



Mary Welsh Schlueter

[mary@piemedia.org](mailto:mary@piemedia.org)

*This case is written by the Partnership for Innovation in Education with Hays-Porter School students. This format is based upon the Case Method. ©2016*

## CINCINNATI BALLET COMPANY


Working with FUZI Dancewear, Cincinnati Ballet CEO Victoria Morgan has been asked to develop a new athletic dance shoe for her ballet corps, meeting safety, comfort and beauty requirements. Her Board of Directors is committed to nurturing the brightest stars of the Ballet, while insuring their artistic and physical integrity. The Board President has asked that she study the opportunity and report her findings immediately. Can you help her fulfill this assignment?

### Situation

For Marianne and Alex, their dream to dance in a ballet company together had been fulfilled. Both dancers had just signed contracts with the Cincinnati Ballet Corps. Signing together meant that they could explore unique dance techniques and pairing. As a pair, Cincinnati Ballet specifically recruited them for their powerful, creative, cutting-edge approach to ballet dance. They had grown up dancing together in the Ukraine, and they had developed a unique rhythm that could only form over many years of dancing together.

Having studied physiology and physical therapy in college, Marianne was fascinated with the movement of the human body, its muscular development and how it could be pushed to new “magical” limits. Alex complemented this with his study of art and design, constantly adding aesthetically beautiful movements in every dance they performed together.

Cincinnati Ballet Company CEO Victoria Morgan first saw the pair dance in New York City, and she was mesmerized by their chemistry. The pair’s ability to bring a powerful, but flowing look to the dance was remarkable. They were hands-down her first pick as the next additions to the Cincinnati Ballet, and she offered to sign them both on the spot. In their first six months, they had indeed brought a refreshing new twist to the Cincinnati Ballet Company.



As Victoria watched them dance, she could see both dancers push the art of ballet to new frontiers, attempting *pas de deux* movements that were simply incredible. At the same time, she could see the frustration on their faces, as they would run into barriers. It was not as much their physical limitations, but the traditional ballet toe shoe that seemed to hold them back. Thinking back to her own training as a young ballet dancer, Victoria knew that toe shoes hadn't changed much in the past 30 years. In fact, traditional toe shoes were considered “dinosaurs” in athletic sport apparel product lines. Ballet toe shoes had been used for centuries with little innovation.

It was obvious to Victoria: Poorly fitting shoes were hampering Marianne and Alex as they developed innovative and modern dance techniques. Although stunningly beautiful, Marianne's shoes were flimsy, and offered no support for Alex's choreography. Each time Marianne landed a particularly amazing movement, she seemed to grimace as her shoes hit the wooden floor.

Victoria knew something had to be done. She had been talking earlier with former Cincinnati Ballet Dancer and FUZI Dancewear CEO Xijun Fu, about developing something new for her Ballet Corps. In partnership with FUZI ([WWW.FUZI.net](http://WWW.FUZI.net)), Victoria believed the ballet company could help test and develop a new ballet shoe that would help expand her dancers' innovation, rather than restrain it.

Victoria made a presentation to the Cincinnati Ballet Board of Directors. The Board President eagerly approved her request, knowing that this could be a major highlight of the Cincinnati Ballet Company. With authorization from the Board, Victoria now could assemble a team to design a better ballet toe shoe for Marianne and Alex. Her team would consist of business and ballet representatives, with physicians and engineers committed to developing a shoe tailored for her Corps while meeting industry and comfort standards. It would take a multi-disciplinary team ready to think differently about ballet, but she was confident she could find the right team for this opportunity.

Lost in thought, Victoria exited her office, bumping into a Ballet seamstress working on a stunning feathered costume. She was anxious for Cincinnati to lead in the development of new dancewear apparel, while better serving her dancers and the adoring audiences supporting the Cincinnati Ballet.

