Dance Kinesiology Demonstrations

Sally Fitt & Tom Welsh

Dance Kinesiology Demonstrations
Teacher's Guide

This Teacher's Guide is designed to accompany the instructional videotape, ***Dance Kinesiology Demonstrations***. The videotape and the teacher's guide were produced by Sally Fitt and Tom Welsh during Spring and Summer 2000 with help from professional staff at the University of Utah and funding from the University's instructional development office for a grant entitled **"The Clean Demo Project."** Copies of the videotape and answer key are available at cost to certified teachers of Dance Kinesiology from the address at the end of this introduction.

Purpose

The purpose of the Clean Demo Project is to help new teachers of *Dance Kinesiology* provide their students with clear and instructive movement demonstrations. We have carefully selected, sequenced, performed, and analyzed the demonstrations on the tape to help new teachers avoid the problems and frustrations we experienced when we first began designing movement demonstrations for dancers.

General Organization

The 31 demonstrations on the videotape are analyzed in this teacher's guide. We designed each demonstration to reveal concepts dancers need to learn to analyze movement and placed them in a sequence that facilitates acquisition of these skills. We have observed a tendency for new Dance Kinesiology teachers to ask students to analyze movements that are too complex for those just learning movement analysis skills. We believe this is like trying to teach tour en l'air to beginning dancers who are still struggling with tendu and plie. Some of the demonstrations include movements that are not conspicuously relevant to dance. We have included them because they teach fundamental concepts essential for analyzing dance movements. Their relevance is conceptual and cumulative.

The demonstrations are grouped according to the joints involved and labeled consistently in both the videotape and the teacher's guide. ATT, for example, stands for Ankle, Tarsus, & Toes, K for Knee, H for Hip, and so on. We have also included several demonstrations that involve a Combination of joints and attached the label C to these demonstrations.

Within groupings by anatomical geography, the demonstrations are arranged by difficulty. Foundational demonstrations are numbered 1 (ATT1a, ATT1b) and teach the fundamental skills of seeing the direction of action, determining the action of gravity, and identifying the specific muscles that comprise the active muscle

groups. These skills are required for analyzing all movement. Level 2 demonstrations (K2a, H2c, etc.) are slightly more complex. They often involve dance movements although they are still fairly simple movements. Level 3 demonstrations are complex and demand mastery of the fundamental skills and often some creative thinking.

We urge new Dance Kinesiology teachers to view movement analysis as a set of skills that requires the same careful and progressive development that other dance skills require. Skipping foundational analyses is likely to create skill deficits that will limit your dancers' ability to analyze complex movements.

Teacher's Guide Organization

Each demonstration has its own analysis page. The individual analyses begin with a description of the demonstration and suggestions for executing it clearly. A detailed analysis of the demonstration follows on a slightly modified version of the analysis worksheet from the textbook. The analysis end with notes that discuss any special features of the analysis. Some of the notes were prepared as replies to questions offered by early testers of the tape and teacher's guide. Questions from early testers and our replies are attached following the analyses. We expect to expand this section as we receive more feedback from users. The teacher's guide ends with suggestions for building your own movement analyses.

Videotape Organization

The sequence of demonstrations on the videotape matches the sequence in the teacher's guide. Each demonstration is introduced by a black-background title slide. The views shown on the videotape should match the views shown on each answer key (please let us know if you find discrepancies).

Using the Videotape

We produced the videotape to provide a model that Dance Kinesiology teachers can use to rehearse the demonstrations so they can perform them live in class. Using the tape in this way has the advantage of providing three-dimensional, live demonstrations which we believe are more interesting and instructive for students. We also suspect live demonstrations encourage students to try the movements on their own bodies while doing analyses instead of trying to complete the analyses as passive spectators. It would be possible to show one of the video-taped performances in place of a live performance, but we recommend doing so only when a live performance is not possible.

Future Development, Feedback, & Suggestions

Production of the ***Dance Kinesiology Demonstrations*** videotape and teacher's guide marks the end of the first phase of the **Clean Demo Project**. We anticipate additional developments and welcome your feedback

and suggestions. Here are a couple of developments we are considering.
As we reviewed the final version of the videotape, we realized it might be helpful to have each action repeated so viewers can check what they think they saw as they watch each demonstration a second time. Do you believe repeating each movement demonstration would make the video more useful or easier to use?

It might be possible to convert selections from the videotape and analyses into an interactive CD or DVD ROM that students can use for independent study and review. Do think such an instructional tool would be helpful to your students?

Can you imagine other evolutions or extensions of the **Clean Demo Project** that might be helpful to you and your students?

An early draft of this teacher's guide was tested by two new teachers of Dance Kinesiology during Fall 2000. We believe their suggestions have helped make this version of the teacher's guide more useful. We welcome your feedback and suggestions and promise to consider them carefully before we prepare future editions of ***Dance Kinesiology Demonstrations***.

After 25 years in the University of Utah Modern Dance Department, Sally is retiring from her daily work with dancers and will turn her attention to helping non-dancers improve their physical health. Sally is entrusting Tom with carrying the **Clean Demo Project** forward and encourages you to send suggestions to him at the address below.

Protection from General Distribution

We ask you to protect the teacher's guide and videotape from general distribution. If the analyses were to become generally accessible to students over the WWW, for example, that might limit their usefulness for teachers who may want to use some of the demonstrations on exams.

Please do not reproduce the videotape or answer key.

Refer teachers who may be interested in using ***Dance Kinesiology Demonstrations*** to the address below. We anticipate being able to provide copies to Dance Kinesiology teachers at a reasonable cost.

Please send inquiries and comments to the following address.

