

# Students embody language, science and math

by Melanie Hess

*Which of the following does not belong?*

- A) Math
- B) Dance
- C) English
- D) Science

*Tiffanee Arnold and the 13 college students in her dance company would argue that is a trick question. They all belong.*



"Dance is math, and it is science," Collin Dance Ensemble (CDE) member Emily DiFranco said. "It is English and history, and it is physical. It's all these academic areas, and it's just as hard as anything else."

Rachelle Chrisostom, a Collin College dance and nutrition student, explained that dance goes beyond merely performing.

"It's educational," Chrisostom said.

Susanna Austin, fellow company member pursuing a career in dance therapy, noted that dance is often not viewed for the academic system it is.

Arnold, professor of dance and company director, emphasizes that her dancers are correct.

"We fully engage in scientific methods, we consider math and physics in relation to weight-sharing and we connect choreographic ideas in the same way one writes," Arnold said.

However, most of the company's dancers say it wasn't until college that they were exposed to an entirely different side of dance.

"Growing up you tend to just get a glimpse at dance," Chrisostom said. "That's all many people ever experience. It's very competition focused, and you don't get the real academics and history behind it."

For this reason, they agreed people cannot be blamed for being uninformed about dance as an academic discipline, but someone does need to inform them. **A Cause in Need of Advocates**

That realization led the group to its question: "How can we make dance more accessible to other academic disciplines?"

Inspired by doctoral research contest "Dance your Ph.D.," a scholarship program where doctoral candidates from a range of fields

explain their research topic through dance, Arnold and her students began to connect subjects like molecular biology and psychology with dance.

Their solution for informing the community about the academic elements and educational value of dance started out small, with short outreach programs during April's "Literacy Awareness Month" through choreographing children's books, and grew to lecture demonstrations that are now a trademark of the CDE.

"Last year, we developed the demonstrations that tied dance to other academic disciplines: science, math, English, art, music and physical education," Arnold said. "We traveled to elementary schools and high schools and met with more than 1,300 students."

The programs were a hit, and Arnold found she had more requests for the company to conduct what they





now call 'lecdems' than open calendar days to accommodate.

"I think that people view dance differently when they understand the academic components of it," Arnold said. "Putting scientific principles and mathematical concepts to movement helps individuals understand it better."

Differing from "Dance your Ph.D.," where the researcher explained while the dancers used their bodies to communicate the research, the CDE decided to physically involve everyone.

"We decided to make that idea our own," Arnold said. "In the lecdem about gravity, our student dancer would be talking about gravity and she literally falls. She keeps talking, but she is weightless. She uses gravity and then defies gravity."

#### Learning Styles and A New Generation

Not only is this type of presentation

educational, it caters to a wide-range of learning styles.

"We live in such a visual time," CDE member Anna Ferreira commented. "Students aren't learning as well just by reading and hearing someone talk anymore. Things like these lecdems can help them by making concepts more visual and interactive."

The company works to make presentations engaging. Austin describes an elementary geometry lesson she remembers presenting.

"We created shapes with our bodies where you could see the triangle and the square," Austin said. "You could see how angles are related. It wasn't just like writing it because you could see it form. For some people, seeing it on that three-dimensional level makes it click. People need that 'Aha' moment."

Arnold explained the visual and

kinesthetic sense is inherent in what the company does.

#### An Early Educator's Perspective

Betty Koonce, librarian at Memorial Elementary School, said the CDE demonstrations are always a success at her school, attributing this to the student-centered, interactive, age-appropriate, diverse and engaging elements of the presentations.

"The creativity of the choreography and proficiency of the dancers always delights and amazes us," Koonce said. "Each year, they bring a new program created just for elementary students that explains academic concepts, such as geometric shapes, and weaves in the state academic standards. They show students that learning doesn't have to be in the traditional classroom with the traditional tools and resources. Our students especially love when the dancers get them up to dance too."





### The Liberal Arts

Although many of its presentations focus on math and science, the CDE

sentence that then becomes embellished with additional phrases or movements or gestures," Arnold said. "It has a

discusses dance in regards to English, art and psychology during presentations as well.

Austin said the group talks with students about the concept of layering a sentence, adding adjectives and verbs to make it blossom. In fact, Arnold describes the choreographic process as nearly identical to writing a paper.

"It begins with a phrase of movement, a

beginning, middle and an end, and sometimes there are drafts you may cut because they are not important to the main idea."

For art and psychology, the company considers the creative vision behind projects and the dancers look at emotions and relationships.

To communicate different types of emotions, Austin said one demonstrator would go out and do a simple movement phrase. The following three or four dancers would do the same sequence, but with a different quality, such as happy, lonely or angry. Other dances communicated the emotional effects of things like friendship or losing a loved one.

### Breaking the Performance Barrier

CDE lecture demonstrations begin with the dancers introducing themselves and sharing something unique.

"Elementary students eat it up," Chrisostom said. "All you have to say is 'I love kittens' or 'I love *The Hunger Games*', and they get so excited."

But the purpose is not solely sharing surface level information or catching up on celebrity gossip.

"It really helps the lecdems to be personal," Arnold said. "We break the barriers of performance by letting our audience know something about us."

"We were now one of them," DiFranco said. "When we presented all this information, they were so much more accepting and interested because we had broken that barrier."

As the company develops this year's lecdem material and hopes to incorporate history as well, Austin reflects on the rewarding power of the presentations.

"I just love knowing that in one hour we touch all these kids' lives," Austin said. "We get to give them something to consider, learn from and treasure." ❖

*Melanie Hess is a public relations associate at Collin College.*

*Photos by Nick Young, Collin College.*