

Teaching Methodologies

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Introduction

- The objective of this session is to discuss meat science teaching methods we have validated in our programs, and discuss the challenges of teaching meat science via distance education and the use of social media.
- In the spirit of reciprocity, we encourage you to share your thoughts and experiences with us.

Current Trends in Teaching Methodologies

**Validated Methods of
Classroom Instruction –
Personal experiences**

I. Notes

- Evolution of Student Notes:
- Unassisted → PowerPoint slide handout → Fill-in-the-blank note packet with tables and figures

EXAMPLE SLIDE:

Introduction

- Muscles do not suddenly terminate all their living functions and become meat
- Physical and chemical changes occur over a period of several hours or days after harvest
- Conversion of muscle to meat is a gradual degradative process that would lead to a complete breakdown of muscle tissues to their constituent elements, if not controlled

Example from Note Packet

Introduction

- Muscles do not suddenly _____ all their living functions and become _____
- Physical and chemical _____ occur over a period of several hours or days after _____
- Conversion of muscle to meat is a _____ degradative process that would lead to a complete _____ of muscle tissues to their constituent elements, if not _____

Impact of Changing Note-taking Format

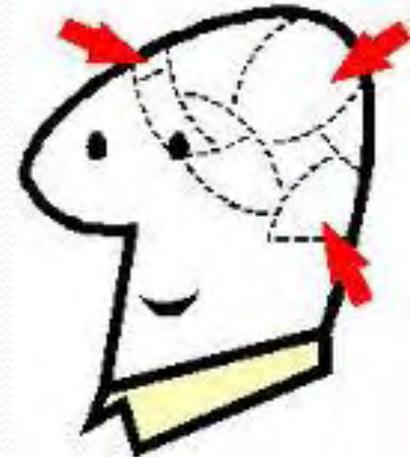
- This simple change dramatically improved my teaching evaluations....

Term/Class	Instructor Score
Fall, 2003	
ANSC 3403	3.47
TTU	4.25
Fall, 2004	
ANSC 3403	4.46
TTU	4.28

- “Dr. Brooks did a great job of **PRESENTING INFORMATION CLEARLY AND ACCURATELY** in class”

We Learn

- 10% of what we read
- 20% of what we hear
- 30% of what we see
- 50% of what we both see and hear
- **70% of what is discussed with others**
- 80% of what we experience personally
- 95% of what we teach someone else



Active Participation

- Consistent involvement of the students mind with the learning



Active Participation

- How can I involve the class?
- Active participation is one of the more important principles of learning. It is by definition, a consistent engagement of the students' minds with that which is being learned. Consistent engagement is defined such that all students are so engaged throughout the entire lesson.
- Active participation can be of three types: overt, covert and a combination of covert followed immediately by overt.

Covert

- **Covert** participation is an engagement of students in a manner that requires them to respond to the teachers question or prompt mentally. This response is in clear contrast to the passive learner who may appear to be listening and learning but who may actually be engaged in thoughts which are removed from the lesson objectives. Covert participation is unobservable.

- Think about...
- Visualize...
- Imagine...
- Picture in your mind...
- What if...



Overt

- **Overt** participation is the engagement of students in such a way that they must actually do something in response to the teacher's question or prompt. For example, if students have to write the solution to a math problem or chorally answer a teachers question. Overt participation is observable.
- Discuss with a partner, neighbor
- Write questions
- Brainstorm
- Finger signals, thumbs up or down



II. Learning Experiences

- “This class was a much more **VALUABLE EXPERIENCE** than I expected. **THE LAB WAS GREAT** – very hands on and lots of food to motivate us!”

Industry Educational Programs are Historically Viewed as Excellent Learning Experiences



Learning Experiences

- “Experience” was a common theme among my positive evaluations, so I continuously work hard to create *learning experiences*.

