

Transcription of Assistive Technology for Early Intervention – Part 2
Amy Henningsen

This is Amy Henningsen and we're back here for part two and we'll be talking about positioning, play, computer access and a variety of other things. Heather wanted me to tell you who I am. My background is as an occupational therapist. I've worked in developmental disabilities for 30 years, so I guess that dates me. I've primarily worked in the area of pediatric occupational therapy, so that's my background. As an occupational therapist, you go through school and learn a lot about adaptive equipment and so I think occupational therapists have been working with assistive technology since they've gone to school; however, I formally got into it in 1986 over in Colorado when I worked with augmentative communication teams for the school districts and then when I moved to Utah in 1987, I helped begin the UAAACT teams here in Utah. So that's my background. I continue to work with assistive technology. I have my Assistive Technology Practitioner Certification and I also work in the early intervention program, so that's who I am. The Utah statewide Assistive Technology Program is making this training available and so we will proceed. As a review, we discussed this last time, but assistive technology is any item, piece of equipment, product whether acquired commercially – for example, this could be a piece of assistive technology because you can just bang the keys and it will make music, so that could be a commercially available product. A modified product – this is a book that was scanned and made into an accessible book with some early literacy components to it, so that's a book that has been modified or customized and those would be things such as wheelchairs and positioning devices. There is a lot of legislation related to using assistive technology and early intervention programs and we covered that in our last session; however, it's also on your PowerPoint if you're interested in going there. In terms of infants and toddlers, we're primarily looking at communication, positioning, mobility, play and environmental controls, activities of daily living and learning. As a professional, we go out to do assessments and to come up with products; we look at some of the assistive technology assessment and design processes. I don't think that's anything we're going to go over here. I just want you to know that there is a process for it. Primarily at home what we're doing is looking at the AT assessment and the design steps. First of all the mother or father is saying, "I wonder how I can help Johnny play with a toy – I wonder how I can help position Johnny so he can eat better?" Then the mother or the clinician starts, "What if I tried sitting him up a little bit more or what if I tried to provide this type of toy?" Then as you're doing it you're going, "Hum, that didn't work – throw that one out come back and try it again." So you add something and then suddenly possibly if you're lucky it will work. So that's the informal assessment and design process. We went through this last time. We talked about positioning. I brought a few more products with me so you could actually see them. This is the famous boppy pillow that we can position kids in any number of ways, anywhere from being prone on their tummies where you eliminate some of the gravity, you can have them supine where you're getting more what we call physiological flexion, the legs are flexed and the head is flexed. You can assist them in sitting by surrounding them by this type of device. There's one other one – oh yes, side lying, or if you want the child to play in side lying, you can get them into this type of position and have a toy in front of them. I'll go through

some of the pros and cons of the different positioning as we go, but prone is the first developmental position that we normally work at and we're looking at upright head control, so it's very important to get kids in this position. Doctors are just coming back to the realization that having kids sleep on their pillow is different than not having kids on their stomach. For a long time we've been having a situation because of SIDS where kids are recommended to be on their backs and parents have carried that over into the care of their children, so we've had a lot of problems with kids tolerating being on their stomach. They cry, they fuss, and they flip over, any number of things, so it's very, very important to get your child on their stomach. So you can use anything like a boppy pillow that eliminates some of the effects of gravity, or you can get in front of a child in this type of position on the floor with them and so you are supporting them at their shoulders and you're getting face-to-face contact. That's a really nice way of working with kids on their stomach. You can also use the couch just like you would use a boppy pillow where you position the kids over the edge of the couch and like I say, for a lot of kids that I work with who are unable to get their heads up when they're lying flat on the floor, if they have a little bit of a slope, they are much more able to get their head upright. Okay, in the supine position, this is the one that discusses the position in prone and the objective is the head control against gravity, prone extension and upper extremity weight bearing. A lot of control of the arms develops through weight bearing through the arms, so as kids are pushing up in that position, it really helps their shoulder stability and their ability to reach out in space. The side lying position I showed you that on the boppy pillow. There's also an example on the PowerPoint of one that we made at the Lab. This side lyer is made out of plywood and then a piece of foam put over it and the idea behind side lying is that you're able to put a child in this position, which is usually anywhere from two to four months, kids are starting to get into that side lying position. What's nice about it is if you have a child with a physical disability, because