## Ballet Company Background

Since 1963, Cincinnati Ballet has been the cornerstone professional ballet company of the Cincinnati region, presenting a bold and adventurous array of classical, full-length ballets and contemporary works, regularly with live orchestral accompaniment. Organizing founders Nancy Bauer, Virginia Garrett, and Myrl Laurence first chartered the company as the “Cincinnati Civic Ballet” in 1958. Then in 1962, seven ballet teachers in the Cincinnati area came together to officially form the company. The first official auditions were in 1963 at the YMCA where 41 dancers were chosen from the 200 audition hopefuls. Debut

---

performances took place at the University of Cincinnati's Wilson Auditorium in 1964 and 1965.

Oleg Sabline, a European-trained dancer whose career had taken him through Europe and the United States, was appointed director for the first performances. He originally came to Cincinnati to teach ballet and stage the classics at The University of Cincinnati – College-Conservatory of Music (CCM).

In 1966, the directorship passed on to David McLain who also headed the Dance Division of CCM. CCM gave the young company the advantages of studio space for classes and rehearsals, access to talented students, and the use of the Wilson Auditorium for performances. The dancers in the company had to pay a fee of \$10.00 per year to be a part of the company! As the organization outgrew the profile of a non-professional civic company, the company was re-named "Cincinnati Ballet Company" in 1968.

By 1970, 10 salaried dancers were hired, earning the Cincinnati Ballet Company professional status. By the mid-1970s, CBC was still first and foremost a ballet company with classical works in the repertoire, including *Les Patineurs*, *Pas de Quatre* and variations from *The Sleeping Beauty*, along with two Balanchine ballets, *Concerto Barocco* and *Serenade*. Performances took place at the Taft Theatre and tours were added in Ohio, Puerto Rico, the Virgin Islands, and at New York City's Dance Festival in 1975.

The *Nutcracker* premiered in 1974 at Music Hall. Frisch's Restaurants from Cincinnati sponsored the performances and have continued to do so. Today Frisch's presents: *The Nutcracker* is a Cincinnati tradition. Beginning in 1978, regular repertoire performances were also held at Music Hall, and the schedule expanded from three series to five by 1980. The company's name was shortened to "Cincinnati Ballet", and in 1983 a sister-city arrangement begun with New Orleans to further increase performing opportunities.

In 1986, following the death of the previous director, Ivan Nagy, was appointed a permanent artistic director. At this time, the company moved out of CCM, although it was still designated the official school. It was Nagy's intention to have Cincinnati Ballet stand alone as a professional company. The company continued to perform at Music Hall but rehearsals were now in the Emery Building. A Hungarian native who had danced all over the world, Nagy knew many foreign dancers, and brought a number of them to Cincinnati. The arrival of highly experienced dancers began to raise the company to a new standard of performance. The company expanded to include five principals, nine soloists and twenty-three corps members. It joined the American Guild of Musical Artists and added the SCPA Dance Department, along with the CCM Children's Dance Division, as "feeder" institutions to provide apprentices and child performers.

A new *Nutcracker*, choreographed by Ben Stevenson of the Houston Ballet, was also performed every year in Knoxville as part of another sister-city arrangement. Repertoire included a full-length *La Sylphide* and Balanchine's *Four*

---

Temperaments as well as pieces by contemporary choreographers such as Andre Prokovsky, Mauricio Wainrot, and Ronald Hynd.

Nagy left in 1989 and three artistic directors came and went in quick succession. Through the Kaplan Foundation and the Budig Foundation, a new permanent home was built for the company. The Cincinnati Ballet Center on Central Parkway at Liberty Street opened in 1994. The Otto M. Budig Academy of Cincinnati Ballet was launched in 1996. Offices, dance studios, a training school, wardrobe/costume storage, and rehearsal space were all in the same complex. The intimate Mickey Jarson Kaplan Performance Studio was added in 2005.

The Aronoff Center for the Arts became the permanent home for the repertoire series of performances and a number of ballets were acquired. "Americana" ballets such as Agnes DeMille's Rodeo, and modern dance pieces by Paul Taylor challenged the dancers and intrigued audiences. In 1996, Balanchine's full-length Jewels, was performed by the company.

