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**Captions**

**(M1B)**

**Integrating Technology Successfully**

**Nancy Castle**

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INTEGRATING TECHNOLOGY SUCCESSFULLY

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>> NANCY CASTLE: Good afternoon, everybody.

We're going to go ahead and get started so we can get you out of here on time for the next presentations and give you time to walk to get to them.

I am Nancy Castle.

I am a faculty member at Northern Illinois University.

I am co-presenting today with Kathy Darroch from National Technical Institute for the Deaf.

She is the manager of interpreter services here, and we sort of combined forces to put together a presentation on how to use technology successfully.

And so what I'd like to do is to point you to handouts that are being handed out. We did the kind for you with the place for notes so you can feel free to take notes as you go along. We are -- the PowerPoint presentation is posted to the conference website.

The paper is not yet, however, and I want to let you know that we will post it within a day.

We did a little tweaking before this morning.

We did a little bit of tweaking and if there are certain questions that come up, we may tweak it a little bit more before we put it on the website, just so it's fairly consistent with what you all heard today and what's going to be videotaped for us.

So I wanted to start by saying: Technology is everywhere.

If you haven't picked that up at this conference, it's probably why you came to this conference.

It is -- it is everyplace you look.

It is in fast food restaurants.

It is in -- it's in your living room.

It's in your kitchen.

Technology just can't be escaped. The youth of today really expect it.

They grew up with it.

They look for technology as part of their everyday activities.

Teachers, however, those people trying to work with the youth of today, are not necessarily as accustomed to working with technology or having it, and that's especially true if the teacher is older than about 25. And so if you're in my age bracket, which is older than, let's say, 35 --

(Laughter)

>> NANCY CASTLE: -- then you, too, have probably faced the day when -- I mean, when I did my research for my degrees at the University, I did punch cards.

That's how -- I mean, the computer was a big room filled with computer.

And now I could probably do my statistics on a Casio watch.

And so the technology has just grown by leaps and bounds.

And we, as teachers of that older generation, are sort of forced to stand back and reevaluate what we do and how we do it.

Because, of course, what's the most important to us is engaging the students.

Nobody likes to stand in front of a classroom and look

out and see that everybody's just bored crazy.

I mean, you're in the field that you're in because you like it.

And, for the most part, you're hoping to convey to others the enthusiasm you have for your field, and so you just really have to work at sort of meeting them at their level. But that's a daunting task for us older timers.

How do we start incorporating those things that the kids really grew up with, that they need to be a part of their classroom experience?

How do we do that?

Well, we do it by thinking about something called the universal design for learning, and I would like to take credit for inventing this, but I did not.

It was invented, as you'll see in the paper, by some people out in Massachusetts called CAST, and at the end of your handout, you should have some website resources for CAST.

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The universal design for learning is really based on the architects' universal design, and universal design in the world of architecture is the design of products and environments to be usable by all people with maximum potential, and no adaptation.

Okay?

That's their technical expression, which you can find that exact quote in the paper, too. What it means is that universal design in architecture is the kind of design that people do that everybody can use it.

It really benefits, in particular, people with disabilities, but everybody gets to use it. So one big example are

door levers.

Instead of round handles to open and close a door, levers.

And that came out of universal design.

So universal design for learning looks at taking that same basic tenet of, you know, how do you maximize use for everybody, and it then particularly benefits people with disabilities.

So how do we do that in instruction? There are four guidelines that CAST presents, in terms of designing curriculum and thinking about universal design for learning. They talk about multiple representation of content, flexible means of expression, flexible means of engagement, and flexible means of assessment.

Okay.

Now, one of the things that we promised to do today was to give you some decision guidelines, and, in fact, we thought about it as a kind of a decision tree.

Which, in its pure form, would be if you make decision A, then you have to go to A or B, and if you choose this one -- it sort of forces your decisions.

What we realized was, in incorporating technology and dealing with technology in the classroom, it's not as clear-cut as a tree.