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Dance Kinesiology Demonstrations
Questions & Replies

Early users sent questions as they worked through the videotape and teacher's guide **Dance Kinesiology Demonstrations**. We reproduced some of the questions and our replies here. If you have additional questions, please send them to the address in the introduction.

All Demonstrations

Do we want students to name the muscle that should do the movement if the muscle is strong enough or all the muscles that could be involved?

Go for ALL the prime movers first. If there are no prime movers for the combination of actions demonstrated, select muscles that minimize unwanted actions and balance those muscles with muscles that will neutralize the unwanted actions.

Determining how many prime movers is enough is not a simple matter and probably varies by individual and their condition at the moment. Also, when an action requires less than a maximal contraction, it is not clear whether dancers use fewer muscle groups or just fewer muscle fibers from all the prime movers. Recent research by Steven Chatfield and his colleagues, for example, suggests that individual dancers use different recruitment patterns for the same movements.

ATT3a - Parallel stand, neutral → Full releve (gravity A/B)

How do I explain that the action of gravity in the first 1/2 of a releve is pronation but changes to supination in the 2nd half. Why is the action of gravity not pronation all the way to the top. I can visualize supination happening at the top but is it because of gravity or weak muscles?

We believe it is because the metatarsals get shorter as you move from medial to lateral and when we stand on the ends of them in releve, the foot wants to tip to the outside (supinate). If some dancer had really long 4th & 5th metatarsals and really short 1st and 2nd metatarsals and insisted that their tarsus tends to pronate when they releve, we would score their analysis accordingly.

AT2b - Parallel stand, pronated → Parallel stand neutral

For joint action, should it be maintain dorsiflexion or plantar flexion?

Positions of the ankle are discussed on page 41 of the textbook. There is only one position of plantar flexion and this demonstration does not use that position so the action is maintain dorsiflexion.

K1abc - Parallel - Top of demi-plie → Bottom (hold) → Top of demi-plie

Don't we use the knee flexors in demi-plie even though it is a lengthening contraction? I know I train dancers to use the hamstrings when doing demi-plies on the Pilates Reformer.

Some dancers may use knee flexors to start a demi-plie from a hyperextended knee position. However, gravity is a flexor at the knee and at the hip. We use the hamstrings in a demi-plie to control flexion at the hip on the way down and to extend the hip on the way up.

K2a - Parallel stand on 1 leg → Gesture knee flexes & outward rotates

Would the semitendinosis and semimembranosis assist in flexion? When I do this it feels like they are contracted.

The semi-M & T do flex the knee but they also inward rotate so they would not be the most efficient muscles to use to produce this combination of actions (remember the "efficiency assumption?" p. 114) Try sitting in Graham 4th and lift the toes off of the floor while pushing the heel toward the floor. For us the semis are relaxed.
A second thought - If you use more muscle power than you need to execute this movement in the video demonstration, the lateral hamstrings will tend to cause the gesture hip to abduct; to resist that movement (and keep your femur vertical, your body may be engaging the medial hamstrings which adduct. The efficiency assumption seems to be the trump card here as well.

H3a - Seated → Torso/Pelvis rotation to left (R & L hip)

I find it impossible to do this demo without outward rotating my left hip.

We suspect you are actually inward rotating your left hip but losing sight of your pelvis as the reference point. Because the pelvis moves in this demonstration, the change in the relationship between the pelvis and the left femur is actually inward rotation. Watch the two bones closely and you will see it. This is a tricky demo; that is why it is level 3. We added a note to the end of this analysis that may also help.

Building New Dance Kinesiology Demonstrations

The demonstrations in the videotape and teacher's guide have been tested and sequenced to teach dancers the skills needed to analyze movement. If you are a new teacher of Dance Kinesiology we encourage you to stay close to this program the first few times you teach the course. As you gain more experience, you may want to tailor your demonstrations to the dancers you are teaching. In this section, we offer suggestions for building your own movement demonstrations.

The easiest and safest first step for creating new demonstrations is to simply reverse the direction of action or change a moving demonstration to a held position or vice-versa. While this changes only the information in the "Action" and "Type of Contraction" columns of the analysis, it will look and feel like a new demonstration to dancers who are just learning to analyze movement. The rules for "types of contraction" (page 113) will help you make consistent changes in these two columns. The rest of the columns should not change. Remember that the muscles that take you there, also hold you there, and bring you back to the start.

Another strategy for elaborating the demonstrations is to combine the actions for several joints. Again the analyses will stay the same as those in the teacher's guide but they will feel different to the dancers. Of course, this strategy could be combined with changing the direction of action to go one step further.

When you are ready to begin building new demonstrations from scratch, we suggest starting with the specific muscles and working backward through the analysis to the demonstration. This will guarantee that ther is a definitive answer to your demonstration and it will help you uncover potential complications before you present the problem for your dancers to solve. Here is how we created movement demonstration N1b.

Building Demo N1b - Lying supine → Head up, look rt (flex, r.rot, l.lat.flex).

We started with the two synergists on the left, anterior side of the neck – anterior scalene and sternocleidomastoid. We chose to lie down so these muscles would have to work against gravity as the neck moved through a normal range of motion. When we contracted the left sternocleidomastoid and the left anterior scalene from this supine position, the neck flexed, rotated to the right, and lateral flexed left. From the ending position, gravity extended, left rotated, and right lateral flexed so we had a shortening contraction of the neck flexors, right rotators, and left lateral flexors.

If you are new to creating movement demonstrations, stay with those that have a clear set of prime movers for the first few you design. Many dance movements require contraction of several antagonistic muscle groups. Work up to these complicated analyses gradually.