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The AstroLrner E-Community: A 10 Year Retrospective

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Abstract

The article briefly describes and documents the development and evolution of the AstroLrner (pronounced a-stroh-LEARN-er) online Yahoo! community, created by Tim Slater on August 29, 1999, on its 10 year anniversary. The goal for AstroLrner was to leverage the then emerging social networking technology to build and nurture the nascent community of scholars engaged in improving the quantity and quality of astronomy teaching and learning through education research. Today, known as AstroLrner@CAE, this vibrant e-community has nearly 800 subscribers and averages nearly 300 posts per year.

In today's online social networking world of Web 2.0, there exist countless pathways and unlimited opportunities for people to connect, share ideas, and collaborate. It is rare indeed to find individuals without e-mails, cell phone messaging capabilities, and among collegians, there are probably few individuals without a Facebook or a Twitter account. For those individuals self-identifying themselves as members of the scholarship of teaching and learning astronomy community, there exists a large and vibrant Internet-based online network, or e-community, known as AstroLrner (pronounced a-stroh-LEARN-er) (AstroLrner 1999). Based in the Yahoo! Groups system, today's AstroLrner e-community, known as AstroLrner@CAE, has nearly 800 subscribers. As of its 10 year anniversary, there have been 2771 messages posted over the past 10 years, varying considerably in length and nature, but almost always constructed as a threaded sequence of a sincere plea for assistance and a series of considerate responses. Unquestionably, AstroLrner@CAE is the current epicenter of social networking for the teaching and learning of astronomy.

Upon its 10 year anniversary, it seems appropriate to pause and consider some of the history of the AstroLrner e-community. More than a decade ago, there existed a small group of disconnected and nascent scholars blindly staggering around a new discipline of astronomy education research, AER. The group was very loosely held together by small topical gatherings at conferences such as the American Astronomical Society, who supported a Working Group on Astronomy Education coordinated by Steve Shawl, among others; the Astronomical Society of the Pacific, nourished at that time by Andrew Fraknoi and Mike Bennett; the International Astronomical Union Education Commissions, coordinated at one time by Jay Pasachoff; the Association of Astronomy Educators, corralled by Russ Harding, Vivian Hoette, and Edna Devore; the International Planetarium Society, presided over by Jim Manning and Martin Ratcliffe, among others; and the American Association of Physics Teachers Committee on Astronomy Education, chaired in those days by John Safko, Tim Slater, and Janelle Bailey. This is most certainly not an exhaustive list, but demonstrates how widely scattered this young community was.

The AstroLrner e-community was born out of an effort to build and connect a community of AERer's. As we had no journal nor our own special topical meeting at that time, it became clear that this widely dispersed group of un-networked individuals needed a way to communicate and collaborate. At each of the aforementioned face-to-face meetings at professional conferences, we kept a crude, handwritten list of attendees names and e-mail addresses, but did not really know what to do with it. By coincidence, many of us also self-identified ourselves with the physics education research community, PER. In a moment of brilliant forward thinking,

which seems obvious in hindsight, Dewey Dykstra started an e-mail listserv distribution list to keep the PER community connected, called PhysLrnr, which grew rapidly (PhysLrnr 1998). PhysLrnr was created sometime around 1998 and, seeing the immediate success of the PhysLrnr e-community and seizing the then brand new infrastructure offered without cost by Yahoo! Groups, I off handedly created the AstroLrner Yahoo! Group on August 29, 1999, that had but a single subscriber—me. I sent a few tepidly worded e-mails asking people to join and by the end of 1999, we had precisely 20 members. The very first member to join, besides myself, was Steve Shawl, who was then quickly followed by folks now known widely to the AER community including Jeff Adams, Meredith Wils-Davey, Elizabeth Roettger, Janet Landato, Edna Devore, Mike Zeilik, Mary Kay Hemenway, Neil Comins, and then Aileen O'Donoghue. Most of the first year's discussion surrounded debating relative merits of the K–12 astronomy concepts listed in the National Science Education Standards and trying to decide if these concepts deserved further attention in educational research efforts (Adams and Slater 2000).

