
Title	Teaching and learning of creativity through Jazz improvisation
Author(s)	Phillip Towndrow
Source	<i>REACT</i> , 2003(1), 43-52
Published by	National Institute of Education (Singapore)

This document may be used for private study or research purpose only. This document or any part of it may not be duplicated and/or distributed without permission of the copyright owner.

The Singapore Copyright Act applies to the use of this document.

Teaching and Learning of Creativity through Jazz Improvisation

Phillip Towndrow

Introduction

Every living, breathing human being has the potential to be creative. Each of us is a unique individual capable of creating ... it comes with the human territory. We are, simply, quite a creative species. (Creativity Web, 1999a)

There is a widespread belief that Singaporeans can secure a competitive edge in the emerging global knowledge-based economy by thinking about issues rationally, approaching problems creatively and making decisions based on sound judgment (Chua and Leong, 1997). Such is the Singapore Government's resolve to help pupils become better thinkers and learners that it is prepared to reduce regular content curriculum time by up to 30% to make way for thinking and creativity to flourish in classrooms (Ministry of Education, 1999). However, it needs to be recognized that not all people are creative to the same extent (Creativity Web, 1999b), and so the issue of how to develop and exploit the creative potential of individuals remains a challenge for educators and policy-makers alike.

Responding to the call to translate the Ministry's "Thinking Schools, Learning Nation" vision into a set of meaningful practices, Chang and Goh (2002) recently edited a "handbook" for teachers on teaching thinking skills. The final two chapters in this volume by Ng and Tan (2002), and Tan and Law (2002), address the teaching and learning of creative thinking in generic terms, but the scope of their discussions does not allow them to consider in detail the nature of creative activity in a specific domain. This review takes up that challenge by considering what cognitive psychological studies of musical composition and improvisation can tell us about the teaching and learning of creativity in both musical and non-musical

contexts. These issues are addressed primarily by looking at jazz, which has been described as an important musical genre that characterizes "... a comprehensive process [integrating] the disciplines of theory, aural musicianship, musicology and aesthetics" (Sarath, 1993, p. 23). The approach taken in this review is justified on the following grounds:

1. The study of creativity in music illustrates well many of the points raised in the general literature about the teaching and learning of creative thinking. Furthermore, the importance of creative musicianship is recognized in international curricula. For example, outcomes for the English National Curriculum, Key Stage 3 (11–14 years), state that pupils should be taught how to improvise, explore and develop musical ideas when performing (National Curriculum for England, 2002).
2. Although music is studied at both Ordinary and Advanced levels in Singapore (Ministry of Education, 2002a, b), the playing of jazz is peripheral to the mainstream examination curricula. Therefore, the focus on jazz is considered in itself a creative way of furthering our understanding of the challenges educators face by offering insights and practical strategies from a field that is relatively unexplored locally.

Review

Defining Creativity

It may come as a surprise to some to learn that defining creativity poses a problem for theorists. For example, Boden (1994, p. 75) suggests that "... the apparent unpredictability of creativity seems to outlaw any systematic explanation, whether scientific or historical". Similarly, Johnson-Laird (1993, p. 254) comments that "many people believe that creation is mysterious and magical, and that it neither can nor should be analysed presumably because the very act of defining creativity is to immediately limit it in some way". For his part, Taylor (1988) states that creative performance is a very complex multivariable phenomenon that no single variable can account for. Despite these views, the search for a "criterion of creativity" (something that predicts the potential to be creative) persists.

According to Hargreaves (1986) two main types of criteria have been used to predict creative potential: those based on the nature of creative products and those based on the characteristics of the creative people. As far as products are concerned, opinion holds that it is profitable to look at creativity in action and try to

establish what is happening. For instance, the case is often cited of Mozart who is believed to have transcribed complete compositions after they had come into his mind. The point to be made here is that if Mozart was gifted in this way, creativity might indeed be a mysterious thing (Hargreaves, 1986). However, a more practical view of creativity combines inspiration and hard work. This has led theorists to posit the existence of a series of steps that constitute a cognitive creative process.

