as geometry, such as trigonometry, such as physics.

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The study of physics through gaming – well, gaming and physics is the same thing, because you're always simulating some kind of a physical event, whether it's something that is falling, jumping, running, blowing up, shooting, dancing, crying – everything is physical. The basis of everything is in physics and the basis of physics is mathematics. So, therefore, everything comes into a net that you weave.

And these kids today, when you present them with such an abstract concept, they don't want to listen to you anymore. Kids, they'd rather browse a home page than know how it was made. They'd rather play a game than try to make software for anything else.

So I believe that even though gaming that has been actually notorious in the past, synonymous of violence and synonymous of wasting time, it is now the medium that the teachers are begging for. "Please introduce gaming into the education world."

And what was done last year. DigiPen, in an unprecedented move, took a lot of money, I'm not going to say how much [laughter], but a lot of money and put it into a project which we call Project Fun.

JF: "Fun?"

CC: Fun! Fun! Like "having fun"! I don't know if it's fun or not. [laughter]

And Project Fun is a huge classroom, it's a worldwide classroom, in which we provide the software and tools and education. And you belong to that club for a nominal amount of money, which is actually fifty bucks a year, which is absolutely nothing compared to what you get.

We have now about 2,000 members in the club. That makes it a huge classroom! And that makes the interaction of what's happening in this club phenomenal.

And the club is going to be available now to schools. And the club presents an environment for studies; but at the same time, has an environment for the

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teacher. Not every teacher is a musician and a painter and, you know.
Teachers need material and content.

So, what we are doing through this club, DigiPen is publishing to its remote
teachers, to all the schools that are members of the club, to actually receive
the assignments and the tools and, you know.

If it's a game that you want, for example, for the math teacher we are giving
math examples, games that are mathematics and how to make them. So, we
are giving them step-by-step the solutions of the events. We are giving them
the arts. We are giving them the sounds, the clicks, the clacks, the sound
effects – anything!

And on top of that we are giving it completely built, as well as disassembled.
So, what you see in this card in bits and pieces, and then complete, ready to
go, on another card beside it.

And, not only that, we are giving you every step along the way, complete and
ready to go. Which means session one, session two, session three, session
four, session five, how this game was built, up to the full solution, including all
the intermediate steps, including the beginning assignment.

And it's up to you to understand it, fiddle with it, add to it, or give it as is to the
students.

Now, the students have access to the same club except that particular
assignment. The teacher's assignment to the students is not available to the
students. Other examples, completely done, are available to the students.

So, we are hoping that, you know, tens of thousands of people [will join]. We
just started twenty days ago, and we already have about 2,000 people.

JF: Twenty days ago?

CC: We started exactly on July 20.

JF: Less than a month and you already have 20,000 members?

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CC: No, not 20,000. We have 2,000 members.

JF: And that's in less than a month?!

CC: Yes, that's wonderful, no? That's wonderful! And what's more wonderful is that I know that the message that these kids would receive is, you know, education is important. Fun cannot happen without you having knowledge.

In a sense, believe it or not, I consider myself the luckiest person on earth. Despite all the problems that I went through in life. Like being born in a country that was torn by war. I had to actually leave my country. Got personally injured many times, severely. Even went into a coma in my life.

So lots of events happened to me as a person that made me tame and calmed me a lot. But if it wasn't for my education; if it wasn't for my father always telling me, "Claude, we live in unstable times and the only thing you can keep is what you keep in your head, because one day you are going to leave. One day we are out of here. We cannot remain where we are."

And he was right! I wasn't able to remain in Lebanon. I had to leave as a young man. I left without money. At times, to buy a Coca-Cola drink, I needed to make serious planning for it. Like whether this month I can afford one drink or not.

And because of my education, because of my background, I can say to myself that I'm the true American dream – the guy who came with nothing, and based on his education, made something out of his life.

And now, thank God, I don't have to worry about my living. You can imagine that in my position I make a decent living, which is correct. But I don't know how to sing; I don't know how to dance; I am not a handsome fellow that can, based on my good looks, [make my living]. I don't have any talent, visible talent, that I could actually go and utilize, other than my education.

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And it's only through this education that actually I was able to make a good life for myself, for my kids, for my family, and for hundreds of people that work in my company. You know, it's wonderful! It's absolutely a blessing, and I thank God every day that I am alive that He gave my father the time to tell me those things. And I actually happened to have listened, somehow. [laughter] At times, very reluctantly so, but with a bit of discipline, I listened. And today, I am what I've become.