Artistic Director and CEO Victoria Morgan, whose tenure continues presently, has honored the Cincinnati Ballet tradition of performing not only new works, but also keeping the historic repertoire alive. Under her artistic direction, Cincinnati Ballet has become a creative force within the larger dance community, commissioning world premiere works and exploring unique collaborations with artists as diverse as Grammy winning guitarist Peter Frampton and popular, Ohio-based band Over the Rhine.

With a mission to inspire hope and joy in our community and beyond through the power and passion of dance, Cincinnati Ballet reaches beyond the stage in programs that allow every person in the region to be part of the continued evolution of dance. To that end, Cincinnati Ballet presents exhilarating performances, extensive education outreach programs and offers top-level professional ballet training at Cincinnati Ballet Otto M. Budig Academy.

The 2013-2014 season marked the 50th Anniversary of Cincinnati Ballet. In May 2014, as a part of Cincinnati Ballet's 50th Anniversary celebration, they performed at the prestigious Joyce Theater in New York City.

### **The Evolution of the Ballet Toe Shoe**

Women began to dance ballet in 1681 as part of the Académie Royale de Danse. At that time, the standard women's ballet shoe had heels. Mid-18th century dancer Marie Camargo of the Paris Opéra Ballet was the first to wear a non-heeled shoe, enabling her to perform leaps that would have been difficult, if not impossible, in the more conventional shoes of the age. After the French Revolution, heels were completely eliminated from standard ballet shoes. These flat-bottomed predecessors of the modern pointe shoe were secured to the feet by ribbons and incorporated pleats under the toes to enable dancers to leap, execute turns, and fully extend their feet.

The first dancers to rise up on their toes did so with the help of an invention by Charles Didelot in 1795. His "flying machine" lifted dancers upward, allowing

---

them to stand on their toes before leaving the ground. This lightness and ethereal quality was well received by audiences and, as a result, choreographers began to look for ways to incorporate more pointe work into their pieces.

Pointe shoes began to show up around 1832, with leather soles and satin. As they evolved, a sturdier front platform was added to the tip for a little more support with a stronger sole as well. The more modern pointe shoe today has layers of satin stiffened with resin, a stronger box for the toes and a thin sole of leather.

As dance progressed into the 19th century, the emphasis on technical skill increased, as did the desire to dance en pointe without the aid of wires. When Marie Taglioni first danced *La Sylphide* en pointe, her shoes were nothing more than modified satin slippers; the soles were made of leather and the sides and toes were darned to help the shoes hold their shapes. Because the shoes of this period offered no support, dancers would pad their toes for comfort and rely on the strength of their feet and ankles for support.

The next substantially different form of pointe shoe appeared in Italy in the late 19th century. Dancers like Pierina Legnani wore shoes with a sturdy, flat platform at the front end of the shoe, rather than the more sharply pointed toe of earlier models. These shoes also included a box—made of layers of fabric—for containing the toes, and a stiffer, stronger sole. They were constructed without nails and the soles were only stiffened at the toes, making them nearly silent.

The birth of the modern pointe shoe is often attributed to the early 20th-century Russian ballerina Anna Pavlova, who was one of the most famous and influential dancers of her time. Pavlova had particularly high, arched insteps, which left her vulnerable to injury when dancing en pointe. She also had slender, tapered feet, which resulted in excessive pressure on her big toes. To compensate for this, she inserted toughened leather soles into her shoes for extra support and flattened and hardened the toe area to form a box.

Pointe shoes are still handmade to this day.

### **The Life of a Ballet Dancer**

Professional level dancers can spend 5 to 8 hours a day in their pointe shoes. Wearing out of pointe shoes varies from dancer to dancer, some need to replace them after a couple of days and some can wear them out during one performance. It just depends on the choreography. The company dancers can dance in as many as 40 performances in a season. Dancing on pointe is very challenging; dancers must have extremely strong feet and ankles as well as excellent posture and balance skills.