Example # 1 – Traditional Meat Packaging

Lecture Example

Retail Packaging

- Traditional Overwrap Packaging
 - Uses Styrofoam trays
 - Uses PVC film → exhibits oxygen permeability
 - Barrier of film varies
 - Moisture impermeable
- Physical Properties:
 - 90% light transmission
 - Results in rapid loss of color
 - Rate of Oxygen transmission: 8-25 cc/m²/24hr
 - Allows for Bright Red “Bloomed” color → associated with freshness
 - » Prolonged exposure → metmyoglobin formation

Example # 1 – Example of Meat Packaging Visual Aid in PowerPoint Presentation

- Traditional Overwrap Packaging



Example # 1 – Products of a Meat Packaging Learning Experience with Play-dough



Example # 1 – Products of a Meat Packaging Learning Experience



Example # 2 – Traditional Processed Meat Lab in my undergraduate class

- Lecture = principles
- Lab = demonstration with some student participation
- Wanted to create a learning experience, so we incorporated a popular Food Network Show concept with our lab – Iron Chef



Example # 3 – Product Development and Food Show

Processed Meats Course

- Lecture = Principles
- Lab = Demonstration with student participation
- There was no application of techniques or experiences
- Incorporated the development of a novel processed meat that students had to showcase at a Food Show and Consumer Tasting

Example # 3 – Product Development and Food Show



Example # 3 – Product Development and Food Show

• **From:** Brittany Price [<mailto:bprice@ramarcom.com>]

Sent: Thursday, December 01, 2011 10:24 AM

To: Brooks, Chance

Subject: Meat Show

-
- Hello Dr. Brooks,
-
- I'm a reporter for FOX34 news... this month I'm the AG Day reporter. I received a press release about Tech's meat show tomorrow. My producer suggested I do a story over this... so I just wanted to touch base with you and give you a heads up I was coming to shoot some video and get some interviews, if that's okay with you.
-
- Feel free to email me back or give me a call at your convenience.
-
-
- Brittany Price
- FOX34 News Reporter
- Cell: 563-379-6002
- Work: 806-748-9382

Example # 3 – Product Development and Food Show



Example # 3 – Product Development and Food Show

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- Your Pics & Video
- Birthday Wishes
- Community Calendar

Tech students test skills in meat show

Last Update: 12/08/2011 9:07 am

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Students in the Advanced Processed and Cured Meat course at Texas Tech showed off the work they've invested in for months. They were challenged to create an original processed meat item for a meat show held on campus.

"Well we've been preparing all semester learning the different ways you can process a meat product," Loni Wooley, a Senior Animal Sciences major, said.

Students took their book smarts and got their hands busy with animal carcass creativity.

"They've really jumped in and worked hard to create a good food show, and they've been very successful at that," Dr. Chance Brooks, an associate professor for the Department of Animal and Food Sciences, said.

Wooley said meat processing might not be the typical dream job, but she's proud of her love for food production.

"I just found my passion for it. It's something that not everyone really knows about, going into a packing plant and putting on a hard hat and hair net and looking at beef carcasses and things like that, but it's something I'm really interested in," Wooley said.

Before the meat show, students attended lab and lecture about the scientific principles associated with making meat. The meat show displayed each student's application of the course materials with an actual processed meat item.

"And so that culminated into today where they actually present their products in a food show for people to evaluate for the course instructor to evaluate." Dr. Brooks said.

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clip



Example # 4 - Sausagefest

Processed Meats Course

- Lecture = Principles
- Lab = Demonstration with student participation
- Needed more student buy-in
- Developed a student competition and interactive product show

Example # 4 – Sausagefest



Example # 4 – Sausagefest



Example # 4 – Sausagefest



Example # 5 – Holiday Hams

- Incorporate more real world examples
- Make a product “like they would see in the store”
- Have student work in a production setting
 - Leakers, code dating, package defects, production, QA, time management, sanitation

Example # 5 – Holiday Hams



Example # 5 – Holiday Hams



Example # 5 – Holiday Hams



Future Challenges in Teaching Meat Science

**Social Media and other
Interactive Tools in Teaching
Meat Science**

Social Media Tools

- Face book, Twitter, etc.
- Advantages / Disadvantages
- How can they be used in class?
- How to manage professional relationships in systems designed for personal relationships?

Future Challenges in Teaching Meat Science

Feasibility of Teaching Meat Science Through Distance Education

Meat Science at a Distance

- Current trends
- Advantages / Disadvantages
- How do you best incorporate laboratory via distance education?
- Managing academic integrity/dishonesty
- Teaching styles / learning experiences

Reciprocation