

Jazz Education and Computer Music Technology Go Hand and Hand!

by John Kuzmich, Jr.

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My favorite music technology applications are in jazz. Jazz by its very nature is a creative process with many opportunities for improvisation, arranging and composing.

Technology opportunities abound in jazz education as well as meeting national MENC and local school district music standards.

One of the concerns about jazz education today is that most music educators have not been trained in jazz education techniques, yet are expected to teach it. Consequently, they are hesitant as they experience some limitations in jazz instruction, especially when their ensembles are adjudicated by trained jazz professionals at festivals. But with jazz technology applications, it is possible to accelerate the learning curve toward mastering jazz education principles.

Excellent software, interactive CD-ROM, videos, and books are available to expand the jazz education experience.

Creative Internet Application

Believe it or not, some of the best instruction can be for free on the Internet.

[Http://www.changes98.com](http://www.changes98.com) is the ultimate jazz Internet web-based teaching tool. Students can print out any scale or chord or chord substitution for the solos they're working on free from this website. Or for \$20.00, you can have a CD-ROM with all the website information without need of the Internet. For \$10.00, you can order a 125 page PDF book version. You must see this web site for yourself to believe how powerful it is. In both treble and bass clef, you will find 58 spellings of chords and scales in any key, spelling of 48 advanced scales and modes in any key,

and 54 common tone chord substitutions for any note in a chromatic scale. Note: the manuscript on-line was printed in Finale by Coda Music.

Jazz Scale Suggester System, Learn Improvisation, Software at <http://members.w-link.net/~jsss/> is a unique web page designed to answer basic jazz theory questions. Scales covered include: Major, Natural Minor, Harmonic Minor, Jazz Minor (Melodic Minor Ascending), Dorian, Pentatonic, Blues, Diminished, Whole Tone, Dominant Seventh (Mixolydian). The full product can be downloaded for only \$9.95.

If you initiate compound searches in your web browser on the Internet, such as <http://www.yahoo.com> or <http://www.altavista.com> on either “jazz software” or “jazz history” and “software,” you will come up with some interesting web sites to explore. For example under the search of “jazz history” and “software,” I found a jazz history course entitled: *Jazz History and Appreciation - Part 1* by Bill Yeager at http://trumpet.sdsu.edu/x351D/Yeager_x351D_SYL_ESL_P1.html sponsored by San Diego State University. This course, *The Jazz History and Appreciation* course, is offered as a self-contained course on the Internet with on-line study materials, on-line history of jazz music, examinations, and grades -- nothing else to buy plus it may be taken by anyone at any time from anywhere in the world for credit, if desired. Your search of the web will surprised you with all the jazz education that is available. For many “hot” linked bookmarks, go to: <http://www.kuzmich.com/handouts/bookmarks.html> for MIDI files, jazz, video streaming, and music education Internet links dealing with music education.

Automatic Accompaniment Generation Software

If ever there was a software application made in heaven for music educators, the automatic accompaniment generator is such an item. You can bring up an accompaniment in seconds that is “hip” and motivating for the student to practice with. For both classical and jazz applications for voice and band instruments, *SmartMusic* by Coda Music at <http://www.codamusic.com> offers over 20,000 accompaniments with the capability of saving the student’s performance as a .WAV file. It is possible for a student to record his/her practice session or assignment and then sent it to the teacher via an e-mail attachment for comment, or even record it for grandmother at Christmas. You will like working with over a dozen Aebersold and Alfred jazz collections - at any tempo, any key, mute any instruments, and even put any passage in a loop for extra practice. It is now available for educators via their web site: <http://www.smartmusic.com>, all for a special price of \$90.00 a year. It will be available at your favorite music store this spring for students, private teachers and music hobbyists this fall via their web site.

Band In-A-Box by PG Music at <http://www.pgmusic.com> is an incredible product that can provide contemporary music accompaniments in dozens of music styles. It is basically a rhythm section consisting of piano, bass and drum parts. But what makes this program so creative, is that you make a full sounding arrangement by add a melody with either a MIDI instrument or record an acoustical instrument “live” from a microphone. The master recording could then be saved as a .WAV file and posted on the Internet as well. You can harmonize the melody no less than fifty different ways. The software can create improvised solos in almost 250 different music styles/artists providing copyright free improvisation solos for students to emulate. You can also print out compositions in a full score format and with lyrics. Any

accompaniment can be transposed instantly with a different tempo making improvisation practice more interesting. I suggest you convert the .WAV to an MP3 file format and you will have a file 10 to 15 times smaller than the original .WAV file for easier Internet posting. To help you master these features, you'll appreciate the 12 tutorials. Burning CD's is another plus with this program for finished compositions.

