Managing Widening Participation in Music and Music Production

Rob Toulson

Anglia Ruskin University

Introduction

- Widening the participation of musicians and music production is an active ambition of many music education boards, instrument retailers, equipment manufactures etc

  "With music in schools, students connect to each other better - greater camaraderie, fewer fights, less racism and reduced use of hurtful sarcasm." [1]

  "The foremost technical designers and engineers in Silicon Valley are almost all practicing musicians." [2]

- Guitar sales in 2006 in the USA totalled 2,991,000 - an increase of 260% since 1998

- The average price of a purchased guitar has fallen from $579 to $372

- in 2007 Apple released the new Version 8 of Logic Pro with a 65% price reduction

- The annual US retail market of sound cards and sequencer software raise from $170,800,000 in 2000 to $411,600,000 in 2006 [3]

Introduction

- A number of facilitation challenges are created with the widening of participation in music and music production

  – Predominantly education challenges

- This paper evaluates current audio tools and music production methods to identify the evolving practical and educational challenges

  Evaluation and discussion draws reference to:

  – literature review

  – reflections on first hand music production projects

  – knowledge transfer experience

  – focus group discussions with musicians and music producers

Overcrowding the Scene?

- Mass participation could be regarded as 'watering-down' the main core of musical talent
  - The internet has allowed musicians to promote their music to a wide audience
  - But the audience is potentially saturated by choice

- The systems of internet music distribution rely heavily on the use of data compressed digital audio
  - Little emphasis is put on the quality of audio distributed on the internet
  - Quantity, functionality and download speeds appear to hold the most importance
  - A dual-standard in modern consumer trends?
  - MP3 vs HDTV

- The competitive nature of the music industry has created a demand for louder recordings in recent years [4]
  - mastering engineers are being requested to add excessive limiting
  - often against their recommendation

Assessing the Skills Gap

- Does over-subscription contribute to society's general acceptance of lower grade audio?

- "It takes time to learn what any piece of gear can do, so what chance do we have of using 300 plug-ins to their best advantage, even when they're actually needed?" [5]

- Many MP3 generator packages have a 'normalise' or 'volume levelling' option
  - No technical explanation about what the process entails
  - How can a novice software user make an informed choice on this option?

- In the early recording studios a new engineer would have to prove their knowledge and experience before being let lose behind a mixing desk

Assessing the Skills Gap

- Musicians and performers rely on technology
  - Guitarists rely heavily on electronic tuning assistants rather than learning to tune by ear
  - Vocalists know that a near perfect take can be made perfect with auto-tune software

- Percussion instruments can be the most difficult to tune
  - Tuning drums to a desired sound is something that only expert percussionists can achieve
  - Leaving the remainder with a 'twist and hope' attitude when tuning or replacing drum heads

- In the days of early analogue synthesizers, a performer would need to tune and retune regularly, often during a performance

- The ability to tune and an ear for sound quality were essential skills for any successful musician

Cutting Corners in Music Production

- Software can be used to create processes that could never have been created in analogue
  - Delay times
  - Equalisation curves
  - Do engineers use them just because they can?