of the elimination of gravity, a lot of times they are more able to access a switch or toy and also get their hands to midline. So, it's really a great position to put kids in and also promotes eye hand coordination. For kids who normally may be positioned in a certain way, you may want to get them in that side lying position so you have midline orientation and midline at the hands so the kids can play. In sitting we've done a number of different things. The boppy pillows – a lot of the parents use. I spoke about this the last time and this isn't the one we have modified, because the one we modified is actually out in the field. What we've done is taken these bathtub rings that we got at Deseret Industries and we've taken off the suction cups and mounted it onto a piece of plywood so they're stable, but for kids, this money is a little small for this, but if you have a child who is working on sitting and wasn't quite able to support or maintain an upright position, this is really a nice way, because as the kids go to fall, they don't necessarily totally fall, so it gives them an opportunity to right themselves. We had a mother who picked up two or three of these at the DI or in garage sales for us, so if you need one, give us a call. One thing that we had to do with this is we cut the vertical risers because we were having a hard time getting the bigger kids in and out of this, so we cut the risers and then we put in a wooden dowel rod so the ring is actually up higher, so you can adjust it in that way. This is the bumble seat that I was talking about last time. This is a molded seat. It's like one of the molded insert seats on a wheelchair. It is made out of plastic and is really easy to clean and is well molded. What's nice about it is that these sides provide a lot of support for the kids. Once again,

if you have a child who is beginning to sit, but doesn't quite have the upright control to be able to sit, this provides a really nice support mechanism for them and it also now comes with a tray so the kids can have access to play. Another thing that we have done with our sitting devices is we make little PVC toy hangers, so if you are working with a child, to have them reach out into space and play with toys, you can put these on little bungee cords, you can put them on little key rings that are coiled to make them bounce, you can put different types of paper, different types of texture, anything that will interest the child. It allows them to reach out into space and to play with the toys and have it come back to them. I will be showing you how we cut the PVC pipe. PVC pipe can be a really nice way of adapting toys. Another thing that we've done, actually this is from Beth Dennison who is our vision specialist, she's used a lot of this plastic peg board that you can get at Home Depot. It's this type of material, just like a regular pegboard but it's plastic. What she does is put these together with those plastic ties that go around and feed through themselves and then they tighten up, so it becomes a little triangle and then she'll put a lot of different toys here and especially if you're working with children with visual problems, she uses this to put a lot of different textures on, pieces of carpet, little plastic pan cleaners, sponges, or anything that is of an interesting texture, hair brush, so that the kids are able to reach out into space and find things that they may find interesting to play with. This is a really nice activity if you have the children in side lying, you'd be able to position toys on this pegboard. Those are examples of the different types of seats. There are also of course a lot of commercially available seats. The bumble chair costs around \$50 with the tray. The adapted chairs are going to cost you anywhere from \$200-\$250 or more for a chair. The other thing that I have on the PowerPoint is that little swing and what we did there I think I explained this last time is we got a swing that you can plug in and then what we're using is a Power Link attachment and this is the Power Link. This device allows you to take an item which is AC power and put it into a switch latch mode. So what I'm able to do is plug in my item which is going to be these lights. There's a switch input device right here, so I put that in and as I bring this up there are a variety of different settings you're able to put this on. You can put it on for time for seconds, you can put it on direct, which means if I hit the switch it's on, if I take my hand off it goes off, latch which is I hit the switch and it goes on and remains on until I hit the switch again and another timed mechanism for minutes. So if I had it on seconds, this is a really nice training device for teaching kids to use switches. If I hit the switch, the lights will go on and then within a few seconds in theory they go off, so the child has to reactivate the switch. The other thing with the Power Link is you can have children involved in all different types of different activities. You can help them prepare their meals, because you can plug a blender into this, you can plug a fan into this, and you can plug your CD player into this. There are all different types of things you can do. It's actually considered an environmental control tool. You can have lamps plugged into it, so any number of things. This particular one allows you to operate two different devices. These run about \$350. They are pretty costly. We're lucky to be able to have access to a lot of these materials. We use the switch latch timer with the plug in switch and as you can see on that picture, there's a little switch that hangs down that is called a wobble switch. It's one of my favorite switches for young children, because when you hit it, it activates very easily and they can bat at it and it will go back to the original position, so it's a very nice switch for young children. So when they hit the switch, it would operate the rocker. It