For example, Wallas (1926) uses a four-stage theory to explain creativity in terms of a problem–solution protocol. Step one is the “preparatory” stage where information is collected that is deemed relevant to the problem at hand. Step two involves an “incubation” period where conscious attention is turned away from the problem and unconscious processes predominate. Step three or “illumination” involves the “Eureka” experience in which a specific creative solution is defined. Finally, step four, involves the “verification” or working out of the solution to the problem as identified.

Johnson-Laird (1993, pp. 255–256) claims that the creative process has some characteristic properties. First, like all mental processes, it is said to start from some given building blocks, as it is not possible to create something out of nothing. Second, the process (although it might not have a precise goal) is subject to some existing constraints or criteria that it must meet. Thus, in practice, a creator makes choices that are determined by a genre or “framework” that is in operation (Johnson-Laird, 1988, p. 207). These points can be illustrated by first looking briefly at the way composers work and then turning to the fascinating realm of jazz improvisation.

The Creative Process of Musical Composition

How Composers Work

It is difficult to get a clear picture of how composers work. However, an attempt using successive drafts of computer-based compositions has identified two main styles of composing (Folkestad, Hargreaves and Lindström, 1998). In the *horizontal* mode, composition and arrangement were observed as separate processes. For example, tunes were completed as a whole by composing them on an instrument and then arranging them on the computer (some improvisation was used during this phase). In contrast, the *vertical* mode involved compositions being built up of completed sections before moving on. In other words, composition and arrangement were integrated processes.

Jazz Improvisation

To the untrained ear, jazz improvisation comes across as a mass of discordant sound produced by musicians vying for attention. However, closer analysis reveals that jazz musicians carefully manipulate predetermined harmonic and rhythmic frameworks as they weave in and out of standard melodies and short musical phrases (Hinz, 1995; Sawyer, 1999). This flexibility requires a highly disciplined approach and when done well has the potential to provide an "instant line" to creativity in music (Hargreaves, Cork and Setton, 1991). This is a key point to note but surprisingly little empirical data has been collected from practising jazz improvisers to help us understand what they do and how they do it (Hargreaves, 1999).

A notable exception is the research of Hargreaves *et al.* (1991) who used a form of protocol analysis to investigate some of the cognitive processes involved in the improvisations of *novice* and *expert* jazz pianists. This study identified the playing strategies used, and the decisions made at each skill level, by a small number of participants who were invited to record right-hand "solo" improvisations over pre-recorded "backing tracks" that varied in speed and musical structure. The researchers found that either the novices had no plan in mind (apart from to keep going) or they focused on one element of the pre-recorded track and kept with that. In striking contrast, the experts had definite plans to guide their playing; either they played in a style that was consistent with the track, told a story by exploiting the "space" of the music or continued with the mood established by the backing. Further differences were noted between novices and experts in the way that they modified their plans as the music progressed. Whereas novices changed the course of their improvisations according to what they had previously done, the experts' plans were provisional in nature; they relaxed more and resorted to rehearsed "tricks" or "clichés" when they ran into difficulties.

This study of musical improvisation suggests that individuals go about the business of creating music in different ways. If it is accepted that *diversity of approach* is a key concern in musical creativity, then this will affect the extent to which the cognitive processes involved can be broken down into neat packages of analysis (Weisberg, 1993). This point of view is given greater poignancy when it is noted that there are principles that underlie improvisatory skills that are inaccessible to consciousness although some musicians may be aware of them without having "access" to them (Johnson-Laird, 1993).

Nevertheless, the ways in which artists exploit musical frameworks leads to the conclusion that creative thinking comes about as the result of *ordinary* thought

processes. If this is the case, then the way is open for (a) artistic creativity to be considered as something that can be learned and (b) the existence of thinking skills to be considered as predictors of creativity (Weisberg, 1993).