- Mix engineer Tom Elmhirst uses a number of very high Q attenuators [6]
  - Attenuators used to reduce some particularly hard frequencies evident in a vocal track
  - In particular, a notch attenuator of -18dB at 465Hz, with a Q ratio of 100, is used.
  - However, the fundamental pitch of musical note A#4 is at 466 Hz.
  - The relative power of this note will certainly be affected by the EQ filter.
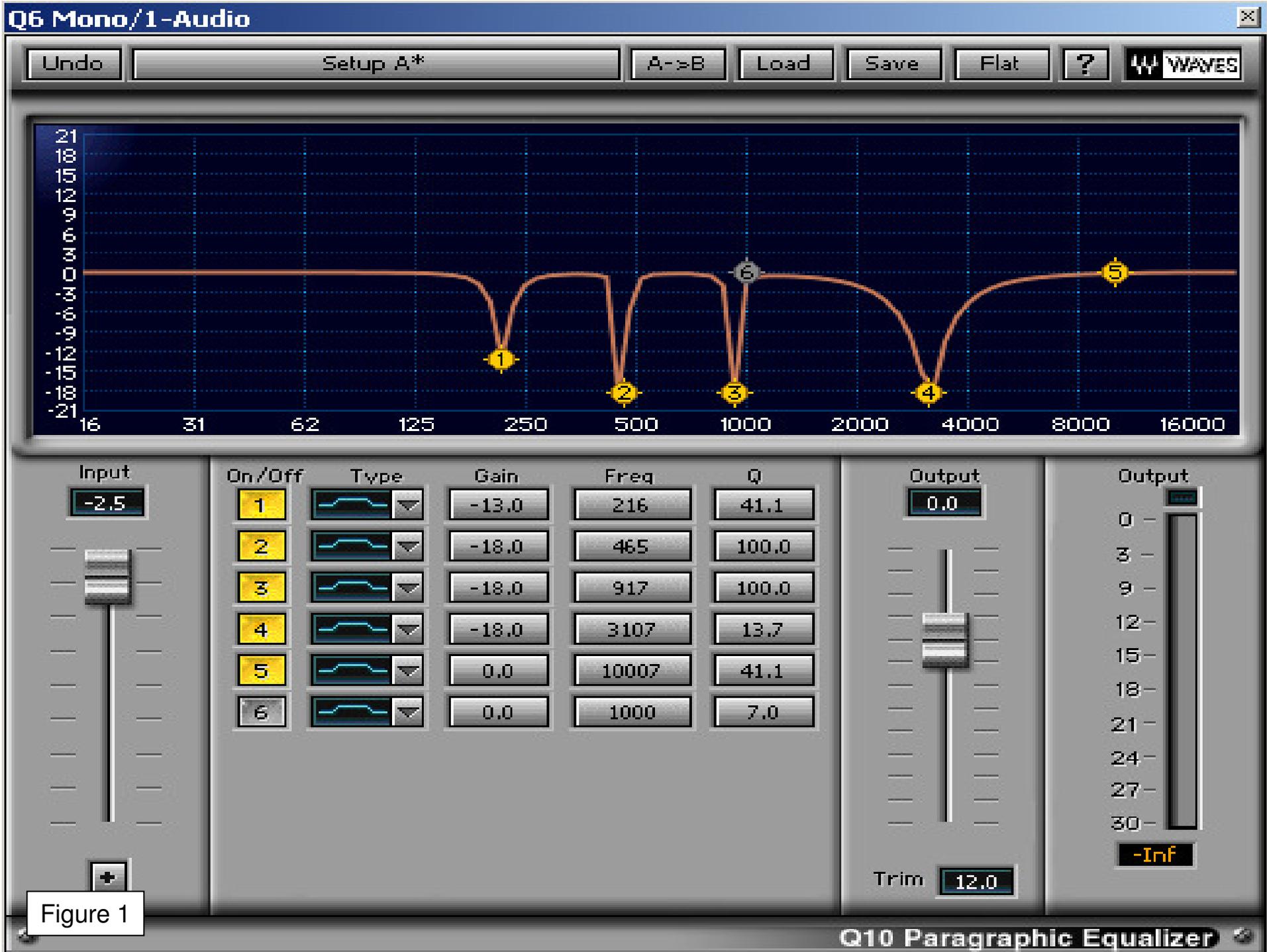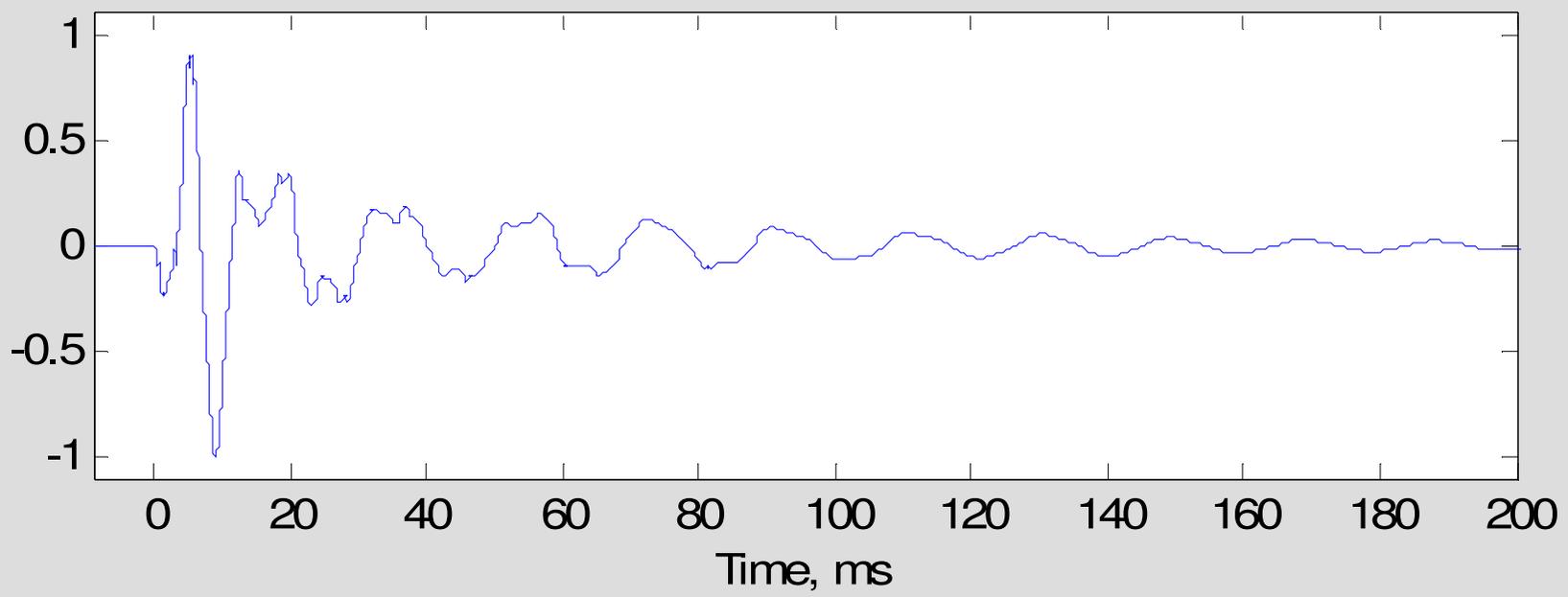
Figure 1