In fact, I commented to Kathy that I was thinking it was more like a decision dandelion, but if you don't know what a dandelion is, it's kind of a weed but it's got roots that go everywhere.

Makes them almost impossible to pull up, to kill.

You really have to kind of spray them to kill them.

But the thing is that with universal design for learning, you've got multiple decisions you can make, and it's not

as easy as if you choose this, then it's going to force you into making these two decisions.

So to give you some decision guidelines and to really help you to tackle this daunting task of incorporating universal design for learning into teaching, what we'd like for you to do is to focus on just two of the four.

Okay?

We find it's easier when somebody hands you a task and it's overwhelming, break it down to smaller components that you can take on. And the two smaller components that we'd like to address today are multiple representation of content and flexible means of engagement.

Okay.

If you focus on those two, that's the best starting place in terms of making changes to your curriculum. Okay.

When we talk about multiple representations of content, what that means is providing the information many ways in different ways. And in doing that, I worked on a project at my university which is out in the middle of the state of Illinois.

It's due west of Chicago, where we're also having this miserably hot weather, and in doing that particular project, what we found was that for faculty -- and I was at a presentation this morning, and Daniela who is here today made the comment that some faculty are just really rigid and are not very prone to making change.

And so working with a project where what we're trying to do is to help faculty change how they deal with students with disabilities.

What we did was we had them think about learning styles, and that's a very common kind of approach to dealing with people in teaching.

You can go on the web and we gave you resources for

that.

There's -- I mean, just type in "learning styles" and you'll get about 3,000 hits on it. But what we did was we asked people to focus on learning styles in that paradigm that says that there are some people who are auditory learners, some people who are visual learners, and some people who are tactile learners.

And by breaking it down that simple, some people learn better if they can see it, if they can read it, if they can watch it happen.

Some people learn better if they can hear about it.

If it's explained to them while it's happening. Some people learn better by making it happen, putting their hands on and really doing whatever it is.

When we broke it down that simple, the faculty -- a lot of them older than me -- started to see where maybe there was some potential for making some changes to how they approached teaching.

Not just students with disabilities, but all of their students.

And so when we talked about -- like I said, sometimes you'll present the information in a way that people who do better by hearing it will get it better.

Sometimes the other two approaches.

And it worked pretty well. When we talk about flexible means of -- of engagement, however, there are two key things.

Flexible means of engagement -- remember I said earlier we all want our students to be engaged in what we're teaching.

We like our subject matter, hopefully, and we want them to like it too. So they've got to be engaged with it.

Not just sitting and listening to it because the way we were taught was somebody stood in the front of the room and lectured at people, and wasn't nice enough to hand out notes and do PowerPoint presentations.

So as you can see, we're trying to incorporate all of these tenets for you today, these principles. Novelty and familiarity, flexibility of curricular materials.

Novelty and familiarity is probably the key of these two. The way to connect with students today is to -- to do things that are novel and to do things that are familiar. Familiar would be technology.

Familiar would be to include as an example something from -- excuse me -- from what's going on in their culture.

Beavis and Butthead, about 10 years ago.

Today it would be SpongeBob SquarePants. And all of the things that -- I mean, look at their T-shirts.

They're wearing whatever is popular in their culture today.

If you -- if you look at ways to present, to engage them, then you make it broad.

Think about those learning styles.

Instead of just presenting information, talking at it -- talking at people.

You could have students do projects where they get that hands-on and learn how to do it.

You could have students put together presentations where they've got to come up and get other people interested in the topic.

And then you've got two things happening.

One, it's novel.

How many times do students present to students? Two, you've made that group of students hands-on learn the material so they could present it. Okay?

And so if you look at it in terms of the novelty and familiarity, and the flexibility, being flexible enough to allow that, you'll have backup reading material so that if the students doing the group presentation don't exactly cover all the points that you need to have covered, they'll pick it up in some additional way. That kind of flexibility will start to help you to make that kind of connection with the students.

