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Flute Air Jet Director: The Teaching Tool for Beginner Flute Students to Produce Quality Tone

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Abstract

According to physics, the flute tone is produced by blowing the airstream through the small opening mouth-hole to the outer edge of the embouchure hole of the flute. When the airstream is directed against that edge, it will be isolated and cause the vortex formation, which is the source of oscillation in the air that helps initiate and sustain the tone production. This physical methodology of tone production on the flute is known as the Edge Tone principle. The utmost importance for flute student is to understand the origin of flute tone and the knowledge to produce clear, quality tone by directing the airstream in the right angle to strike against the edge.

This study is conducted on research and development (R&D) methodology. The purpose of the study is to develop the teaching tool that help beginner flute students understand how the flute tone is produced scientifically. The research methodology includes 1) literature reviews for the philosophy of flute making and flute playing 2) interviewing three specialists including flute teacher, flute maker, and flute technician 3) fabricating the teaching tool 4) testing the teaching tool with the three specialists and testing the teaching tool with the beginner flute students 5) collecting and analyzing data using inductive content analysis.

The Flute Air Jet Director is a wooden tool made similarly to the flute head joint with two turbine wheels installed beneath the embouchure hole. The correct airstream angle blown into the Flute Air Jet Director should be isolated by the edge. The separated airstreams will then spin both wheels at the same speed and time, representing the ideal blowing angle to produce quality tone when blowing the flute. The Flute Air Jet Director can be used by beginner students as practice tool and by teachers as monitoring device that help students visualize the tone production in the flute.