would stop and then operate again. These are the tri-wall seating systems that we talked about. I didn't bring one along this time, but these are made out of cardboard. What we do is we take just regular cardboard and cut them into very similar shapes and then we put a piece of plywood over it and apply the glue. You have a question? We have a question from Wendy Hansen. She asks, "Can the Power Link be purchased locally?" Not that I'm aware of. The Don Johnston catalog would certainly have it, Enabling Kids would have it, the Computer Center down in Salt Lake will loan out some equipment, especially if you're involved with the school UAAACT team. I hope that answers your question. I think it would be terrific – I'm up here promoting that we get an early intervention library, so I think that would be great to add to our library. So to make the tri-wall, we've taken plain white glue – Elmer's Glue – and we paint it onto one side of the cardboard and we stack the cardboard into three levels and then just like you would do with a flower press, you take a piece of wood, have a piece of wood underneath it and on top of it and we use these quick grips to put everything together. I can't remember the names of these all of a sudden – vise grips. Yes we use vise grips to squish it together and usually after a day it's solid enough to take apart. What is nice about tri-wall is it is very, very strong. For example, I've made things out of tri-wall that I've actually been able to use as a step stool. The other thing that's nice about it is that it is inexpensive and I think anything that we can do in early intervention that is either easily recycled, or we can make it at a low cost and just discard it is so much better than getting specialized equipment. The other seating system that is in the photograph here is this high chair. A lot of high chairs come now with recline, so the back will move back. That one is also height adjustable, so the child can actually sit at the dinner table with their family. These are some of the other standards that are available. The first one that you see on your left, I think it's your left, is one that we built at the Lab and it's just made out of 2x4s. We made some adaptations for it, because we were lending out this equipment, so it used to come just where it would lay over the edge of the counter, but since then, we have added the base which gives it a level flat spot to lay on the floor and also a vise underneath so it attaches to the counter. All those were for safety purposes. It was a great way of having kids be able to work up at the counter with their mother, the little girls love helping their Mom's cook, cutting out cookies and things like that. I have no idea what the cost of that would be to make. I often recommend that you go to construction sites. There are a lot of 2x4s in pieces and we don't need a big piece of 2x4, we just need a little piece of 2x4, so a lot of the stuff I think if you're a good scrounger, you can come up with. The commercially available standers are usually anywhere from \$800-\$1000, and the one that is shown there is from the Sammons Preston catalog. That is what they call a tri-stander. You can put kids either in prone or supine and I think the other one I think you can actually have them down on their stomachs or the free stander too. There are other ones available. The little boy who is playing with a toy by the ladder, that was a device that his family made and they specifically made it because they were working on having him come to stand, so they built this into their house and they had the little railing so he could grab hold of the railings and pull himself up to stand and then they had a variety of toys there. I think there are a lot of different creative ways that you can work on some of these positions and still make it fun. I think one of the things that I hear from people other than OTs and PTs are when they complain about kids who are put in standers and left in the corner, or put in a stander while everybody else is sitting on the floor. I think it's real

important that we include kids in activities where they are actually doing those things, for example, cutting out cookies at the counter. Another fun device that I recently found from one of the parents who recommended this was a bungee baby bouncer. This is a great little device. You can see the picture here, this little device goes around the child and velcros and then they have a bar that attaches to the door and it is specifically made for kids to jump up and down. However, the mother that I worked with used this thing for all different positions. She would fix the strap so her baby could actually be on his stomach on the floor but being supported upright a little bit. She was able to lower it down enough that he was able to practice his sitting while he was positioning in that if he got wobbly, he wouldn't totally fall over. She was also able to get him into a four point position. I found this at our local Stork's Landing. It cost me \$40 or \$50, but I thought it was such a nice piece of equipment that it was something worth buying, so possibly we could even copy the design – I didn't say that (laughing). I'll go to jail (laughing). Other mobility devices, we've used a lot of these little prone boards with the foam over them. They've worked really well, because we've been able to raise the front of them so the kids don't propel over the front. Obviously all of you are familiar with walkers. There are all kinds of different walkers, there's prone or ones that you push, ones that you pull, ones that come with support – there are a zillion different types of walkers. I think sometimes we forget about the common devices that are out there. Some of the plastic toys that are available to kids are very age appropriate and everyone's got them. They are what I would consider a universal design. You take something that many people are using and you are adapting it so a child with a disability can use them. I'd like to talk quite a bit about powered mobility. I'm really – that's me. Shane's wondering