In order to do that, however, you've got to have clear learning objectives, and the number-one guidance that we can give you is: Before you even think about changing how you're presenting information or being flexible in multiple means of presentation, you've got to go back and look at what are your learning objectives for your class.

And if you don't have them written, go back and write them.

Sometimes the learning objectives are dictated by, you know, the state board of education says they have to have mastery of X, Y and Z in order to -- you know, to get out of high school.

Sometimes the objectives you'll have help on that.

But if not, stand back and look.

One of the things you'll notice in the -- on the web page for this conference, and in the -- the book of -- the book of the backup material is that everybody was asked to identify, what are some learning objectives.

So that when you walk out of here, you should be able to talk about this, or you should be able to do that.

Those are learning objectives. Your learning objectives

drive what you do. You should let your learning objective drive the -- drive the way you present information, and then when you present it, you want to try to match to -- oops.

Back up.

Now.

Go ahead one.

Yeah.

Match your method to the topic that's being taught, and to the students doing the learning. Okay?

So you want your objectives to drive what's being presented.

You don't want how you're presenting it to drive it. Keeping that as your big decision -- you know, the part one of the dandelion in the back of your mind, then that will make some of the other decisions a little easier.

One example -- I just read in the Democrat -- what's the -- Democrat chronicle -- that's what I thought, Democrat chronicle here in Rochester, there was an article about a fighter pilot that retooled and went back to teach high school, and he teaches high school math, and one of the comments he made was that his background as a fighter pilot -- he was a Navy fighter pilot -- allowed him to incorporate his experiences into teaching math.

I mean, like here's an everyday application, if you go out to be fighter pilots, an everyday application of math.

And so he felt that in terms of novelty and familiarity, that kind of bringing home the examples, the actual hands-on kind of thing, made a big difference. Okay.

Now, I have to tell you that for some of you, we -- we've been tweaking this presentation up till this

morning.

For some of you, the next slide on your handout says something about resources. Ignore it.

In your mind, put it to the end, okay? Your next slide should be one that Kathy will talk about.

When we talk about novelty and familiarity in terms of working with students today, you've got to be talking about technology in the classroom. And if you talk about technology in the classroom, when you deal with Deaf and hard-of-hearing students, it presents a whole list of challenges that, again, you kind of have to keep in the back of your mind while you're making decisions about how you're going to be flexible and how you're going to do multiple representations of content.

So to talk about technology and dealing with technology with Deaf and hard-of-hearing students, I'm going to turn the mic over to Kathy Darroch. And she will take you through the next several slides.

>> KATHLEEN DARROCH: It's very obvious that I interpret in the College of Liberal Arts where technology need to be at a minimum.

Good morning, everyone.

Or good afternoon. I hope you've had a great time so far and have had a lot of information.

How many people are feeling a little bit overloaded with information right now? Not yet? That's really what I want to talk about, because oftentimes when we're in the classroom, we assume that the more technology I throw in, the better it's going to be.

It's what Nancy said: Teaching in a variety of ways the same information. So how many of you use captioned films?

PowerPoint notes? Work on the computer in the class?

What we here at NTID call smart classrooms, where everything seems to connect?

Those things are all great, but oftentimes we throw them all in together, and it's what I call "bells and whistles."

It creates a lot of visual noise. Now, added on top of that, how many of you have worked with sign language interpreters in the classroom?

(Show of hands)

>> KATHLEEN DARROCH: Oftentimes we assume if there's a communication issue if I put a sign language interpreter in the classroom or other types of auxiliary aides such as a C.A.R.T., a realtime system or C-Print, which is what we use here, if I have a notetaker, the more I throw in, the better it's going to be.

And that's not necessarily true.

You really have to think about how you use the technology you have and the role of the interpreter and how they interface to be successful in your communication.

And that's where I'm going to talk from my experience today.

I've been in the classroom at NTID going on my 20th year, and I've slowly seen the advent of more and more technology.