Jammer Professional at <http://www.soundtrek.com> is another automatic accompaniment generating software program for the Windows platform. It is particularly strong in creating professional arrangements with keyboards, guitars, strings, brass, drums and more. It has a powerful 256 track multiport sequencer with over 200 intros, grooves, breaks, and endings in a variety of styles and an automatic 6-part harmony composer, assorted song templates and demos, solid drum beats and original bass lines. It allows more chords per measure than most other accompaniment generator programs. I particularly like its easy step-by-step tutorial to learn the program.

There's still another quality automatic accompaniment generator software program to consider using, MiBAC Jazz Improvisation by MiBAC Music Software at <http://www.mibac.com>. It takes the same approach as Band in-A-Box and Jammer Professional. The chords are "hot" and I particularly like the ballad styles. The jazz styles are clean and realistic sounding. Within each of the four main styles, there are three tempo-related substyles, so you have a total of 12 styles to choose from. Styles include ballad, swing, and bebop in 4/4 and 3/4; rock shuffle; bossa nova; samba; 12/8 blues; and two-beat feel. You can mix the styles of each instrument anywhere in the song. MiBAC Jazz has just been released for Windows, and the new USB-compatible Mac version supports OMS, FreeMidi, and QuickTime.

If you want an automatic accompaniment generator that borders on artificial intelligence, check out *CAMP*, version 4.2. published by Microworks at <http://www.mxw.com/>. It has an Auto Notation feature more advanced than most sequencers with thousands of linear and harmonic try-outs for composing and film scoring. It also has an Auto Harmonize feature that is a delight for arrangers. For students, *CAMPS 4* has a teaching tool to demonstrate how melody/chord relationships work. It really does compose music from scratch and from any starting point in an existing composition in any creating both melodic musical lines and for chord structures. A must-have product for the creative person.

Transcribing Software

Transcribing is very important in jazz education because students gain an intuitive to understanding of the rules of jazz improvisation by transcribing and analyzing jazz solos of great performers when they slow down a solo and listening to it or writing it out, then they play it. Transcribing is much easier now with powerful transcribing software. Change the tempo without changing the pitch. Filtering allows the solo to stand out for more audible identify. Looping lets you easily listen to a small section as much as you like.

Transkriber by Reed-Kotler at <http://www.reedkotler.com> is excellent and has all the whistles and bells you will ever need to transcribe the slower playback in “studio quality.” Many top name players, transcribers and producers use this software and it is the official transcribing software for *Guitar One Magazine*. It is available for both Windows and Macintosh. You can playback any note to check against the note(s) in questions during the transcribing process. Its filtering capabilities are among the best in the industry with even a vocal/line eliminator. I particularly like the CD ripper that is built into the Windows version.

For those of you who do a lot of transcribing, Reed-Kotler also offers several small hardware models that can operate on a portable battery-operated CD player with headphones to remotely transcribe anyplace. One even specializes in transcribing bass lines.

Transcribe! at www.seventhstring.demon.co.uk is product from England offering a lot of transcribing features. It reads, plays and records audio files without modifying them. I like that it is distributed as shareware for 30 days so you can try it first before purchasing it for \$40.00. You can quickly download it and access how helpful this software can be for you. There is a tutorial on how to begin transcribing for beginners. It is available for Windows, Mac and native OS-X versions.

SlowGold (<http://www.worldwidewoodshed.com>) is a slick transcribing product that slows down sounds without changing the pitch with very high sound quality. I like the pitch shifting feature which allows you to tune the songs you're working on to any key or to simply tune the recordings to concert pitch if they were recorded a bit flat or sharp. It is a Windows program only. It even works with MP3 files and can record from any source: cassette, phono, mixer, etc. Another feature is that it links automatically to notation and sequencer programs.