where the phone is coming from – it's my phone I'm afraid. Anyway, powered mobility – I'm a real proponent of powered mobility. I know there are a lot of people who feel that if you give a young child powered mobility that they won't be motivated to walk and get around or that they may not get much strength as they would get by propelling a manual wheelchair and I think that manual mobility is great and very appropriate for a lot of individuals. I think for those reasons and other reasons, but I also think there is a time and place for powered mobility. The reason that I look at that is I know that the children that I work with who are walking in walkers, the minute that they go outside and play with their brothers and sisters and they are outside in the yard, the child is no longer able to engage in play with their siblings, because they either can't walk on the grass or the kids are running around and they can't keep up with them. So you're really segregating that natural social interaction between kids if they are unable to keep up. There are a number of different ways you can do this – your standard bicycle is one way. Stan Clelland at the Assistive Technology Lab here at USU has adapted a lot of bicycles for individuals and we're very fortunate up here in Logan, because we have Stan who is very good at adapting equipment and has helped hundreds of people adapt different equipment that they need individualized to them. We've been very fortunate that way. So the adapted bikes would be one opportunity to get around. Another one is the little motorized vehicle like the little Jeep that is in the PowerPoint. That was a Jeep that was commercially available and at the time we had adapted that little Jeep to a joystick, because we wanted to try to develop some type of motorized device that a child could drive around with a joystick that could help them justify getting powered mobility, because oftentimes with young children, they want guarantees that these kids will be able to use powered mobility when they are

going to have an outlay of \$8,000-\$10,000 or more. That was one thing that we were looking at; however, the little boy in the chair now, now that he's a little older, probably could have operated it with just a foot pedal and steering wheel. There are those children, for example children with Down Syndrome who are very capable of driving a device like that; however they are unable to keep up with their peers, so that might be a nice solution for them. What we have been doing at the Techno Tots program is because we recycle a lot of equipment through the AT Lab is we were able to find some discarded older powered wheelchairs. This one is a Quickie chair and as it turns out, anybody that's familiar with seating and mobility will see that the back of that chair is upside down. The reason that it is upside down is because we were trying to cobble it together to work for the kids and we were able to put an anterior chest support over the front of the child with it positioned like this for it to work. Initially we were using the joystick to have her operate the chair and because of her spasticity and because of the effects of movement when she operated the joystick, the movement would cause her to go into what they call flexion pattern and pull her arm back, so she could be going backwards in circles for a long time, just totally loving it and getting some nice input, but not getting very far down the sidewalk. What we tried to do is we've adapted it with switches and we're actually in the process of working on this is to get the control box that will allow that powered wheelchair to be operated with a switch. We've had the wheelchair rep come up and give us a hand with that and that is very efficient if you are able to hit one switch and have it go forward, the kids are pretty instantly able to operate that. One of the drawbacks of assistive technology is the amount of time it takes you to adapt these types of things. It sounds like an activity that all children who are non-ambulatory who have the cognitive abilities to understand should have an opportunity to use a powered wheelchair, however the amount of time that it takes – where do you get a powered wheelchair, how do you adapt it to work? That's the whole thing with assistive technology. Typically the products are very individualized to a specific person. Heather, if you want to grab my vest and throw it out the door you won't hear that phone ring. I apologize. So the ideas of using assistive technology are really good, however the reality is that it is very time consuming. We have the luxury of having Stan up here at USU. We have the luxury of having the UATP so that we have some additional sources for some of the equipment. This stuff can be done, but it is very time consuming and labor intensive. The children love it and they can benefit from it a lot. I'm going to shift over now to computer access. This is another portion that we looked at with our Techno Tots is we wanted to introduce the use of computers. One of the first things you'll find is that most infants and young toddlers are basically working on simple cause and effect types of software where you hit a switch and something happens, or you're working with making simple choices. The one that is on the screen that has the yellow and red stripe, I actually gave you the website for that, which is www.northerngrid.org. That's a wonderful website. They have an online cause and effect software called Sensor Switcher. They give you teacher documentation. It allows you to go in and you can choose the pattern that you want. You can use the colors that you want, so for kids especially with visual impairments you can choose the yellow with the red or vice versa. You can use it a number of different ways. The device on the left is an interface that allows us to plug a switch into the mouse port or the track ball port. It is a large track ball and as you can see on the very far left, there's a switch going into that portion of it and that's what allowed us to go ahead and access the

