An Assessment of Slacker Astronomy Outreach Results

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Slacker Astronomy is a weekly podcast covering recent astronomical news in a humorous, irreverent manner while respecting the intelligence of its audience. This is a new approach to astronomical outreach both technically and stylistically. Using the Field-tested Learning Assessment Guide (FLAG) and the Quality Function Deployment (QFD) needs analysis survey system, we have have conducted an in-depth project to determine whether this new style is effective and what audience needs are outstanding.

Content Assessment

Two short contexual surveys were placed online from Dec. 27- Jan. 4, each covering one recent specific show. They consisted of 3 multiple choice questions about concepts included in the show and one general feedback question.

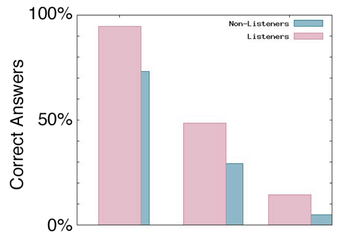


Figure 1. *Correct* answers to three questions asked about Show #35. **Red represents show listeners** and **blue represents non-listeners** (control). 111 listeners and 41 non-listeners responded to the survey.

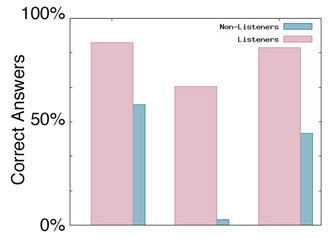


Figure 2. *Correct* answers to three questions asked about Show #37. **Red represents show listeners** and **blue represents non-listeners** (control). 71 listeners and 12 non-listeners responded to the survey.

Outreach Milestones

12,000 unique weekly listeners (Jan 06)
15,000 unique monthly listeners (Jan 06)
Featured on MSNBC Web Site (April 05)
Aired Nationally On NPR (May 05)
Interviewed on BBC Radio Ch. 5 (Aug 05)
iTunes Overall Ranking #6 (Oct 05)
iTunes Science Ranking #4-5 (sustained)

Needs Analysis Interviews

Interviews with 5 listeners were conducted following the Quality Function Deployment (QFD) methodology (Cohen 1995). Listeners were first divided into five groups using a distillation process from QFD and subjects were chosen from each of these groups. The interviews lasted 30-50 minutes and were digitally recorded. The goal of the interviews is to find out what outstanding needs existed in their desire for astronomical news. Fortunately for astronomy (unfortunately for our project) we found *few* repeated outstanding needs. We did find a repeated need for audio-visual content among educators and also a desire for more content (more frequent shows as opposed to longer) all across the groups. QFD interviews and analysis is time consuming so we were limited in the number of listeners who could participate. QFD is designed for larger numbers so further interviews are planned.

What Is It?

Slacker Astronomy is a weekly audio show about a recent news event in astronomy. Started in February, 2004 it was the first science podcast of original content. The goal is to cover a recent news event in the world of astronomy by using silly humor and a respect for the intelligence of the audience.

You do not need an iPod to listen. Any computer that plays MP3s can listen to a podcast. Shows can be downloaded via **iTunes** or from the web site at **www.slackerastronomy.org.**

Attitudinal Assessment

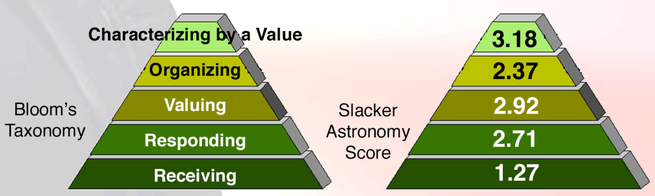
An attitudinal survey was available on the web site from Dec. 28, 2005 - Jan. 4, 2004. Questions were chosen to address each category of Bloom's Taxonomy on Affective Goals (below; Bloom et al. 1994; Kratwohld et al. 1964) in addition to gather basic attitudes about the entertainment aspect of the show.