Transcribing software can meet another vital need to your jazz program. Transcribing software can meet another vital need in your jazz program. Change the playback speed of play along recordings such as Jamey Aebersold and practice improvisation at any tempo instantly. Listen to solo cadences at a slower speed to better understand the notes being performed from the enormous Music Minus One library. Looping is a great technique for practicing a short section of a fast solo to understand its content. With filtering, it is even possible to create your own practice play along recordings from original jazz recordings by filtering out the soloist

completely!

Improvisation

For play-along instruction, check out *MIDI Jazz Improvisation* by Tom Rudolph and Roger Morgan published by Electronic Courseware Systems at <http://www.ecsmedia.com>. This two-volume series allows the flexibility of changing keys, tempo, and track selection. Volume I exercises introduce II-V-I progresses, slow blues in Bb, medium blues in F, fast blues in C, minor blues and a sample tune. Volume II exercises introduce more advanced concepts including, samba, ballads with II-V progressions, 12-bar Blues with substitutions, Blues with a bridge, funk/rock improvisation and complex II-V-I progressions.

Breakthrough To Improv: The Secrets of Improvisation by Dave Frank and is published by Hal Leonard is the first DVD improvisational instruction material published. For more information, please see a review of this material in the DVD section below.

Ear Training and Music Theory

Auralia by Rising Software at <http://www.risingsoftware.com> is my favorite ear training program because it is so versatile and powerful and above all, it works as advertised. *Auralia* is a structured learning program which is part teacher directed and part computer aided. It provides a curriculum framework promoting a competency-based training approach which helps fill the need for a structured music resource for schools and tertiary institutions. Its 26 topics are very comprehensive. They are divided into four areas of practice: intervals and scales, pitch and melody, rhythm and chords. Jazz instruction is covered extensively in these four areas of instructional practice. Advanced Scales teaches aural identification of various scales including modes; of the melodic minor, bebop scales, and symmetrical scales. Jazz Chords covers aural

recognition of all basic chord types with extensions and altered extensions. Jazz Chord Singing requires you to submit your answer using a microphone. Jazz Chords Progressions covers everything from 2-5-1, progressions, to Coltrane changes. What makes this program so accountable is there is extensive testing that can be customized for your students as well as a tutorial “Professor” who guides you. It has an outstanding record keeping system with full reports, even over the network. *The Performing Ear* is a resource book of practical aural exercises which align with Auralia and designed for classroom, music studio or personal use, to augment the training that *Auralia* provides.

Another product by Rising Software is a written theory product called *Musition*. *Musition 2* is a drill-based instructional product making the learning of the fundamentals of music fun and easy for beginning to advanced levels. Topics covered are scales, intervals, instrument range, note reading, advanced clefs, key signatures, scale degrees, symbols, terms, musical concepts, chord recognition, meter recognition, rhythm notation and transposition. Its user interface is very easy to use. It provides a lot of written theory for classical music. And for jazz instruction, the following features are invaluable: Chord Symbols - visual identification of chord symbols, Chord Scale Relations - identifying appropriate scale choices when improvising over chord types; Jazz Scales - visual identification and writing of scales, including modes of the melodic minor, bebop scales, and symmetrical scales; and Scale Home Keys - understanding modes and how they relate to a parent 'home' key. What makes *Musition 2* even more valuable is its extensive reporting features, including 20 built-in reports.

Alfred Publishing’s *Essentials of Music Theory* at <http://www.alfred.com> is perhaps the

most comprehensive classroom music theory program that provides extensive tutorial instruction for middle and high school levels. It offers extensive instruction in three volumes. Volumes 2 and 3 cover all the fruits, vegetables and grains necessary to develop the chops to play jazz with Dominant 7th chord inversions (V7 first introduced in Volume 2), Basic Major chord progressions (nothing specific on Jazz), Minor chord progressions, Modes, Harmonizing a melody, Composing a melody, 12-Bar Blues Chord Progression, Blues Scale, and Basic two and three-part and rondo form. To make the program more integrated in a computer lab, there is a networking version available that makes record keeping a joy.