The preceding points imply that creativity is not the sole province of the gifted. Amabile (1989) supports this view with respect to children by explaining that creativity can be nurtured by providing a supportive learning environment that eschews evaluation, reward and competition in favour of providing as much flexibility as possible in the choice of activities and the way they are done. If there is a general point to be made here, then perhaps it can be illuminated by looking at how jazz improvisers learn their craft.

Learning Jazz

Musical improvisation can be learned. For instance, Sudnow (1993), a classically trained pianist, highlights a number of interesting stages in learning jazz improvisation in a self-observatory study. First, he learned to move his hands in new ways by learning the “anatomy” of left-hand jazz chords. At this stage, he acquired some smoothness in his playing from within a strict focus on rhythm. Later he was able to combine these chords with non-improvized song melodies. The next significant phase in the learning experience was to start improvising by incorporating previously taught chord-scales that were used like formulae to direct the movement of his fingers and hands. Finally, Sudnow was able to release himself from the grip of these formulaic movements and, as a result, his playing became more fluid.

It needs to be acknowledged that learning to improvise is an arduous process (Erwin, 1995; Hinz, 1995). One of the reasons for this is that it is easy to miss the point that jazz requires of those who aspire to play it a sound musical theory background and a great deal of daily practice (Madura, 1997). Take the career of jazz guitarist, John McLaughlin, as a case in point.

In an interview with Rosen (1975), McLaughlin provided some invaluable insights into how he hones his technical expertise:

If you're willing to spend hours working, devoting and dedicating yourself to the articulation and execution, then sooner or later you're going to come through. ... There are several reasons for learning scales: One, the knowledge will unlock the neck for you, you'll learn the instrument. Second, if I say I want you to improvise over Gmaj7aug5, then go to Ebaug9b5 then to Bmaj7b5 — well, if you don't know what those chords are in scale terms,

you're lost. ... Not only do you have to know scales though, you have to know rhythm, because rhythm is of supreme importance. It's hard to say how you learn this — you can practice with a metronome or, preferably, a drummer. I used to use a cassette player and write down random sets of chords, then play them rhythmically — 6/8, 4/8, 3/8, 7/8, 5/8, 9/8, 11/8, 13/8, 21/8, anything you want. Just write out some sequences and improvise through them. Eventually you start finding chinks in your knowledge, and then some lights in the darkness.

There are several important points to surface here. McLaughlin clearly demonstrates his confidence, curiosity and willingness to confront the boundaries of his knowledge and technical competence. He also suggests that he cannot account entirely for what he does.

Discussion

Commentators have pointed to the potential of jazz improvisation to foster creativity and learning in a number of domains. Some of the educational benefits mentioned include:

- The creation of learning environments that encourage students to express their cultural identities (Sarath, 1993);
- Opportunities for freedom of expression at different levels of ability, age and experience (Erwin, 1995);
- Possible insights into the processes involved in composing music (Sarath, 1993; Erwin, 1995); and
- Collaboration in problem solving, play, theatre and story telling (Welch, 1999).

On the basis that jazz musicianship can be learned, questions arise as to how it can be taught. Referring to the United States, Tyrome (1998) notes that teaching jazz is often treated like painting by numbers. This, he claims, is done in the belief that a certain pattern of steps can lead to guaranteed results. However useful a structured approach may be, sceptics note that formulaic approaches to teaching creativity necessarily limit the extent to which it can be fostered. In addition, they advocate that jazz can only be "taught" up to a certain point and then the student musician's individuality needs to take precedence.

It is, then, at the point where conscious access to improvisatory skills ends that individuality must intervene to carry the musician forward towards expert status. Given the complexity of the issues relating to creativity mentioned so far, this

point is probably indeterminable although it may exist on a spectrum of experiences based on theoretical knowledge, practice and training. Nonetheless, the preceding points are encouraging for students who want to, or are required to, study music at school as they suggest that some skills in jazz can be learned.