I did not take a pill for success. I did not buy an elixir where overnight I became a successful man. It was through hard work and through stubbornness and believing if you do a good work, you will get compensated for it.

So based on this, if there is anybody who will listen to this tape later on, I would say, you know, invest in your brain. Invest in your knowledge and you will never go wrong. You will absolutely never go wrong.

Personally, the only stocks that I own of any company are the stocks of DigiPen. I don't have a penny in the stock market. All of my investment is in my dream, my knowledge. That's who I am. My investment is in the people that work in the company. By teaching and by sending them back to school, by forcing them to do research, right? Not by squeezing them to the last drop and then they don't know what to do anymore, right?

So, education is very important. Education is a salvation. Education makes people nice. Educated people don't fight, don't get into quarrels. Educated people don't get into anger sprees and break things around, you know? Educated people live happy.

And that's what I hope one day I can bring to my old country. Some education so they can … it's a very, very rich country in education and in history. Unfortunately, it took the road of war and destruction several years ago, and now they need a lot of help. They need a lot of attention to the young people, so those young people will grow educated and peaceful and they can live in peace with their surroundings and their neighbors and love and those things because …Well, I can't talk about this without having some feelings.

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JF: Do you want to go back to Lebanon?

CC: Well, I do not want to go back to Lebanon as a person. It's not that I don't want to go back to Lebanon. My kids are born in Canada, were born in Canada. And they're Canadians. I brought them up as Canadians. I did not bring them up as young Lebanese. They don't speak the language. They do not know much about Lebanon, other than I come from there.

I am personally, but I have lived a life torn between my youth and where I grew up and what I like. I am here and I was there. You know, I cannot go anywhere here or in Canada that I say to myself, "This is where I walked with my grandfather or with my grandma."

But I don't want them to have this life, you know? We made a choice in life; we came here. They are Canadians; they will be Canadians. We moved to the United States. Now our company is here. Our life is here. And we intend to remain here, to grow old here. And live with our friends that are my family now, and my colleagues. We've been working together for fifteen years, some of them. I see them more than my own brothers. This is my family. This is my land now, and my dedication is towards here.

Now, eventually I would like to, as a person, help in Lebanon, of course. But I am not at this point interested in – well, let's say that the Lebanon that I knew is no longer there. What is a country? It's people, not just geography. It's people. And the people are not there. I grew up. I don't know where they are anymore. So, there is not really much [left there for me].

But what I would like to do …I hurt when I see Lebanon in the news. I hurt by saying to myself, "Why is this place on earth cursed so much?" I hurt because I believe that many young people will have to follow [my path]. You know, the migration path is a terrible adventure that comes with every single expatriation, of leaving your country or your birthplace.

Maybe what I would like to do is educate over there. Maybe what I would like to do is start schools over there. What I would like to do is to start a flame that would tell people that there is hope, there is something else than war.

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For that matter, I would like to do it somewhere else as well. Anywhere that we can do it and help; anywhere where there are kids I would love to do something. Lebanon is no different. Lebanon is no different.

And I am doing a lot for the education over there, I think. And I owe it to Lebanon for the first eighteen years of my life. In a way, I have to help, and I will help. But I will only help in terms of enlightening people and educating people. I'm not an advocate of spoiling a person to the point where they don't do anything anymore.

I would like them to work. I would like them to be prosperous. I would like them to be happy. And I would like to only see Lebanon in the news for beautiful things, not here about bad things at all or terrible things that happen.

And I believe in the past few years they started to pull their act together and get out of this.

No, in all fairness I could say, in all honesty, that I lived outside Lebanon more than I lived in Lebanon. And, most importantly, I lived my adulthood outside, which means I got to meet people at a different level of knowledge, at a different level of *awakeness*. If I can use that word in English, I'm not sure.

But I was more awake. I was a kid, you know. I wasn't even aware I was in Lebanon, right? I was aware that I was in Lebanon at age fifteen, which at that time I didn't care much; I was a fifteen or fourteen year old kid. Then, by age eighteen I left. So I just have vague memories of things.

But the concrete memories are, when you get sick, you go to the hospital. And half of the company comes and sits and help you through it. And half of the people that I never saw they were there before me, they came, they sat down, they held my hand, they prayed for me. I then realize how important life here was for me.

That's basically what I can say about myself. Nothing more, you know?

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JF: Then why don't we end for today? And then hopefully we'll be able to speak with somebody else in a couple of months, more about what you do at Nintendo and Digipen.

CC: From the business point of view?   OK, good, that's great.

JF: Thank you so much.

CC: Thank you.

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