And actually, rather than make my job easier, I think it's made my job more complicated because it creates a lot more visual noise for myself as well. I do want to emphasize that the classroom is only as smart as the people that are using the technology. So you have to control that technology flow to help the interpreter maintain an appropriate communication flow. I just want to very briefly state, again, for most of you that work with interpreters, you know what the role is there, but really the interpreter is there to facilitate communication

not only between the hearing and the Deaf people in the classroom, but the interpreter is also there to facilitate communication between what I call the breathing and the non-breathing members of the classroom.

(Laughter)

>> KATHLEEN DARROCH: That could be the TV set, the computer that's throwing information out.

The interpreter is there to facilitate between all of those things that are going on at once. They link auditory information with verbal information -- be that sign or spoken -- and other visual information.

Those decisions of visual aids and things that you're choosing to enrich the classroom. I love pictures.

I'm a very tactile, as well as visual, learner so I remember things by one picture and I'll remember this whole slide.

Which is -- and what Nancy and I are hoping to do for you today is not only talk about universal design and how to work with interpreters, but model some of that. If this were an actual classroom, I would actually want Aaron standing here because a lot of the things that I'm saying is on the screen, and how many of you who are hearing love captioning on TV and movies? It helps me.

(Show of hands)

>> KATHLEEN DARROCH: So oftentimes, as an interpreter, if the captioning is there in whatever way, my interpreters a lot of times will refer to it that way.

More is not always more. Sometimes more is less. Before this presentation, I spoke with Dr. Mark Marshark who does a lot of research and right now has focused on some research regarding interpreters, the use of PowerPoints, how students are integrated into the classroom, and some of his initial research, which I've cited here, is under review, but he was telling me that the classroom is using more and more multimedia to

enrich learning.

And the National Council on Disabilities in 1998 issued a big report that you actually can get.

It's fully accessible on -- on the web, and I have the resource there. But they also said, as well, that classrooms K through 12 and post-secondary are using more and more multimedia as well as PowerPoint and other things.

Some of Mark's initial research is showing that while it's actually more effective for hearing students to learn with all of those different media -- multimedia channels happening at the same time -- to watch, to listen, to do -- it does not have the same effect when all of that is thrown at the Deaf students.

And honestly, as an interpreter, it does not have the same effect for us also. Because we're listening to music, we're watching visuals, and remember that as hearing people, we can kind of use our ears in stereo. We can filter in one and listen to another and -- but eyes, we haven't evolved enough as human beings for our eyes to operate independently of each other.

So if more than one stream of information is coming in, the interpreter has to make the decision what to do, and the Deaf students as well have to make the decision as to what to do.

When you're using PowerPoints as well, I'll show you a little bit later, oftentimes -- how many of you give your PowerPoints out ahead of time for -- for your Deaf students to look at?

Some of Mark's initial research is also showing that that makes absolutely no difference in Deaf students' learning enrichment in the classroom.

It does if it's an A/A-plus student that's going to read all the coursework, read all the PowerPoints, think about it, take their own notes ahead of time, have their questions

ready to ask.

For those students, it greatly helps.

For the students that could care either way, it's not.

And for students, whether hearing or Deaf, that don't even open a book before the night before the test, it makes absolutely no difference.

(Laughter)

>> KATHLEEN DARROCH: And Deaf students are just like hearing students.

There are those students in your class. The real point I want to emphasize with this slide is a lot of technology and a lot of visual aids thrown in all at once, without proper pausing, without proper time for the interpreter to process what is important, what you're emphasizing, what the goals of your teaching are for that day, it can become like a 3-ring circus.

So you're not sure what ring to watch.

You have to, in that sense, become the ringmaster.

You have to control where the focus of the information is on. And you controlling that information will help your interpreter to make those right decisions as they facilitate communication. Just some very quick and easy tips for interpreting. I already mentioned the first point.

When any type of visual information is happening, it's always important to make sure that the line of sight is -- gives an ease of communication as possible.

How many of you also move around the room when you're lecturing?