If Amabile (1989) and Hargreaves *et al.* (1991) are correct, then the development and exploitation of the creative potential of individuals requires teachers to provide learning environments that support self-expression, originality and flexibility in the choice of activities and their manner of execution. This may involve teachers teaching creatively in order to provide the supportive conditions for creativity to occur (Ng and Tan, 2002) but creative teaching is not to be confused with teaching creativity. What we learn from improvisers is that formal domain expertise needs to be coupled with experiences that de-emphasize the formal aspects of teaching and learning. Acceptance of the notion that creative thinking comes about as the result of reasonable and ordinary thought processes opens the way for a consideration of the extent to which cognitive strategies can or need to be taught.

Conclusion

This review set out to explore what cognitive psychological studies of musical composition and improvisation can tell us about the teaching and learning of creativity. Creativity is a complex aspect of human behaviour that cannot easily be defined. However, progress was made by identifying steps in a cognitive creative process that help us to understand what is going on when something is created.

As far as music composition and jazz improvisation are concerned, it emerged that research study participants were able to create music by exploiting conceptual spaces to varying degrees. Support was given to the suggestion that musical creativity is subject to thinking processes that are reasonable and ordinary. This opens the way for jazz improvisation to be considered as something that can be learned. Finally, a cautionary note was sounded about teaching musical creativity through a formulaic approach. Ultimately, a point is reached where an individual's personality needs to predominate and this can probably best be achieved through a supportive, but non-intrusive learning environment that eschews excessive competition and evaluation.

Implications

- On the basis that expert and novice improvisers exploit creative spaces differently, musical creativity would seem to involve learning how to balance freedom and constraint.
- Although there are grounds to believe that problem-solving skills underpin creativity, master jazz musicians seem to have a “drive” towards constantly confronting their limitations. They also may not be able to fully explain how they learn their craft which suggests that there may still be a place for an element of mysticism to surround creative people and products.
- There seems to be a point at which cognitive creative processes are no longer open to the individual’s consciousness. Any attempt, therefore, to identify the steps involved in creative thinking is likely to be incomplete and unrealizable.
- Successful creative artistes use expert domain knowledge as a foundation for their creative endeavours. One should be mindful, therefore, of the consequences of reducing core curriculum content in order to liberate classroom time for other activities.
- Attempts at making thinking explicit might well risk stumping creativity by getting everyone to “sound” the same as a result of following set procedures. Consequently, if there is anything to be learned in regular classrooms from jazz improvisers it is that diversity of approach is preferable. Students should be allowed, wherever possible, to explore conceptual spaces freely.

References

- Amabile, T. M. (1989). *Growing Up Creative: Nurturing a Lifetime of Creativity*. New York: C. E. F. Press.
- Boden, M. A. (1994). What is Creativity? in M. A. Boden (Ed.), *Dimensions of Creativity*. Cambridge: MIT Press.
- Chang S. C. A. and Goh, C. C. M. (Eds.) (2002). *Teachers’ Handbook on Teaching Generic Thinking Skills*. Singapore: Prentice Hall.
- Chua, M. H. P. & Leong, H. (1997). The Thinking Programme in Singapore — An Overview. Paper presented at the *7th International Conference on Thinking*, June 1–6, 1997, Singapore International Convention and Exhibition Centre.