As an example of a schedule, dancers for the Cincinnati Ballet *Nutcracker* may spend their entire day in pointe shoes. Typically, ballet dancers spend about five hours per day in the pointe shoes. In a time of rehearsals, a ballet dancer can wear out a pair of toe shoes in a week or two, and a pair of performance shoes may only last the performance.

Assuming moderate usage, a dancer's pair of pointe shoes will typically last ten to twenty hours of wear. For dance students, this often translates into weeks or months of serviceable use from a pair of pointe shoes. Professional dancers typically wear out pointe shoes much more quickly; a new pair may wear out in a single performance. As a result, most professional ballet companies provide shoe allowances for their dancers to defray the cost of frequent shoe replacement.

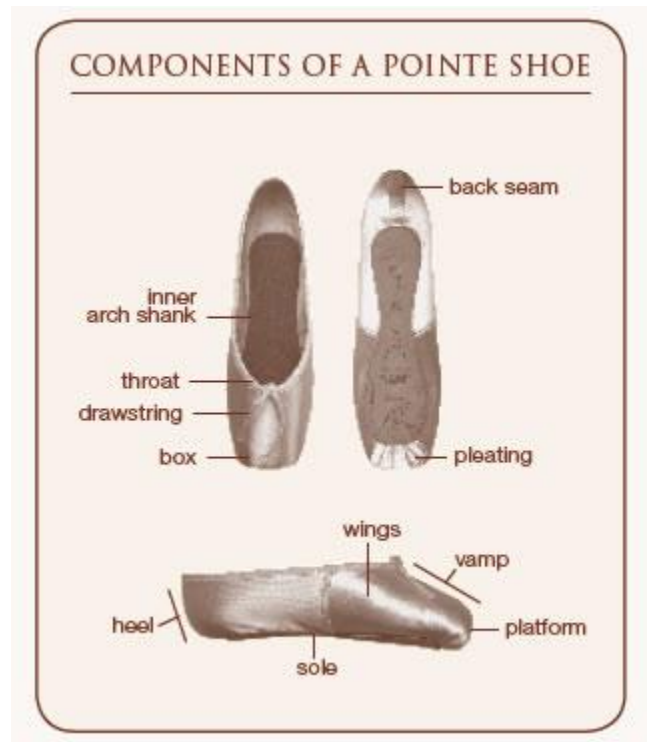
### **Toe Shoe Fitting and Construction**

Fitting a pointe shoe requires an expert, especially for the novice pointe dancer. Often, dance stores that sell pointe shoes will have a member on staff specialized in fitting pointe shoes. Shoes vary in strength and stiffness, but dancers do not necessarily choose shoes based on these characteristics. Rather, they choose them based on comfort. Pointe shoes should be snug but not too tight, which can lead to blister and callous formations. When choosing a pointe shoe, it is important to understand the basic construction and structure to assure the best-fit possible.

The following are the parts of the ballet shoe:

#### The box

The box is a rigid enclosure within the front end of the shoe that encases and supports the dancer's toes. The front end of the box is flattened so as to form a platform upon which the dancer can balance, and fabric covers the exterior of the box for esthetics. The top of the toe box, called the vamp, varies in length and width depending on the dancer's forefoot length and width. The vamp should cover the entire length of the third phalanx and slightly beyond. The platform is the exterior, flat-end of



the toe box that allows the dancer to stand on pointe. When fitting a pointe shoe, a dancer should perform a *demi-plié* in parallel position because this is the longest the feet will be in the shoes. The dancer's toes should just be touching the end of the platform without bending.

In conventional pointe shoes, the box is typically made from tightly packed layers of paper and fabric that have been glued together and then shaped into an enclosure. When the glue dries, it becomes hard and provides the required

---

stiffness. In some newer pointe shoes, the box may be made from plastic and rubber, with rigidity provided by the plastic.

