The assessment of creativity in children's musical improvisations and compositions

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Abstract

The assessment of creativity has largely been influenced by Guilford, and subsequently, Torrance through the Torrance Tests of Creative Thinking (TTCT). Guilford pinpointed creative thinking as the operation of 24 divergent production abilities—a small section from a total of 120 primary abilities hypothesized in his "Structure of Intellect” model (Guilford, 1967). Of the divergent production factors, four primary concepts emerged through factor analyses that have become associated with creative thinking: fluency (shear number of ideas), flexibility (ability to shift thoughts or categories of ideas), originality (novelty or unusualness of each idea) and elaboration (details of each idea). These concepts are embedded in much of the general and musical creative thinking literature, tests, and problem solving models that center around the theory of creative thinking as divergent production. Torrance was perhaps the most influential theorist on general creativity who followed Guilford’s initial hypothesis. The Torrance Tests of Creative Thinking (TTCT) (Torrance, 1974) are widely used standardized tests, which measure fluency, flexibility, originality and elaboration for the measurement of a general creative thinking score.

Webster's Measurement of Creative Thinking in Music (MCTM) is a creative thinking test in music that also follows Guilford’s hypothesis and like the TTCT, measures factors of fluency (called “extensiveness”), flexibility and originality. Webster added a musical “syntax” score as a fourth factor.

However, the concept that divergent thinking and its components (i.e. fluency, flexibility, originality and elaboration) are synonymous with the outcome of creative thinking has been challenged. The greatest criticism is that the theoretical constructs came first, and then were validated using specialized tests, such as factor analyses, to identify the factors (Brown, 1989). A recent alternative to measuring creativity is a consensual assessment technique devised by Amabile (1982, 1996). Amabile proposed that the most valid way to measure creativity is by using experts’ global and subjective assessment of creative products. This “consensual assessment technique” requires judges to rate the creativity of an artistic product by using their own subjective definition rather than any given objective criteria or checklist. Amabile has shown this technique to be highly reliable in visual arts, and preliminary research in music has shown the technique to be reliable when used to judge children’s musical compositions (Bangs, 1992, Binkman, 1999; Daignault, 1997; Hickey, 2001, 1995).

The main purpose of the present study is to compare the consensual assessment scores of children’s musical compositions with their creativity scores from the MCTM. If, as Guilford posited, “creativity refers to the abilities that are characteristic of creative people” (1950, p. 444) or, as Amabile suggested, that creative ability is best measured by assessing the creative quality
of the products that are a result of creative endeavors, then perhaps the creativity scores of children’s music compositions will provide valid indicators of musical creativity. One way to test this hypothesis is to observe the correlation between creativity scores from musical compositions with scores from a measure of musical creativity, such as the MCTM. If both measurements (the consensual assessment technique and the MCTM) result in satisfactorily reliable scores that correlate, then, perhaps each is a valid way in which to measure the musical creativity of children. If the measures do not correlate, then one must speculate about the meaning of both scores.

A secondary purpose is to determine if children’s music compositions improve as a result of time spent composing. Will mere exposure to music composition ideas, with time for exploration in music composition help to improve the creativity of children’s music compositions? In order to answer this question, creativity scores of children’s music compositions collected early in the study (before exploration or instruction) will be compared with creativity scores of music compositions completed after time exploring concepts of music composition. Will the scores from the MCTM correlate more highly with the last composition compared to the first?

The data collection took place over three consecutive Saturdays in which 10- and 11-year-old children came to Northwestern University to enroll in a music composition workshop. Thirty children volunteered for the study. Each child worked alone on a computer and learned to use music sequencing software with a MIDI synthesizer during the first session. Their assignment at the end of the first session was to compose a song they liked, using the music sequencing software. On the second and third days of the sessions, children used a researcher-designed music composition program that guided them through using the musical elements as components in music composition. They were free to work at their own pace. On day two and day three, the children were also individually tested on the MCTM (children left the composition lab to take the MCTM test in a separate room). The current version of the MCTM involves student improvisation and composition tasks on a MIDI synthesizer with prompts from a computer screen. A researcher worked with each child as they took 20 minutes (average) to complete the MCTM. Finally, at the conclusion of day three, the subjects were instructed as on day one, to compose a musical composition that they liked.

Complete data for each subject included two musical compositions (day one and three) that were created using a computer sequencing program, and a score from the MCTM. For various reasons (such as missing a session) 25 of the 30 original subjects were included in the final analyses. Two researchers scored the MCTM independently. Three elementary/middle school general music teachers using Amabile’s consensual assessment technique assessed the children’s compositions for creativity.

The results of the study will examine the correlation between creativity scores from children’s compositions with their MCTM scores. The MCTM scores will be correlated with all
compositions, as well as separately with creativity scores from compositions created the first day and compositions created on the third day. In addition, music composition creativity scores from day one of the study will be compared to the scores of compositions completed on day three to determine if time spent composing has a positive effect on the creativity of music compositions.
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References