MiBAC MUSIC LESSONS I, Fundamentals, and MUSIC LESSONS II, Chords and Harmony at <http://www.mibac.com>, are very helpful drill and practice software packages for jazz. Topics covered in MUSIC LESSONS I are note names, circle of fifths, key signatures, major/minor scales, modes, jazz scales, scale degrees, intervals, note/rest durations, intervals ear training and scales ear training. MUSIC LESSONS II is the most comprehensive software program for teaching and learning chords and harmony. It teaches visual recognition, written music notation, playing skills (piano and guitar), and ear training. Content includes chord elements, triads, triads ear training, seventh chords, seventh chords ear training, roman numeral identification, secondary dominants, and Neapolitan and augmented sixth chords. MUSIC LESSONS I for Macintosh and MUSIC LESSONS II (Win/Mac) allow you to create custom drills to focus on specific topics at any level of instruction. MUSIC LESSONS I for Windows has built-in options that allow you to select the level of difficulty for each drill. Both MUSIC LESSONS I and II have online, comprehensive music theory references explaining all theory

and concepts related to the drills.

Jazz History and Instruction: CD-Rom's and Videos!

Of all the music technologies, videos are shining more light on jazz, especially guitar and drum-set techniques. Jazz history videos illustrate a very important topic for jazz ensembles, unfortunately, music history is rarely addressed in jazz ensemble classes. The Clearvue/eav at [http://www.clearvue.com/ History of Jazz](http://www.clearvue.com/History%20of%20Jazz) is an outstanding single introduction video to the history of jazz emceed by the legendary Billy Taylor. This 49 minute video will dazzle your students with the sights and sounds of jazz. This video series traces the history of jazz from its roots in slave songs to present-day innovations. It presents a good historical survey, focuses on several jazz styles, introduces students to famous musicians illustrating their artistry. The teacher's guide includes suggested viewing segments, identification of the music used, recommended recordings, a glossary of music terms, and words to review that expand your approach to the jazz experience. *The Ken Burns Jazz* series published by PBS Home Video and the audio CD's by Columbia and is distributed by Clearvue/eav at <http://www.clearvue.com> consists of ten 120 minute videos and eleven CD's . Documented here are the most popular and influential jazz artists and their music.

Clearvue's *The History of Jazz CD-ROM* is both educational and entertaining. Rare photos and many musical examples take you deep into the history of jazz. The sights and sounds of jazz music legends include: Louis Armstrong, Dizzy Gillespie, Scott Joplin, Duke Ellington, Benny Goodman, and others. This CD-ROM will be a positive factor in your student's interest and understanding of the jazz experience.

Two huge catalogs of jazz videos are offered by DCI Videos from Warner Bros and View Video. There are no less than 100 videos in the two catalogs many of which are also

converted to DVD. The full range of titles can be found on the V.I.E.W. Video web site at <http://www.view.com>. Among the video titles available on VHS are Gil Evans and His Orchestra, Louis Bellson and His Big Band, Mel Lewis and His Big Band. Bob James Live, Airtio & Flora Purim, Moscow Sax Quintet, George Shearing, Joe Williams, Elvin Jones Jazz Machine, Oscar Peterson: 40 Years of MJQ, and dozens more.

Carl Fischer at <http://www.carlfischer.com/> has recently come out with three well designed drumset videos by Dave Weckl entitled “How to Practice,” How to Develop Your Sound, and “How Develop Technique” as part of their A Natural Evolution series. The step-by-step is brought to life with exciting live recordings of the Dave Weckl Band and a special acoustic group put together for this video.

New Wave of Instruction: DVD!

Video View at <http://www.view.com> is a leader in presenting jazz history materials in DVD format. The variety of special DVD features include: Dolby digital stereo audio, digitally mastered audio & video, multi-directional interactive menus, as many as 50 scene selections and instant chapter access to songs, instant access to instrumental solos, additional audio selections, additional video footage, multiple Artist biography, a 10 question jazz IQ test, and Jazz Trivia & Fun Facts Track. These features create a perfect audio-visual aid, and with the instant access feature you do not have to fast-forward and hope you hit the right spot. The future of jazz education instructional materials is brighter with DVD's..

Here is what View Video has available on DVD for jazz history: Dizzy Gillespie: A Night in Chicago, Nancy Wilson at Carnegie Hall, The Ladies Sing the Blues (with Billie Holiday, Sarah Vaughan etc), Alberta Hunter; My Castle's Rockin' , Fela in Concert, Grover

Washington Jr. in Concert, The Herbie Hancock Trio with Ron Carter and Billy Cobham, Antonio Carlos Jobim: An All-Star Tribute, featuring Jobim himself with Herbie Hancock, Gonzalo Rubalcaba, Shirley Horn, Jon Hendricks, Gal Costa and Joe Henderson.