#### The sole

In most pointe shoes, the sole is constructed from a piece of leather that is attached to the shoe with adhesive and reinforced by stitching along its edges. The sole overlaps and secures the unfinished edges of the shoe's exterior fabric. Pointe shoes may be manufactured with either scraped soles, which provide superior traction, or buffed soles, which have a smoother surface for reduced traction.

Aesthetic appearance is of paramount importance for modern pointe shoes. To achieve an elegant appearance, the shoe's more decorative outer fabric is prominently featured, covering the maximum possible area of the shoe's visible surfaces. To this end, the sole is made of thin material to give it a minimal profile, and a margin of satin is artfully pleated around it so that the sole covers only part of the bottom of the shoe.

#### The Shank

The shank is usually made of shoulder leather, plastic, cardstock or layers of glue-hardened burlap and is a narrow supporting spine that is glued to the back of the insole. The flexibility of a shank is determined by its thickness and the type of material used. A shank's thickness may be consistent throughout or it may vary along its length to produce different strengths at select points. The shank helps support the arch of the foot when dancing on pointe and can be reinforced by adding an additional layer for a dancer with a more flexible foot to slow the breakdown of the shoe.

#### The ribbons and elastic bands

A pointe shoe employs two fabric ribbons and an elastic band to secure it to the foot. The ribbons do most of the work of securing shoes to feet. The two ribbons wrap around the dancer's ankle in opposite directions, overlapping one another so as to form a cross at the front. The ends are then tied together in a knot, which is then tucked under the ribbon on the inside of the ankle to hide it from view. The elastic band—which traverses the front of the ankle below the ribbons—keeps the heel of the shoe in place against the foot when the dancer is en pointe.

The locations where the band and ribbons attach to a shoe are critical, as incorrect placement can result in a poorly fitting shoe. Optimal placement depends on the physical attributes of the foot to which it will be mated, and consequently the ribbons and elastic bands cannot be attached during the shoe manufacturing process. After acquiring a new pair of pointe shoes, a dancer must determine the appropriate attachment locations for the ribbons and elastic bands and then sew them, or arrange for them to be sewn, onto the shoes.

There are more than 20 different manufacturers of pointe shoes, each with varying styles to accommodate different foot types. A good pointe shoe fitter will know the characteristics of the different shoes and be able to recommend shoes based on the dancer's foot type. The peasant foot (toes are of even length) is the "ideal foot type" for weight distribution while on pointe. Dancers with a peasant foot will require a wider toe box. Dancers with a Grecian foot (second toe is

longest) must find the width of toe box that feels most comfortable. Dancers with an Egyptian foot (tapering toe length) will usually purchase shoes with a narrower toe box. To this day, the majority of pointe shoes are handmade, so there is variability even within one specific brand and style. Thus, some dancers prefer to have their shoes made by a specific cobbler whose construction they are accustomed to.

### **The Life of the Toe Shoe**

In the course of normal use, there are three predominant types of wear on a pointe shoe that will determine its useful lifetime. The most important of these is shank wear. As the body of the shoe is repetitively flexed, the shank gradually weakens and loses its ability to provide support. A pointe shoe is no longer serviceable when the shank breaks or becomes too soft to provide support. The second is the softening of the box and especially the platform on which the dancer balances.

#### **The lifetime of a pointe shoe depends on many factors, including:**

- **Usage.** More aggressive dance styles and more frequent, longer durations of use will hasten wear.
- **Dance technique.** Improper technique subjects shoes to unusual stresses that may lead to premature failure.
- **Fit.** Well-fitting pointe shoes encourage proper technique, which in turn leads to longer shoe life.
- **Weight.** Greater dancer weight exerts proportionally greater stresses to the shoes, leading to faster wear.
- **Construction.** Varying qualities and types of construction will yield different life expectancies.
- **Shank material.** The stiffness and integrity of various shank materials will degrade at varying rates.
- **Breaking-in.** The breaking-in process simulates accelerated wear, and thus may shorten the life of a shoe.
- **Performance surface.** Rough surfaces cause rapid wear of the exterior fabric, in contrast to smooth surfaces such as Marley floors, which minimize the rate of fabric wear.
- **Foot Strength.** Stronger arch muscles exert greater force on the shank, causing it to bend more and thus accelerating its wear.

