

# Reflections on learning how to play a violin 'left-handed': motor learning aspects



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## Introduction

Playing the violin is a highly-skilled activity. But skilled practitioners who teach the skill find it difficult to remember the learning process, since they often learnt in their childhood. Literature about musical instrument learning has focused on motivation and the factors that predict engagement and long-term success. But there is little empirical research about the process of successful learning.

## Purpose

Our collaborative autoethnographic study (Denzin & Lincoln 2011) aimed to describe and analyse the reflections of a professional violinist [VM] as she learnt how to play a violin with reversed set-up. To play a violin in reverse, the player uses the normal fingering hand to do the bowing, and the normal bowing hand to do the fingering – the semantic declarative knowledge (reading music etc.) remains the same, but the procedural motor skill knowledge has to be re-learnt. This poster summarises some motor learning aspects of her learning story.

## Methods

VM reversed the bridge and strings on a violin. She recorded her reflections during the first 8 learning sessions. At the end of the school year VM recorded reflections on how she had used her learning experience in teaching pupils. For this wing of the study AK transcribed the data and performed a thematic analysis (Braun & Clark 2006). We performed joint collaborative interpretation of the narrative data in the light of the literature on motor learning (Magill 2011).



## Results

Thematic analysis identified 4 main themes –  
1. violinistic challenges; 2. 'the teacher in my head'  
3. acquiring the motor skills; 4. emotional responses.

The sub-themes themes grouped under the theme 'acquiring the motor skills' included:

- Conscious use of visual and proprioceptive models – "I have a picture in my mind of what I need to do.."
- Need for concentration
- Difficulty of independent bimanual tasks – "I have got too many things to concentrate on.."
- Need for repetition - "I need to practise it.."
- Awkwardness and tension – "The left hand feels really awkward and difficult"
- The need to grade tasks carefully – "I need to do each movement individually.."

The end of the year reflection showed that:

1. VM had forgotten many of the details of the learning period (memory is not necessary for procedural learning - Shadmehr '98);
2. She was directing students' visual attention more during demonstrations;
3. She was enabling students to do more single limb practice, e.g. by bowing as they practised the fingering.

## Conclusions

VM's observations are those of one individual, but they fit with current motor learning literature, e.g. tensing to reduce degrees of freedom (Vereijken 1992); the need for forward models to enable accurate motor planning, and role of muscle tension to reduce noise in the system (Franklin & Wolpert 2011).

This experienced learner seems to use visual models and feedback better than young learners, who might need directing to the aspect of the visual model that is relevant. Topics for future research include the nature and role of forward motor models in learning.

## Literature cited

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## Ethics

Ethics approval for this study was granted by CU HLS Faculty Ethics Committee.