(Show of hands)

>> KATHLEEN DARROCH: Quite a few.

And you don't want to say, "Stop doing that."

Because then you stop -- if you notice, I tend to be a mover.

(Laughter)

>> KATHLEEN DARROCH: And the person who has the camera said, "Could you please not do that?"

I'm really finding it hard to speak because I'm also a very kinesthetic learner.

I actually have to move.

I almost do those infinity walks when I study.

So if you're a kinesthetic learner, you're going to be a kinesthetic teacher and we don't want you to stop, but think about, do you allow your interpreter to move with you? Because a lot of the learning that happens in the classroom is tied to your face, as well as the visual materials you present. I -- you can throw up a visual and if you're going, then obviously the students don't know it's important.

And this is the face I made.

But if I throw up a visual material and I'm going (income demonstrating) and your interpreter is going at great guns and I'm doing this (demonstrating) and you allow the proper pacing, that is learning.

That's information that your students need to be a part of.

Remember, when you introduce technology, don't take yourself out of the classroom. So much learning happens there. And the interpreter is a link, but it adds just a little bit more -- I'll use the word "excitement" -- to the classroom.

Not complexity.

The second point of information.

Think about how you pace information. Oftentimes when I present, because of the lack of time and the way the room is set up, I won't do this here, but oftentimes when I present this workshop, I will hand these balls out all around the room and then I'll ask everyone at the count of 10 to just throw the ball to someone up -- someone and keep that going, all four balls at once.

Then I'll stop the exercise, and I'll ask someone to tell me where their ball went. I had one person do it.

Galena.

The Russian spoken language interpreter.

She remembered exactly where her ball went.

It was amazing.

I thought well, she gets an A for the course.

Obviously she's a brilliant woman.

Most people had a hard time.

Now, suppose that these balls are threads of communication in your classroom. Suppose you're having a group discussion.

Suppose you're having a PowerPoint and at the same time you're explaining something that's not on the PowerPoint. And this is happening in the classroom (demonstrating) what are your students getting out of this? So pacing of information is very important. Remember that visual information needs to happen in a one at a time process.

Not only for your Deaf students, but for your interpreter as well.

Because I've actually been modeling some incorrect

information, due to nerves.

Or incorrect ways of doing things. I've been talking in a constant stream, and a couple times, did you notice me catch Gayle looking at me, like, what face did you say?

What did you do? If you're referring to things on the board, that's the third dot to remember. Use names for them. Don't say "this," "that," "this face," that face."

Maps?

Refer to country names.

Equations?

Refer to the actual names of -- and, again, I'm a liberal arts interpreter so I'm like, "What do they call those things?"

Refer to the characters.

Use as much direct, specific referencing as possible because that will help your interpreter make -- present a more accurate interpretation.

And something we interpreters don't like to admit?

We're not perfect!

We don't get all the information right. We're human beings.

We make mistakes.

So as much as you can do to help us be more accurate, your students will get more accurate information. The same thing that I mentioned there.

Information turn-taking.

Be sure that when you are throwing up PowerPoint slides, that you give people the chance to catch the right

slide, to catch the piece that you're referring to.

If you're using overheads and working with an interpreter, allow your interpreter to stand next to the board and present the overhead. It's so much more clear than them just trying to do the whole thing again. So make sure you are the ringmaster.

You control the flow of communication. And think, as well, if you've ever been in a movie -- and I guess younger kids can do this.

This is a generational thing, where there's laser shows and all kinds of -- and especially with video games.

My son is absolutely incredible that there can be all this visual stuff happening on a video game and he's able to clue in on exactly what he has to do.

But not every student is like that.

So make sure that sometimes less is actually more. Have one piece of visual information presented at a time.

And take the opportunity so that if you are highlighting important information, like I'm doing right now, that the interpreter is able to see it as well. If you use a PowerPoint, don't use it as an Lasso.

.

Make sure that it's there.