The other primary type of wear involves the exterior fabric. In pointe work the front face and bottom edge of the toe box are subjected to friction against the performance surface. This friction will eventually wear through the shoe's outer fabric covering, thereby exposing the toe box and creating loose, frayed fabric edges. Unlike a weakened shank, damaged outer fabric does not affect the performance of a shoe. Due to its unprofessional appearance, however, damaged fabric may render the shoe unfit to wear in situations other than informal practice or rehearsal.

Dancers typically "break in" new pointe shoes to reduce or eliminate the discomfort they commonly cause, usually by performing relevés and elevés that flex, and thus soften, the boxes and shanks in a natural manner. Various other methods have also been employed for breaking in pointe shoes, including



deforming them with hands or against hard surfaces, striking them on hard surfaces, and moistening or heating the boxes to soften the glues, but these methods may shorten a pointe shoe's usable lifetime.

### **Biomechanics of Dancing on Pointe**

Dancing on pointe requires complete plantar flexion of the foot and ankle - extension of the ankle, pointing of the foot and toes. Dancers will achieve full relevé (dancing on the tips of the toes in pointe shoes) by either stepping directly into relevé or by rolling through the feet and rising to relevé with or without a demi-plié (feet are turned out, knees maximally flexed without raising the heels). The ankle is stable in the full pointe position because the posterior lip of the tibia locks onto the calcaneus and the subtalar joint is locked with the heel and forefoot in varus.<sup>6</sup>The vamp, sole and closed pack position of the foot in the pointe shoe play a major role in stabilizing the midfoot while on pointe.

Simply walking in pointe shoes doubles the peak pressures – the location and degree of the highest pressure points at on the foot – acting on the foot. Rising into the relevé position from a flat-footed position increases the peak pressure. The dancer's body weight is supported on the tips of the toes, which are in a relatively neutral position relative to the longitudinal axis of the foot. The great toe bears most of the weight regardless of the length of the other toes. Pointe shoes absorb some of the impact from jump landings, but the load is also distributed through the foot and ankle complex. Despite this unnatural loadbearing, no studies have been done to show that dancing on pointe increases the risk for injury. However ballet dancers do suffer from injuries, most commonly involving the foot and ankle. Problems that have been attributed to dancing on pointe include hallux valgus deformities (bunions), toenail injuries, corns, and callouses. Injuries common to ballet include ankle sprains, stress fractures, impingement syndromes, and tendon problems.

### **Cost and Materials**

Ballet shoes can range in cost from around \$45 to over \$100. There are a handful of companies that are making the ballet shoe including, Freed of London, Capezio, Bloch, FUZI and Grishko. Some well-known companies are experimenting with materials and design already. For instance, Gaynor Minden produces shoes with parts

#### **Getting a sense of the scale and cost for ballet shoes**

- The average ballet shoe costs around \$80.
- The San Francisco Ballet provides 120 pairs of pointe shoes for each of its 40 female dancers.
- The American Ballet Theatre in New York City sets aside \$350,000 for pointe shoes per season, about \$7,500 per ballerina.
- Melissa Lowe, a professor with the University of Arizona's School of Dance, says many of the companies she has worked with have invested major chunks of their seasonal budgets into pointe shoes for their women dancers.
- At a cost of about \$80 each, Pittsburgh Ballet Theater spends close to \$100,000 on pointe shoes per year.

---

made from a synthetic rubber geared to last longer. Reviews for this shoe seem to indicate that it is a dependable shoe but doesn't form to the foot the way a traditional shoe does and looks slightly different. Also, Nike is producing the Arc Angel which has major support provided by elastic bands intended to encourage proper technique. Using durable materials, the ARC claims to last longer than the usual life of a traditional pointe shoe.