- Creativity Web (1999a). *How do I know if I am, or could be, creative?* http://members.ozemail.com.au/~caveman/Creative/Basics/am_i_creative.htm (downloaded 18/11/02).
- Creativity Web (1999b). *Isn't creativity found in a few people, like inventors or artists?* <http://members.ozemail.com.au/~caveman/Creative/Basics/artists.htm> (downloaded 18/11/02).
- Erwin, J. (1995). Beyond the page. *Teaching Music*, 3(3), 28–31.
- Folkestad, G., Hargreaves, D. J. & Lindström, B. (1998). Compositional strategies in computer-based music making. *British Journal of Music Education*, 15(1), 83–97.
- Hargreaves, D. J. (1986). *The Developmental Psychology of Music*. Cambridge: Cambridge University Press.
- Hargreaves, D. J. (1999). Response to “improvized conversations: Music, collaboration, and development” by Keith Sawyer. *Psychology of Music*, 27(2), 205–208.
- Hargreaves, D. J., Cork, C. A. & Setton, T. (1991). Cognitive strategies and improvisation: An explanatory study. *Canadian Journal of Research in Music Education*, 33, 47–54.
- Hinz, B. (1995). Introducing jazz improvisation. *Teaching Music*, 2(5), 30–32.
- Johnson-Laird, P. N. (1988). Freedom and constraint in creativity, in R. J. Sternberg (Ed.), *The Nature of Creativity: Contemporary Psychological Perspectives*. Cambridge: Cambridge University Press.
- Johnson-Laird, P. N. (1993). *The Computer and the Mind*. (2nd edn). London: Fontana Press.
- Madura, P.D. (1997). Jazz improvisation for the vocal student. *Teaching Music*, 4(6), 26–28.
- Ministry of Education (1999). Building Competitiveness in the Knowledge Economy — how is Asia Facing up to the Task? Speech by RAdm (NS) Teo Chee Hean, Singapore's Minister for Education at the 1999 East Asia Economic Summit Plenary Session, World Economic Forum on 19 October 1999 @ 10.15am at Suntec City.
- Ministry of Education (2002a). 6023 Music O Level. <http://www.moe.sg/exams/syllabus/2002/6023.pdf> (downloaded 18/11/02).
- Ministry of Education (2002b). GCE Advanced Level. <http://www.moe.sg/exams/syllabus/2002/9314.pdf> (downloaded 18/11/02).
- National Curriculum for England (2002). Programme of Study, Music, Key Stage 3. <http://www.nc.uk.net/nc/contents/Mu-3-POS.html> (downloaded 20/11/02).

- Ng, A. K. & Tan, S. (2002). Helping Asian students to be more creative by nurturing a creative climate in the classroom, in S. C. A. Chang & C. C. M. Goh (Eds.), *Teachers' Handbook on Teaching Generic Thinking Skills*. Singapore: Prentice Hall.
- Rosen, S. (1975). My life and guitar. *Guitar Player Magazine*. February.
- Sarath, E. (1993). Improvisation for global musicianship. *Music Educators' Journal*, 80(2), 23–28.
- Sawyer, R. K. (1999). Moving forward: Issues for future research in improvisation and education. *Psychology of Music*, 27(2), 215–216.
- Sudnow, D. (1993). *The Ways of the Hand: The Organisation of Improvised Conduct*. Cambridge, MA: MIT Press.
- Tan A. G. & Law, L. C. (2002). Fostering creative and critical thinking in the classroom, in S. C. A. Chang and C. C. M. Goh (Eds.), *Teachers' Handbook on Teaching Generic Thinking Skills*. Singapore: Prentice Hall.
- Taylor, C. W. (1988). Various approaches to and definitions of creativity, in R. J. Sternberg (Ed.), *The Nature of Creativity: Contemporary Psychological Perspectives*. Cambridge: Cambridge University Press.
- Tyrome, T. (1998). Hot and bothered over all that jazz. *The Times Higher*, 25 December, pp. 16–17.
- Wallas, G. (1926). *The Art of Thought*. London: Watts.
- Weisberg, R. W. (1993). *Creativity: Beyond The Myth of Genius*. New York: W.H. Freeman and Company.
- Welch, G. F. (1999). Education and music improvisation: In response to Keith Sawyer. *Psychology of Music*, 27(2), 211–214.