And when you say something, allow that 5 to 10 seconds of processing time that an interpreter will use, because if you don't, what is going to happen is, the interpreter will be forced into making a decision about what information will I need to let go? What is the point of this? What do I need to get out for the student to see? And your students who are Deaf and hard-of-hearing will also be forced in making a difficult decision. If there's visual material up, shall I ignore the interpreter so I make sure that I get the visual

information? Then turn and watch the interpreter so that I hope that they're emphasizing points.

And sometimes as an interpreter, I'll -- if I notice a class is like that, I'll work with the student and say, "What would you like me to do?"

Would you like me to hold the information?"

And oftentimes the students and the interpreters at that point will work together, but interpreters have human brains like everybody else's and their short-term memories aren't ad infinitum.

They can only hold a certain portion of information.

So you should be the ones making the decisions about information is important for your students to see and to have access to.

And then in turn the interpreter will be able to make decisions about how to enforce that.

So you're not forcing them to be the ones to change, modify or delete information. You want to hit it all?

I didn't even realize I did that. Oops.

Go back.

There you go. Does anyone have any idea about if I were to give a test and this square holds the key to the information on the test -- I'll give you a second to look at my PowerPoint and see if you could figure out the answer for the test without my even saying it.

Any ideas what I might ask? What do you think is the key information?

Just looking at what vocabulary and what -- what language I have there, what do you think I might ask you about this picture?

>> AUDIENCE MEMBER: (inaudible).

>> KATHLEEN DARROCH: Very good.

Could you say that for everyone to see?

>> AUDIENCE MEMBER: What's it add up to.

>> KATHLEEN DARROCH: Oh, no.

I'm sorry.

Close, close.

>> AUDIENCE MEMBER: Oh.

>> KATHLEEN DARROCH: What one particular thing adds up to. She's very close.

>> AUDIENCE MEMBER: (inaudible) some number.

>> KATHLEEN DARROCH: How many 1's.

How many 1's or what do the 1's add up to is what I was going to say.

The answer for this is actually 4.

And what I'm trying to sum up here is if you're having -- if you're having visual pictures and then you have text, make sure your text supports what you want your students to learn. You can use color coding.

You can highlight specific vocabulary. You can highlight equations. You can give the students a moment to look at the visual. And then offer an explanation. Or you can offer specific directions.

But don't make your students guess.

I would assume that you want your students to learn at the end of the class and don't actually want to trick them, so make your vicious clear.

If you want to teach something -- my mother was a teacher and she always told me the best pedagogy is tell your students what you want to teach them, then when you're teaching, tell them what you're teaching them and then at the end, tell them what you've taught them.

And I always thought that sounded simplistic until I started teaching and I now realize -- every year that goes by, I realize what a wise person my mother was. If you want to hit the next slide. This is just an example. Hopefully you know if I'm teaching this math class, you'll know the concept that I'm trying to get across in a very simple way. The explanation that I have is color coded.

So the eye is drawn to it in a very clear way. And hopefully when Gayle took the opportunity to look up, when I start talking about it, she's not left guessing either. And, again, I took a pause to allow -- oftentimes I'll read through things myself.

That gives the opportunity for the interpreter to read through it as well, so she knows where I'm going with it. And it might feel like you're actually having to do less in your class, but I've learned also in teaching that I'm not always the one responsible to teach everything. That sometimes I can ask students to read things outside of class or have students do group projects together and teach each other, and that sometimes by trying to be the one giving all the information, all I've done is create more bells and whistles in the class, and -- and resulted in less learning. Okay.

So main points that Nancy and I want to -- want to help you remember. Don't make them guess. Use your graphics to help and support what you do. Key information should be as visible as possible. And be very aware of technology overload.

I have slides and things -- or actually handouts that I'll leave here.

I don't think I printed enough, but if we run out, I can

always have more printed. And they offer some really good information because at the end, Nancy will talk about our resources a little bit, but I also have served on a grant at NTID called "project access," where we have provided training.