Cutting Corners in Music Production

- Many popular texts suggest boosting a kick drum sound in the 3-6kHz region as a method of enhancing the attack of the signal or adding a 'snap' to the sound [7]

- However, the audio profiles shown in Figure 2, suggest that there is little to be gained in boosting in this region, as there is very little frequency content to enhance
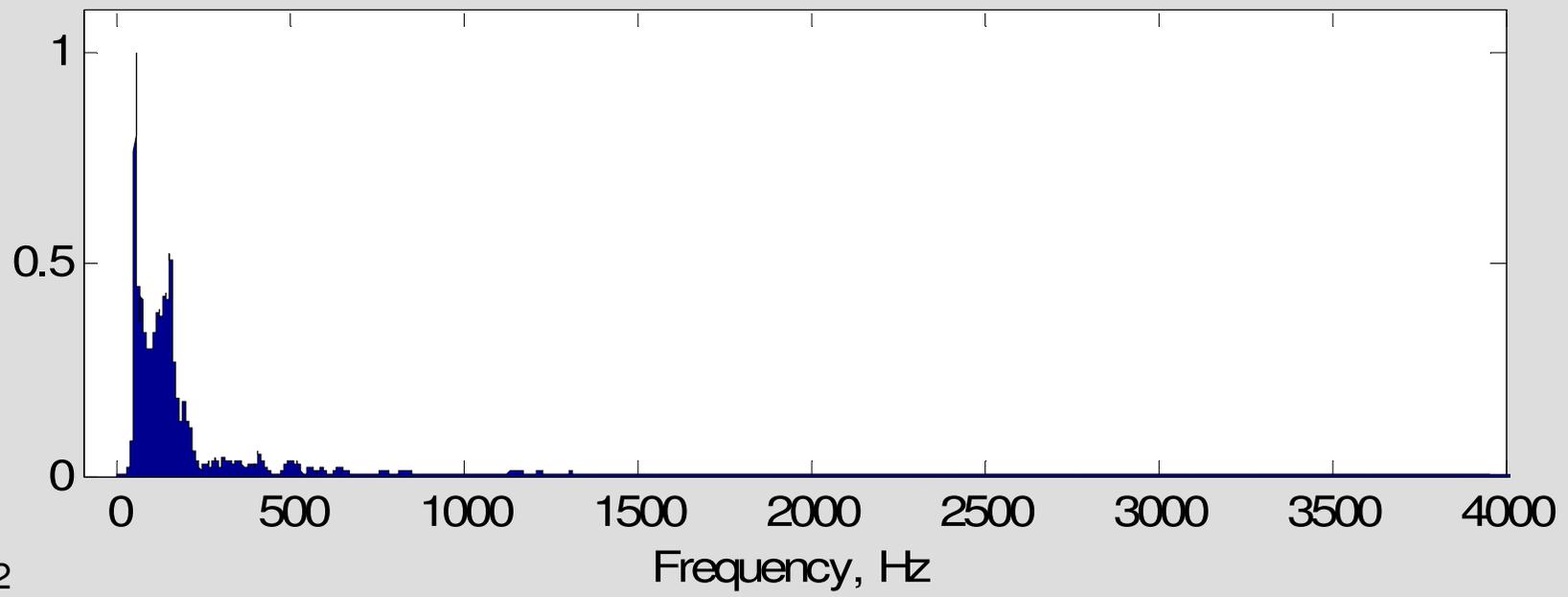
Figure 2

Education Challenges

- Knowledge transfer of scientific theory to a musician or an amateur producer a considerable challenge

- Educating the wide participating base is a challenge
  - learning styles
  - background knowledge

- Many popular educational articles attempt to over simplify the subject of audio technology to engage readers
  - focus predominantly on ideal theory
  - relating to simple sinusoids
  - false sense of security
  - learner misconceptions

Education Challenges

- Student learning preferences
  - Prefer to be sat behind the mixing desk
  - Not learning how it works!

- Graduate opportunities for music technology students
  - Electronics design
  - Signal processing / software design
  - Acoustics analysis and design
  - Audio forensics
  - Not recording studios!

Reflection and Conclusions

- Wider participation is good!

  – Feeds technology advance, brings employment opportunities and generates a number of social advantages

  – Wider participation should certainly be encouraged and embraced.

- We should exercise a focused attitude with respect to audio quality

  – Software designers

  – Equipment manufacturers

  – Educators

Reflection and Conclusions

- Audio technology systems should be developed with an informative and interactive focus on understanding and knowledge
  - Education should be the responsibility of all involved in the music and audio industries

- Consistent education methods are required to ensure clarity and uniformity of knowledge transfer
  - To date, little research has been conducted on practical teaching methods for audio and music technology
  - As a result institutions and educational publications regularly employ different and contradictory approaches to covering advanced engineering topics

References

[1] Jensen, E. Arts With the Brain in Mind, Association for Supervision & Curriculum Deve (2001).

[2] Dickinson, D. Music and the Mind, New Horizons (1993).

[3] Music Industry Census, Music Trades (April 2007).

[4] Tischmeyer, F. Audio-Mastering with PC-Workstations, Wizoo Publishing (2006).

[5] White, P. What The '60s Did For Us, Sound on Sound (October 2007).

[6] Tingen, P. (2007). Secrets of Mix Engineers: Tom Elmhirst. Sound on Sound (August 2007).

[7] Robinson, A. (Editor). Creative EQ. Computer Music Special, Volume 19: The Essential Guide to Mixing, p30-35 (2006).