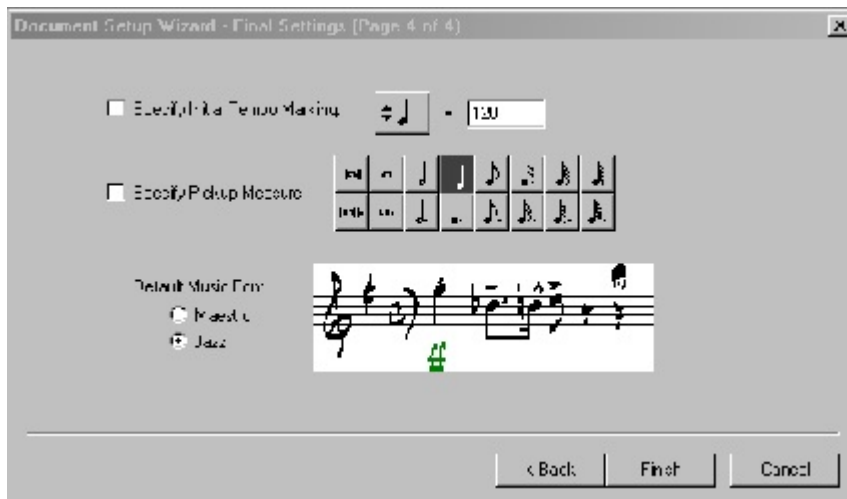
Hal Leonard at <http://www.halleonard.com/> has come out with the first DVD improvisation material entitled: *Breakthrough To Improv: The Secrets of Improvisation* by Dave Frank. If you're looking for guidelines on where to begin improvisation instruction and how to practice, this is a good place to start. It offers guidelines on how to develop a solo, how to creatively connect phrases and add triplets and double-time lines to your solos. In all, it offers 15 steps to creating better solos.

Warner Bros. Publications is the first publisher to include a DVD in an instrumental jazz education pedagogy book titled *Jazz Pedagogy: The Jazz Educator's Handbook and Resource Guide* by J. Richard Dunscomb and Dr. Willie L. Hill, Jr. It gives structure to planning and implementing a successful jazz program. It is a nuts and bolts method for novice to advanced applications. The DVD gives clear and realistic about expectations in the classroom and running a jazz program. DVD contents include middle school high school and college jazz ensemble rehearsal techniques, how to teach improvisation, rhythm section techniques and audio examples of swing, mambo, salsa, merengue, samba and Afro-Cuban styles. Also included in the book is a resource guide with thousands of listing for jazz reference materials, jazz arranging/theory, individual instruments, software and instructional videos/DVDs.

Notation Software: Jazz Features!

Put standard classical notation in front of a jazz band, and you will notice problems in

reading the notation. Put jazz fonts, symbols and articulations in the parts, you will be amazed at how much better the students can sight-read the parts. Not all jazz notation products offer the same features for jazz notation. Finale 2002, Finale Allegro and PrintMusic! (\$69!) at www.codamusic.com offer a complete set of jazz symbols/articulations that can be placed anywhere on the score or attached to notes. The user decides which font to use as part of the incredibly easy set-up Wizard.



Here is an example of the symbols offered free with all three of Coda's notation programs:

FINALE AND THE JAZZ PART

RICH SIGLER

MEDIUM-UP SWING ♩ = 240

8^{va} -----

4 [A] [B] b

3 (END X ONLY)

3

2

SOLO C-7 F7(#9) B^b9(b9) E7(b9) A^b9(#11) To CODA [C] D7(b9) TRIM G^b-13

ON CUE 3


40


FINE

In addition to the above free Jazz Font fonts there are several others available to anyone desiring jazz manuscript from with their notation program.



BlueNotz , BlueText, and BlueChords jazz notation fonts have recently been renovated by their creator, Tom Williams, and are available from Musink. For a handwritten "jazz" look, check these out. Don Rice's Golden Age font can be found at http://members.aol.com/melroc/GA_Home.html

 Rich Sigler's Jazz Font, which ships free with all Coda Notation products now has a "sister" font called Swing Font. Check both out at <http://www.jazzfont.com/>.