On working with interpreters and so forth, and I have some of the slides and materials that you can look at.

The other one I have is the NCI, the National Captioning Institute, which has a wealth of information that's available on the website.

They offer information on how captioning not only benefits Deaf and hard-of-hearing students but it benefits all the students.

And it's one of those universal designs, so it presents auditory information in a visual way, and an interesting side note.

Many of our international students will look to see which courses here at RIT are supported with interpreting services and other access services because they say those are usually the most accessible courses and they like those.

They'll go in because they know captioning is there, and it benefits them as well.

Sometimes students with learning disabilities hear at RIT will do the same thing.

They'll look to see which courses are being provided with access services, because they know that they're going to get a rich learning environment that the teachers have given in thought to universal design to help improve accessibility for them as well. And at this point, I will turn it back over to Nancy.

>> NANCY CASTLE: Okay. So it's probably become very clear to you now that this presentation wasn't about, "Here's the one trick thing that makes technology easy."

The point that Kathy made and I think she made very clearly was, teachers are in charge of what's going on in the classroom.

Teachers are in charge of organizing how they present the information, and organizing how to engage the students and how to get students to be particularly involved in the classroom.

And so if we talk about guides -- a guideline for decisions and a decision tree, the first thing you need to remember is the content and the student should be guiding your decisions.

Not, "Oh, wow I got a new computer program and it has these bells and whistles and I'll use them."

Okay?

Your content should really be your guide and that will kind of lead you to some of your methodology ideas.

The point that Kathy made -- and she showed you with the mathematical equation -- was a great example of using color coding to explain that when you switch, you know, the letters -- it's algebra, I'm pretty sure, from high school -- when you switch the letters to the other side of the equation, it goes from a plus to a minus.

That teacher, if she had been a math teacher, would have been using color coding to really highlight for people what's going on. That's a great example of one of those ways that you flex just a little bit to perhaps help people who are more visual learners.

For those of you who didn't quite pick it up, I just explained it to you, and so for people who are more auditory learners, then you might have just picked it up now.

And for anybody that's still looking for an algebra course, take it and they'll explain it to you in excruciating detail as to how it changes when you go

from one side of the equation to the other.

(Laughter)

>> NANCY CASTLE: Choose small steps.

The other thing that we've found in the project that we did at northern -- and we actually worked also with a community college -- was that people my age and older, but ones who aren't 25 who are thinking about making these changes -- I mean they're motivated and they want to, but it is daunting.

You know, we say to you, "Oh, include technology."

On my campus, there's a kind of a directive that we should be putting all of our class information on PowerPoint.

And I just resist it.

Partly because I gave you a handout today and we've already tweaked it just a little bit.

I mean, I do that all the time.

I'm constantly refreshing and rethinking my material, and sometimes if I find a newspaper article, like a fighter pilot from the Navy who did something, that I think would be a great example to incorporate, you know, unless I get up at midnight and go work my PowerPoint presentation and reprint it, you know, sometimes it just -- it's daunting and it's scary, and change is hard for people.

And so the best advice that we gave -- and it really worked with our faculty -- was to tell them to think about just one small step.

Just start with a small step. In a class that you've already been teaching for a long time, there's got to be at least one concept or one topic or one part that you know -- you've seen it on their faces, you've seen it on

their exam questions -- they are just not getting it.

Start there.

Pick that one thing, and go back and think about, what are other ways I could present the information? Maybe it's some aspect of history and -- and, you know, particular parts of the American Revolution.

Well, you know, at this point now, Mel Gibson's made an award-winning movie on that.

Maybe the thing to do is to put them out in their culture, have them watch a movie and then come back and discuss it based on the facts that we know from our history books.

That might be the one thing that you start with.

And so choose one small step.

Choose engagement.

Choose ways to get them involved. Now, when we did this project at northern, I can tell you that the faculty -- their big complaint or big concern was that I'm going to have to -- they called it "dummy it down."

That I'm going to have to make the course easy.