switch cause and effect software. I took the picture on the right just to show you a set up. Typically what we do is we either have the high chair scooted right up to the table, or we have the computer screen right down on the high chair tray, because we want to get really close interaction. It's been really exciting to watch the kids. I think we had one child we had to prompt to make the connection between the switch and the screen. Overall, the kids love hitting the switch and they would go up and look at the screen, so that was a really nice transition for them. One of the things that we've made in the AT class is what they call a mouse house. This comes from Linda Burkhart who has done a lot of really nice low tech type of products. She also has two switch books out and I put her website down on the bottom. She's just a fabulous woman. She's been working with children with severe multiple disabilities for a very long time and she's come up with some wonderful creations. On her website she has the directions for the mouse house. What you do is you make it out of cardboard and out of foam and you put the mouse here. This one got broken. It's one of the drawbacks of doing some of your own products is sometimes you have to do maintenance on them. There should be a little end of a glue stick attached here. So what happens is you fold this together and then as the child hits the box, it activates the mouse which activates the cause and effect. So it's making yourself a small switch. The directions are there, but I would recommend going to her website. She is also the individual who has two books out on different types of switches. She has switches you can pull, penny switches where you squeeze the pennies together to promote pinch. She has two books full of them, so I highly recommend those. Some other ideas: fabrication and use of a single switch technology – Tim Weston and I hope he doesn't mind that I'm using his name again. I emailed him to ask him permission, but I didn't hear back from him. Tim Weston belongs to the Davis School District UAAACT team and he has developed a lot of directions on how to fabricate and use single switches. He has used a lot of the little closet switches that you can get for a dollar at the dollar stores. You hit the switch and it turns on the light and he has adapted those into switches. He has also figured out a method to get a computer mouse and adapt it so you can plug a switch into that. I put down at the end there is a UAAACT website so you could reach Tim that way. Also, Craig Boogaard from the Computer Center gave me this source called Ross' Freeware. He works down in Davis County as well and he works for the school district and he's created a lot of nice switch activated early learning programs, so you could find out from them about that as well. J.R. Cooper is has commercial site, but he does a lot of cause and effect software. He also sends adaptations for adapting a mouse. Heather? The question is asked for the websites for the mouse house and also the northern grid. Are those included on the handout resources? No. Do you want me to go back and read those? Linda Burkhart's is Linda@LBurkhart.com and her website is www.lburkhart.com. So J.R. Cooper has a lot of different lower basic software. Switch Basics, I gave you a phone number. They have some nice software that's appropriate for early learning. The phone number for Switch Basics is 805-396-8676. If you want to obtain a commercially available mouse for your computer, you can get an Orbit from Remington and they already have a switch adaptation link in there, so you could purchase that. I want to say \$150-\$200, but I'm not sure – I should know that. Here's that website for the northern grid, they have that cause and effect software, they have teaching materials, and documentation and it's a really nice website. In terms of play, some of the obvious ones are the switch adapted toys. If

you look at the PowerPoint, there's the one that has the little penguins that if you activate the switch, the little penguins go up the stairways and slide down. We have the little switch that operates a fan. I've done those switches myself just using a battery adapter and a switch, so you can go out and buy some of those jelly bean switches that you can get in the summertime for a dollar and adapt those. We've had a hard time finding the battery operated toys. It used to be that we could go out and you had an on and off on the battery operated toys. Now they have ones where you have to squeeze the pressure switch in the device which operates it. Stan at our Lab has figured out a way to adapt that so it is in a latch function so if you hit the switch it turns on and if you hit it again it turns off. Those have been real tricky. If you find anything like a flashlight for example, you can put a battery adapter into a flashlight and if you hit a switch, the light goes on. That is simple cause and effect. Any of those types of toys are very easy to adapt. One of the things that you want to do with that is if you do get a battery interrupter, where a lot of these devices have the little areas in the back where the batteries go, what you want to do is take a file and notch an area out so your wire isn't getting squeezed between the compartment, because that will break your wire. The other thing that is nice to get is what they call a switch tester. This is just a little device you plug your switch right into and when you hit your switch, it tells you whether your switch is working or not and that might seem like something of not very much importance, however I've worked with a lot of switches that don't work and you're trying to figure out why they are not working, is this a toy that's not working or the switch that's not working and for a relatively low cost, you can get the switch tested, so they're pretty handy to have. There are also a lot of toys that the kids can access just by using a gross movement pattern, so with the piano, anyplace