 Other notation programs with their own jazz fonts are Igor's Igor Jazz Font and Sibelius' – Opus.

It is important to understand what a notation program can do to "ease" your work. For example, Finale/Allegro/PrintMusic! allow the jazz player to input the chord symbols by typing them in OR by playing them in from a MIDI keyboard. The notation software automatically places the symbol, or, if you wish guitar fretboard, above the staff. To make things easier, when you transpose your score the chord symbols and guitar fretboards transpose as well.

There are many features that specifically affect the jazz arranger in Finale. For example, Finale 2002 now allows the user to input a melody with chord symbols and then use Band-in-a-Box's auto-harmonization feature creating an infinite set of harmonies from 2 to 6 parts in an amazing variety of styles.

In 2 clicks and one second, this becomes:

Cunt Anjos Abujones Bui Cunt

Alto 1
 Alto 2
 Tenor 1
 Tenor 2
 Sax.

The image shows a musical score for five instruments: Alto 1, Alto 2, Tenor 1, Tenor 2, and Sax. The score is divided into five measures, each with a different tempo marking above it: "Cuarto", "Allegro", "Adagio", "Brio", and "Cuarto". The notation includes various rhythmic patterns, including sixteenth notes and eighth notes, with dynamic markings like "ff" and "f".

When you show this feature to your jazz arranging students or they will learn how to do it on their own!

The notation software program Sibelius, version 2.0 at <http://www.sibelius.com> has a lot of new jazz features. Swing playback styles includes two types of 16th note swing as well as Funk and Pop. When you type the word in "Swing" or "Straight," the music automatically plays back in that style. You can have both in the same score i.e. Latin and Swing in the same score.

The Inkpen font is improved and looks much better than the Jazz font and now supports text. You can set the glissando to white note, black note, chromatic or continuous (portamento). Sibelius sets and plays the default gliss based on the appropriate gliss for that instrument automatically so you do not have to think about it. Guitar bends now playback. It supports all symbols including open and closed mute, falls, bends, articulations, etc. With Scorch 2 you can now play back, view and print or save to disk your jazz scores through a browser without having Sibelius. Things that Sibelius 1.4 did brilliantly like drum notation and playback are all carried into version 2.0.

Looking for a great entry level notation software product at only \$49.95 with 24 stave, 8 notes per stave capabilities? Check out *Play Music* by Notation Technologies at www.notationtechnologies.com. Special school prices and site licenses are inexpensive. It has a very attractive, user-friendly interface offering a lot of jazz features like guitar tablature, chord chart insertion, lyric and text insertion, 8 voices per stave which is great for a guitarist with 6-7 strings plus all text-lyric-chord chart insertions which can be easily moved on the score by simply clicking and dragging. It doesn't require much in hardware thus making it very affordable even if you have 486 or slow Pentium computers with only 16 MB RAM.

Overture by GenieSoft at <http://www.geniesoft.com> offers a complete set of jazz symbols/articulations that can be placed freely on the score or attached to notes. It supports the Jazz Font and GoldenAge Fonts. *Overture* offers the standard jazz symbols like Lift, Slide, Rip, Fall Off, Flip, Smear, Bend, Doit, Plop and Shake, plus any symbol from any font used as an articulation. The Jazz Font cost about \$49 and the GoldenAge Font is around \$65 as an add on.

Jazz Sequencing: Hardware and Software Technology

Possibly the best tool for jazz educators ever made is the little QY100 box by Yamaha at <http://www.yamaha.com>. About the size of a video cassette tape, has a tremendous amount to offer a student learning jazz. With it's built in sequencer, students can easily carry it around and have the backup MIDI tracks to any song they are working on. With it's Smart Media Cards, the QY100 can easily transfer files to and from a computer so the song library is virtually unlimited. In addition, with it's chord sequencer and huge amount of preset style patterns, a teacher or student could program chord changes for improvisation practice. Look at the QY100 as a PDA for music.

Here's a situation that I believe Berklee College is doing for students with access to QY. The improvisation class changes are programmed into the unit. Students connect their powered speakers, stereo system, or headsets to hear the backups while practicing. If you combine this with Yamaha's "Silent Brass" mutes, a student could connect the QY output to the input of the Silent Brass and through their headphones have a total "silent" environment for practice anywhere.