What you're asking us to do is to make things easy.

That's not what we're asking.

What we're asking is, think about different ways to get information across.

In fact, it's harder because if you think about doing a tactile or a kinesthetic way for the visual learners and the auditory learners that's not going to be really right up their alley.

They're going to need something else.

So you're going to have to be the ringmaster.

You're going to have to balance it.

But choose engagement, think about those learning styles.

One of the big problems that we have with training versus -- versus education, really, is with training you guys will leave here and if Kathy and I did our jobs, you'll be all excited, you know, to go home and try to incorporate some of these learning style ideas.

But the thing is, you'll get home next week, let's say, which should be the first week of July -- this week will be the first week of July -- and if you're on an academic year in the United States, you don't even see your students until maybe mid-August or September, so you'll think, "Well, before school starts, I'll make some changes to my classes" but you've got your family vacation scheduled for two weeks from now.

When the time comes, you just forgot.

It's just -- that's the problem with doing this. So that's why -- the last overhead -- overhead.

I'm still calling them overheads.

The last part of PowerPoint.

PowerPoint part. We gave you resources.

Go online.

When you -- when you access the symposium papers in our reference section, we've got them all as active links.

Go online and find information.

Check out learning styles.

We will give you websites for universities that have put together some phenomenal ways to present math and

science in alternate formats.

The access program here at NTID, phenomenal resources. Looking at the universal design for learning, you've got the CAST resource.

I mean and they walk you through because they want people to know how to make these changes.

So your decision thing is, pick something small to start.

Pick something that will help you to get students engaged. Remember that whatever you do to get students engaged, if you've got auxiliary aids involved in the class because you have Deaf and hard-of-hearing students, you need to be sure to incorporate that piece of the class, the non-breathing as Kathy said earlier -- and I thought you guys were probably thinking breathing and non-breathing.

For many of you, you probably can remember teachers that were non-breathing.

And that's what we're trying to help you not to be.

But just remember that you've got that in the points that Kathy gave you.

Recognize that they are part of how the learning will take place in the class and how the information is conveyed. The last thing is, have some fun with it.

I mean, if you pick one small thing and you think about, you know, just some other way to engage students in the class -- I'll give you my last parting example.

I was at a conference on this topic, and a physics teacher said that he one time in trying to present an example of how volcanoes erupt and how they erupt is a series of gases and there's some formulas for it and so on, lots of Greek letters, and the students were just really bored.

He came to class one day with a bottle of Pepsi.

They were a Pepsi campus.

And he was shaking the bottle.

The whole time he started the class, "Thanks for coming, how have you been, how was your weekend?"

Okay.

So like by the time he was done, you know, they were enthralled with this.

What's this guy doing because he's shaking the Pepsi bottle.

Pepsi culture, right?

And then he started talking about how volcanoes erupt and the gases build up and they build up and there's all this stuff going on underneath the earth's crust and so on.

And then he uncorked the Pepsi bottle and the thing blew and he said it's the exact same gases that put the cash on nation in Pepsi.

I never forgot that.

I'm sure his students never forgot that.

I never drank a Pepsi after that.

But that is just one kind of a quick example and have fun with it.

And we promised, and my gatekeeper is at the door saying it's time for you to ask questions, fill out your evaluation forms in yellow, and be sort of packing up to go.

Do you have any questions for either Kathy or I? We are

-- I have my business cards here.

I will be sure that on the paper when we post it, we've got our e-mail addresses, too, so feel free when you get closer to August and you're starting to think about your classes for the fall, to e-mail us and we'll give you that moral encouragement and maybe help you find some resources, too. Okay.

Kathy, did we Miss Anything?

>> KATHLEEN DARROCH: Thank you.

>> NANCY CASTLE: Thank you so much.

Thanks for coming.

Thanks for staying awake.

First after lunch is always the worst time to draw because right around now, you're nodding off, and you weren't.

So thank you very much.

(Applause)

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(Session ended at 2:00 p.m. ET)

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