they hit they're going to get some feedback. The little crab that's on the PowerPoint presentation is one of the adapted toys and if you hit the top of it, it makes music and goes across the table and back. One of the toys that our kids in the early intervention program have really enjoyed is the beaded chimes that are back behind the fan and the little turtle on the left hand side. With the chimes, if they brush against them and they hit the horizontal bar at the top it turns on some really pretty music. We've had some beautiful interactions between kids playing with that chime, taking turns, looking at each other and it's really been fun and I underestimated the positive results that we got from that toy, but it's really been a nice toy. Down below is a commercially available puzzle with some knobs on them that can make it easier for kids who aren't able to grasp. Those are very easy to adapt. You just go to Home Depot and get little cabinet knobs and screw them into the puzzle and that way you can make puzzles that aren't very easy for kids to use who have motor problems into an easy puzzle for them to use. Those ideas can be used on a lot of different things. One of the things in terms of assistive technology that we look at is the features that the toy brings, for example the feature of the knobs is that there is a larger area to grasp. It has a grasping shape to it so it is something that promotes grasp. The switches that you use can use a really gross grasp. You don't even have to be able to do something like pick up a knob. When you're evaluating the kids, you're looking at what their movement potentials are and how are you going to interface the things that you want them to accomplish. The goal is not assistive technology. The goal for example with play would be that Johnny is able to independently play for such amount of time at home and maybe the method of doing that is going to be a switch or the chime beads or the puzzle. You always want to be looking

at assistive technology as a way of obtaining the goal, not the goal in and of itself. I'm going to go back to this one for a minute. This is similar to the toy frame. This is an eye gaze communication system and Diane Bryans from Colorado has done two books called The PVC Book Simple Solutions and we have both of those books and we've made a number of products. This is one of the products that she shows the design. There's adapted seating and adapted play. Let's see if I can find some and of course when I'm looking for it I can't find it but I'll show you a couple more. We have the Eye Tran. These are Hello Tellos. They are just PVC pipe and they make little telephones and you when you talk into the phone it amplifies what you hear, so if you have kids who have auditory processing issues, this can be a really fun toy and the infants love it. They love talking in this and hearing themselves talk, so it's really a nice communication device. I wanted to take a little time and just show you what some of these products with the PVC pipe; this is really easy technology to use. All the directions are in Diane's book, but these are PVC pipe cutters and this is obviously a piece of PVC. So all you would do is make your measurement and it's funny at the Lab, one of the things the students have a hard time knowing how to open these, but what you do is pull it back and that brings the blade open, so if I want to open the blade, I pull it back. I would put the PVC in there and then squeeze it and it makes a really nice cut. I used to cut this on the – there we go – what happens is it gets between these teeth, so you have to work it a little bit, but like all assistive technology, it's always more complicated than what you might first think. Stan – these aren't working. Anyway, because my PVC pipe cutter is not working, I would take it over to the band saw and cut it. Actually if you get a pair of pipe cutters they work very well. These have gone through several semesters up here at USU, so they're getting a little worn out and I might not be doing quite what I need to do. Anyway, they are very easy to use to cut material. Another thing we've done with some of the different shapes, as you can see this is just a T bracket and one of the OTs, Carolyn in our Up to Three Program came up with this design where she just took the T shape, put some foam in it, just kind of a short piece of foam that had a hole in it, let's see if I can show that, and you push your crayon in and place it in. What it does is allow children who lack fine motor dexterity to use more of a gross grasp to operate their crayons. If you think in terms of having a preschool child to have a couple of different crayons, what you could do is just take a board, drill a hole in it so you could just drop these into the holes and then the kids could just choose what they would like to use. The Sammons Preston catalog is a catalog that we use a lot, mostly for ideas. It's a huge catalog. It used to be the Fred Sammons catalog and then they joined up with Preston and they have all types of medical technology and assistive technology in here. They have materials for splinting, for braces and for all different kinds of things. The tubing that is in this pencil actually comes from them. They have an area where they have adapted feeding material and I think that you can get this foam in that section. These catalogs are worth having. We have them as a resource and we look through them all the time to help us develop our own ideas, plus you can order a lot of good material through them. So that's the PVC portion of it. When I went through the information on the tri-wall, I was saying you could glue the different levels of the tri-wall together and then vise grip them together and then come out with your tri-wall, which is three layers of cardboard. You can cut that with a variety of different things. This is just obviously your basic skill saw, which is primarily what we're using at the Lab, or this is just a lower tech device called a coping saw.