1 Agree — Disagree 6	Question (Bloom's Affective Taxonomy Level)
3.32 +/- 0.24	I prefer the more serious shows (NA)
2.06 +/- 0.15	I prefer the more humorous shows (NA)
1.75 +/- 0.12	I feel like I understand the concepts in the shows (1)
2.71 +/-0.14	The show notes on the web site are helpful to me (2)
2.04 +/- 0.11	I consider Slacker Astronomy humorous (NA)
1.73 +/ 0.012	I consider Slacker Astronomy educational (NA)
2.92 +/- 0.15	I have spoken to other people about things I have heard on the show. (3)
3.18 +/- 0.17	I invest more time in astronomy activities than I did before listening to Slacker Astronomy (5)
2.85 +/- 0.16	I have sought further information about a topic I heard on Slacker Astronomy (4)
4.76 +/- 0.18	When a show is over, I am often confused about what I just heard (NA)
2.60 +/- 0.15	I like the choice of topics in the shows (NA)
5.39 +/- 0.19	I doubt the validity of information I hear on the show (NA)

1 Always — Never 6	Question (Bloom's Affective Taxonomy Level)
4.58 +/-0.19	I stop listening to a Slacker Astronomy show before it is over (-1)
4.36 +/- 0.19	I skip through portions of a Slacker Astronomy show before it is over (-1)
2.95 +/- 0.17	I listen to a show more than once (1)
1.88 +/- 0.16	A fact or concept I heard on the show surprised me (4)

Tables 1a (top) & 1b. (bottom) Results of the Attitudinal Survey of 364 listeners .

By categorizing our survey questions into Bloom's Taxonomy of Affective Goals we come up with the following index for the effectiveness of our show with 1 being most effecting and 6 being least effective.



Locations of 383 of our listeners

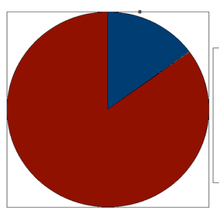


Figure 3. 15% of respondents say the show requires their undivided attention while 85% can listen while doing other activities

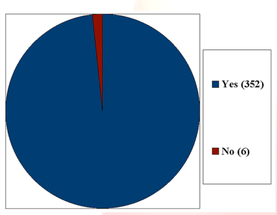


Figure 4. 98% of respondents are interested in other science shows that use the same format and style (we are considering *Slacker Mathematics*, *Slacker Physics* and others for future development)

Conclusions After One Year

Astronomy is inherently wondrous, what we're trying to do is unearth that wonder from beneath layers of stereotypes and preconceptions. We have successfully entertained 12,000 listeners with astronomy related schtick: heavy on the cheese, heavy on the science. Almost all of the listeners come away with new ideas and knowledge of astronomy and most share their knowledge with others. So far we've done the easy part. Next we need better penetration of the 2 deepest levels of Bloom's Taxonomy: *Organization* (preconceptions) and *Characterization by a Value* (fitting science into life).

We need to set goals! When we started the podcast, we were doing it just for personal fun. Now that we've had some success, we need to more carefully consider our education and public outreach goals. We plan to characterize it with a written mission statement in time for the start of our 2nd year of programming in February. Next year at this time we will evaluate the level at which we've reached those goals.

Full details and results will be included in a paper submitted to *Astronomy Education Review*.

iTunes Ranking (Jan. 5, 2006)

References & Acknowledgments

Bloom, B. S., et al. (1994). Excerpts from the "Taxonomy of educational objectives, the classification of educational goals, handbook I: Cognitive domain." In L. W. Anderson & L. A. Sosniak (Eds.), *Bloom's Taxonomy: A Forty-Year Retrospective.* Chicago: University of Chicago Press.
Cohen, L. 1995, *Quality Function Deployment: How to Make QFD Work for You.* Boston: Addison Wesley Longman.
Kratwohl D R, Bloom B S and Masia B B (1964) *Taxonomy of Educational Objectives, the classification of educational goals–Handbook II: Affective Domain* New York: McKay.

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