### **Considerations for Building a Better Pointe Shoe**

Building a better ballet pointe shoe requires the synthesis of knowledge on a number of fronts, from the practical to the artistic. As you work to design a better ballet shoe, you will have to think about what the dancers wish accomplish in movement, as well as the aesthetic look of the shoe, in contrast to the materials that will work best to accomplish this at an affordable price. As you embark on this effort, the following is a summary of some of the considerations.

#### Understanding the Art of Ballet Dance on Pointe

To be able to craft a shoe that meets the needs of the ballet dancer, you will have to gain an understanding the art of the dance, including the physics and biology of movement in ballet. The shoe you create will have to allow dancers to be able to perform the movements central to this form of dance, as well as allow for the possibility for new, creative movements, all while striving to minimize the potential for injury. Dancers will sometimes wear different pointe shoe models for different performance pieces. In such cases, the choreography often will dictate the design and for instance determine the type of shank required; a lyrical style may call for a softer shoe, while an aggressive style with many turns is more easily performed in a hard, stiff shoe.

#### Design and Aesthetics

The ballet pointe shoe has always been an element of the overall aesthetic of the ballet dance costume, so careful consideration will need to be taken as any better ballet shoe is designed. While ballet in our modern world allows for some variation in the ballet shoe, you will have to marry the wishes of the young, innovative dancers with the traditions of the ballet dance.

#### Cost and Materials

As you begin to design the better ballet shoe, examining current efforts to create a better ballet shoe will provide a starting point for ideas as you embark upon bringing together all the cost and material elements to stretch the existing ballet pointe shoe concept into something new.

## **THE PROBLEM:**

*Working with FUZI Dancewear Founder Xijun Fu, Victoria Morgan is excited to begin working on the development of a new pointe shoe, satisfying both her Ballet Corps and Board President's requests. She knows this new partnership with FUZI will help forge new creative paths both for her star dancers, and the choreographers who serve their creative and physical needs.*

*To meet this challenge, Victoria has created a diverse team of consultants to study, design and craft a new ballet shoe. You and your team are now charged with doing the research and design a ballet shoe that satisfies the athletic, anatomical, and design requirements of the ballet dancer, while staying within budgeted manufacturing and sales cost estimates.*


*Are you ready to leap into this challenge?*

## QUESTIONS:

- How much time do ballet dancers spend dancing daily? How much time is spent in toe shoes?
- What kinds of physical challenges do ballet dancers face as a result of dancing in toe shoes? How does dancing in toe shoes impact the toe, the legs/body?
- What is the history of the toe shoe development? And how much has it changed over time?
- Who is in the business of building athletic shoes? How do they design and manufacture these shoes? What type of career would a shoe designer typically pursue? What advances have been made in making a better shoe?
- What is the design/ergonomic feature of the existing toe shoe? How does this compare to other "athletic" shoes? What elements of other athletic shoes could be applied to toe shoes?
- Describe the FUZI product line, the company's history, and the Founder's background. How did he begin the company? Was he a dancer too? What is the average cost of his existing pointe shoes? What types of new product features differentiate FUZI's shoes from other company's shoes? What are the price differences?
- If the Cincinnati Ballet has 65 Full Time Dancers in the Corps, and the Board of Directors funds 100% of their yearly shoe requirements, what is the cost to the Cincinnati Ballet for the top four shoe manufacturers? List ways that the Board can decrease its costs, while remaining true to its patrons and professional dance corps.

*Copyright © 2016 by the Partnership for Innovation in Education*

*All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without the permission of the Partnership for Innovation in Education. Distributed by PIE*



*Media Publishing Division, Partnership for Innovation in Education, PO BOX  
8722 Cincinnati OH 45208 (513) 378.8370. Printed in the U.S.A.*