In "live" performance the QY series has made it's mark. If you look closely at the table used by "Doc" Gibbs on the Food Networks "Emeril Live" show, you will see a QY20 being used This is the predecessor to the QY70 and QY100. As a composing tool, it allows you to create full sequenced compositions anywhere. I use mine on the plane as I travel. Dollar for dollar, it offers a huge bang for the buck in an all in one solution for the jazz educator.

Sequencing software programs, such as *Sonar* and *Home Student*, by Calkwalk at <http://www.cakewcake.com> can quantize swing rhythms with a percentage setting, odd time signature, multiple meters key signatures per track, standard notation, tap tempo entries, and

tempo maps.

Digital Keyboards

Not every digital keyboard is equal, even at the same price. If you ever need a creative portable keyboard unit with full size keys with a street price of under \$500.00, you really can't find anything else that is remotely close to the Yamaha PSR550 does for the money. It offers over 480 XG sounds that are far better than General MIDI plus a good sequencer and a floppy disk drive for true compatibility with your computer technology. Imagine composing a rehearsal piece for jazz band and then saving it as a Standard MIDI file to insert into the keyboard for performance and practice. Students can either play MIDI files, record their own, or use the keyboard to practice keyboard voicings of chords. It's portability is it's strong suit.

Interactive CD-ROM's

One publisher has set the standard for the use of interactive CD-ROM's in the area of jazz education and that is AC Muzik at <http://www.acmuzik.com>. Presently, they have six interactive CD-ROM's that can make a world of a difference in providing jazz instruction with or without a teacher. Simply click the mouse and immediate interactive jazz education instruction awaits you. They have following products available: *Compositions and Arrangements, The Developing Drummer, The Developing Jazz Guitarist, Jazz Fundamentals, Interactive Arranging, and Developing The Instrumental Jazz Ensemble. The Jazz Fundamentals CD-ROM* is particularly good with over 2,000 different screens of instruction which is a lot of branching instruction for an interactive CD-ROM. A review of interactive jazz education CD-ROM's is in the January, 2002 issue of the *Jazz Educators Journal* entitled: "Interactive CD-ROM's by John Kuzmich, Jr. Note: other interactive CD-ROM's are being

written.

Books on Jazz Instructional Technology with CD's, Cassettes, DVD's Components

Since 1975, I have written a regular "Survey of New Teaching Materials" column in the Jazz Educators Journal for the International Association of Jazz Educators (IAJE). Over 1,000 jazz related materials have been reviewed including many with CD's, cassettes and now DVD technology components. IAJE publishes a compilation of over 700 of these reviews in a separate publication entitled: *An Annotated Survey of Teaching Materials for Jazz Improvisation*. In a separate article in this column, I will focus in on the best jazz improvisation products with technology components.

Jazz Instrument Instruction

There is quite a bit of software available that addresses jazz techniques for band instruments, especially for rhythm section instruments. When you go to http://www.sbomagazine.com/technology/technology_jan01.htm, check the reviews of the instrumental products published by some of the following publishers: PG Music at <http://www.pgmusic.com>, Charanga at www.charanga.com/support, PlayPro at <http://www.playpro.com>, Emedia at www.emediamusic.com, Alfred Publishing at <http://www.alfred.com>, JSSMusic at <http://www.jssmusic.com>, and AC Muzik at <http://www.acmuzik.com>.

Closing Comments

Looking for more jazz technology instructional materials? For band, string and percussion instruments, I have already reviewed in other issues of SBO magazine some specialty jazz items in the November Percussion, Part 1 in November, 2001 at

http://www.sbomagazine.com/technology/technology_nov01.htm and Percussion, Part 2 in December, 2001 at http://www.sbomagazine.com/technology/technology_dec01.htm, and Strings in January, 2002 at http://www.sbomagazine.com/technology/technology_jan02.htm issues. Please go to those URL's and you will find additional materials besides the excellent ones reviewed in this installment.

Do not underestimate your student's capacity to expand their jazz education with these exciting technologies. I'm about to walk my own talk with a donation of thirteen networking computer workstations on a long-term lease I'm making to Dakota Ridge High School in Littleton, Colorado based on my SBO article entitled "Acquiring & Updating Used Computers," published in their March, 1999 issue. Good luck in your computer music technology adventures.