These saw blades tend to be thin and they are quite flexible, so if you were cutting out a design and you needed to go around a curve, the coping saw is really helpful for that, although the skill saw is a lot easier and faster to use. Okay, we're going to keep going here if I can get myself unhooked. Another thing we look at is assistive technology for eating. I think most of you are familiar with scoop bowls. They are in the Sammons Preston catalog – they're yellow bowls and they have a scooped edge on them. They also have material that makes things non-skid. This is a commercially available material called Dycem. It does not allow things to slide. It has a lot of friction to it so it doesn't move. When this stuff gets worn out because it tends to pick up a lot of dirt, all you need to do is wash it with soap and water and it regains the original stickiness. This is some commercially available material from Lowes or Home Depot. It is drawer liner but it also acts as a non-skid material, so if you have somebody who is trying to eat out of a bowl and that bowl is moving all over, you are able to use a piece of the non-skid material to stabilize that. They also have bowls that actually have suction cups on the bottoms and I've seen those commercially available as well as through the special education catalogs. This device is what they call a universal cup. This is one of the primary pieces of equipment that as an OT you learn how to use, because for individuals who have spinal cord injuries and don't have grasp, it fits around the hand and it has a little opening so it allows you to put different things in there. So if you have someone who is working on feeding, but they are unable to hold onto the spoon, you can use something like this that stabilizes the utensil in their hand and allows them to do the scooping. That's one method of working on that. Another way, if you have someone that has some grasp, but not a strong grasp is you can build up the handles on utensils. We've used things like round rubber tubing, we've used pipe insulation, all types of foam rubbers out of hair curlers, we've put all kinds of different things on handles of utensils to allow a built up handle for people to grasp. This material on here is made out of thermo pellets and it is available through North Coast Medical. It comes in little pellet form and you drop it into hot water and all the pellets join together and become soft like silly putty and then you can form it. It is very therapeutic – you can sit there and roll it and squeeze it and manipulate it. You can use it not only for enlarged handles, you could use it to enlarge a key, so if you have someone who has a hard time turning a key, you could hook it to the key and make a larger handle so they would have more leverage to turn on a key. There are a lot of different products. I'm trying to think of something that would be appropriate for an infant...anyway; anything that you wanted to build up a handle on, this material is quite costly but very effective and very good at particular uses. This is what they call a feeding splint. This would also be in the Sammons Preston catalog and this one works with a universal cuff attachment, but this individual has less of a grasp or more of an inability to hold onto things. So this will allow me – if this spoon will fit in it – it would allow me to put the spoon in here and to feed myself. Okay – I have to show this one to Heather, this is my adapted assistive technology. I have a friend who has athetoid cerebral palsy and one of the things he has the most problems doing is eating spaghetti. I found this spaghetti fork when I was on vacation in Michigan and what it does is operate from a battery and it goes around and it winds up your spaghetti. My friend Jordan was very happy with it – it worked really well for him with one exception, this is where you have to learn how to evaluate assistive technology is that the little switch that turns it on, he didn't have the motor dexterity to be able to use that switch, so even though the

product worked for him, he was unable to use it, so that was kind of an interesting revelation. Another toy that I use a lot with the early intervention program is a cassette recorder with a switch. This is just a RadioShack tape recorder. If I put the player on play and plug the switch into the remote area, I get a momentary switch use out of this. So I hit play, it goes off; I hit the switch (music playing). So the kids always love music, so they can play the music. In order to make it so the children don't have to keep their hands on the switch all the time, you can use this device, which is an Able Net switch latch timer. This switch (music playing) is a little bit different, because the switch I have on here is actually a smaller jack, so it won't work with this, but if I had a regular jack, this would operate just like that Power Net timer did. I could set it on latch, so when they hit the switch, the music would come on and stay on, or I can set it so it will go off. So they hit the switch and it stays on and in five seconds, it goes off, requiring the child to activate the switch. So that's another nice device. These aren't nearly as expensive as the Power Link, because they're not working with AC power. Let's see...early literacy. I didn't get into early literacy too much, just because there's a lot of information out there right now. You can look for adaptive books. I showed you this one that was adapted for a particular child. Sometimes, all you have to do is add Popsicle sticks, like this particular book has Popsicle sticks in order for the kids to hit the flip up. Another technique that people use is the little felt pads that you put under your lamps and things you are putting are your good wood surfaces so you don't scratch it. You can take those and make what they call page floppers. You would take a self-adhered felt disk and you just adhere it to the page. It prevents the book from closing all the way so the kids are more able to open a book. You can also use those silicone dots for that. Another area that I haven't gotten into as much as I want to is using PowerPoint. I know that the PowerPoint program has a lot of potential for early intervention, where you're able to take digital pictures, load them onto your PowerPoint, have a switch, and have the kids hit the switch. You can integrate sound into it, pictures, and personalize it. I think there are tons of things I could be doing with PowerPoint if I had the time and the expertise in knowing how to do that. Of course books on tape are available. Able Data is a huge database that has over 29,000 assistive technology products. I suspect it is far more than that. If you go to the website www.abledata.com, that will provide you with a list of all kinds of assistive technology. In terms of early intervention, there is Baby Power, a guide for families for using assistive technologies. That's through the National Center to improve practice in special education through technology, media and materials. These were all on the resource list that we sent out earlier, so you have the list and the websites to these. Baby Power had a lot of good information on it. I would highly recommend going to that one. One Step Ahead is a commercially available catalog. I call it the Yuppie catalog. They have all the fun stuff. The first place I ever saw a bumble chair was in One Step Ahead. Since then, it has come down the line and now you can get it at Wal-Mart and we can also use it for the kids that we work with, but One Step Ahead oftentimes will have those fun little things like the little cup holders that you can use for mounting systems, etc. Babies Are Us is another one like I mentioned last time. You can get those little vibrating seats that are sling seats. You can get those at Babies Are Us. You can put a battery interrupter and switch in there so the baby has to hit a switch to turn on the vibration in the chair. Tots and Techs is a collaboration through the Arizona State University and Thomas Jefferson University. They are primarily looking research and systems change, but they have a

section full of low tech ideas. The Family Center on Technology and Disabilities is another wonderful site. They have a specific area for early intervention and assistive technology. Lots and lots of ideas. There is more information on there than I can possibly get through. Let's Play. I really enjoyed this website. They had a lot of really nice ideas and strategies to promote play and better access. They are through Buffalo. The Augmentative and Alternative Communication – Connecting Young Kids is an extensive website that covers issues related to AAC and young children. I gave you the website for the Computer Center for Citizens with Disabilities – Craig Boogaard and Scott Baggaley are down there and are very good about giving you ideas and helping you to find low cost solutions to accessing the computer. Creative Communicating – that's Patty Debond's website. She is out of Park City, Utah. She has a lot of involvement in the state and she has a lot of ideas for emerging literacy and early language development. Then I put the website for the Utah Assistive Technology Program on there. That's the information I had prepared. It just seems endless to me. There are so many more things that we could be doing and probably should be doing. I think one of the things about early assistive technology is the whole idea that you have to prioritize the needs and even though assistive technology is on the IFSP, the Individual Family Service Plan and they are looking for those services, if you have a child who is medically fragile, your primary goal for that child is helping that family to keep that child healthy, to get the child fed, to get the medical concerns taken care of, so obviously assistive technology is not the priority at that point. But at some point in time, there are priorities for assistive technology and there are an awful lot of kids who do not have access to play, because we are unable to provide them with the materials to make play accessible to them and I think because of that, we wind up having an awful lot of kids who depend on human interaction rather than interacting with objects and people. I think it's real important that we introduce this stuff now. I hope that someday there is an avenue of bridging what's going on in early intervention with what's happening in the schools, because we all are working with the same children at different levels. I think we're going to wrap this up. We certainly would like you to do your evaluation. You can ask questions if you would like. This is a question time. If you will fill out your feedback sheet – they were either emailed to you or sent to you, so if you could complete those, we'd deeply appreciate that. I'm available to answer whatever questions you might have of me. One of the questions that came up last time was a list of resources for switches and some of the augmentative devices and I would recommend that you go on some of those websites, because they have resource sections on them that would lead you to things like Don Johnston, Enabling Devices, and those types of products. We'd love to share ideas with you folks. We're not the only ones out there doing things. Parents are great resources, preschool teachers are wonderful resources, and UAAACT is a wonderful resource. There are so many people out there doing so many different things, if we could somehow develop some type of website where we could combine those ideas, it would be terrific for all of us. I could give you Stan's phone number at the Lab – he'd love me for that, because he never has enough to do. That's 435-797-0699. We're always looking for low tech ideas. We have a lot of students that we can assist you in developing some low tech products. We have the manpower to do it, so if you have a classroom and you need six adapted books, give us the materials and we'll adapt them for you. Ginger asks, "I was told the bumble was bad for my child to learn trunk control and was a waste of money. True or

how does it work?" Well, there are pros and cons to every piece of equipment and I know historically, I remember at a certain point in time we never wanted a child to use an asymmetrical tonic neck reflex to hit a switch. That was just a cardinal no no and I think a lot of things have changed now where we're looking more at function and certainly if you have a child who is just drooping over the bumble chair and is unable to right themselves, then it's probably not the appropriate equipment at this point in time. However, if you have a child who has some wobbling going on and is working at righting themselves, then I think it's well worth it. I'm glad you brought that up, because one thing that we should never do is put a child on a piece of equipment and leave them, nor should we put a piece of equipment onto an elevated surface where they could potentially fall off. In terms of using the bumble seat, if it works for the goals and the needs and the objectives that you're looking at, then I would use it. Maybe your child can tolerate being in it for two minutes. Great. Maybe down the road he'll tolerate being in it for four minutes. It's a tool and if you have other tools that you can use instead, that's great, but I think the bumble seat has a place working with our children also. You better hurry and ask your questions, because we're all going to shut down, Shane's going to go home. Thank you very much. I just want you to know that materials and philosophies and strategies are changing all the time and I think that the whole idea is to keep your mind on the goal and do what you need to do in order to hopefully accomplish that goal, so good luck to you and I hope you'll share ideas with us too. Bye.