In those early years, there was no central journal for consistently finding published research on astronomy teaching and learning. To take advantage of the then new technology of Internet web browsing technology, Gina Brissenden and Dave Bruning started a campaign of collecting and summarizing AER papers across a dozen journals on a website today known as SABER (Bruning, Bailey, and Brissenden 2006). In fact, one of the very first scholarly uses of the original AstroLrner was to solicit volunteers to work on building and populating the initial SABER database. Since that time, AstroLrner has grown significantly, as shown in Table 1.

Table 1. Total number of AstroLrner members on December 31 of each year (the first member joined in August 29, 1999 and the members in 2009 are as of August 29)

1999	20
2000	42
2001	65
2002	90
2003	122
2004	146
2005	287
2006	461
2007	545
2008	721
2009	767

Even a superficial glance at the growth of the AstroLrner membership reveals a rapid increase in membership levels starting around 2005. This was about the same time that the Center for Astronomy Project (CAE), housed at the University of Arizona's Steward Observatory, was generously funded by the NASA Navigator Public Engagement Program (now called the NASA Exoplanet Exploration Public Engagement Program) and the NASA Spitzer Education and Public Outreach Program. Members of the CAE took on the active "care and feeding" of AstroLrner as a strategy to extend the reach of its workshops beyond a single workshop experience to become an ongoing method of communication among a rapidly growing network of astronomy educators. The name was changed from AstroLrner to AstroLrner@CAE and all workshop participants were encouraged to join Astrolrner@CAE where they could continue to share and learn about ongoing efforts at effectively implementing contemporary teaching strategies (Brissenden et al. 2007; Dokter et al. 2007). The effort now is supported in part by a NSF award.

A cursory survey of postings, numbering more than 2500, suggests that the implicit purpose of today's Astrolrner@CAE is currently focused on improving teaching and learning in the introductory astronomy survey course for non-science-majoring undergraduates by using and growing the astronomy education research scholarly knowledge base. However, this is done in a far more anecdotal and informal way than the refereed papers in *Astronomy Education Review*. Many scholars doing research on college-level astronomy teaching use AstroLrner@CAE to solicit and locate faculty who are willing to pilot-test new curriculum materials or assessment instruments in their classes. For example, a recent effort lead by Stephanie Slater and colleagues resulted in an unheard of number of more than 800 detailed responses to a survey about the use of planetary data in classrooms (Slater et al. 2009). In recent years, Astrolrner@CAE has been moderated by Gina

Brissenden who innovatively uses a range of rotating guest moderators to keep the discussion invigorated and relatively on topic. As with many online communities, a "human being approval barrier" to posting is in place to save the list from being overrun by the never ending submission of electronic advertisements, among other unrelated postings.

The names, goals and purposes of AstroLrner have certainly varied over the years, reflecting the interest of its membership. The initial intent of AstroLrner was clearly aimed at nurturing efforts at collaborative scholarly research, much more so than to offer suggestions for teaching and learning. The first stated goal posted on AstroLrner was that the listserv was to serve as an e-community of astronomy education research scholars to discuss the definition of conceptual learning targets and trajectories, the effective design and methods of research, and the most useful procedures for data collection and analysis. However, after a couple of years, I was compelled to make a separate group focusing on teaching strategies specifically as a substantial number of postings were directly related to classroom teaching. This separate group is now known as AstroEd_News and is enthusiastically moderated by Jacob Noel-Storr and Emilie Drobnes (AstroEd_News 2001). The AstroEd_News e-community was initially self-identified as an outreach effort of the Astronomical Society of the Pacific and is now associated most closely with the Association of Astronomy Educators, AAE, and is currently focusing mostly, but not exclusively, on K–12 and informal astronomy education (Slater 2005).

There are certainly other Internet-based resources and sites where teachers, outreach enthusiasts, and research scholars focusing on teaching and learning in astronomy can interact and share their ideas and curriculum materials—far too many to list here. Indeed, even the refereed journal *Astronomy Education Review*, which is now the premier vehicle for scholarly publication of refereed journal articles in astronomy education research on teaching and learning, is freely available as an online-only journal, without a printed paper version (The Astronomy Education Review 2001). However, even in light of other available venues, I would argue that Astrolrner@CAE has unquestionably had the most far-reaching impact on the teaching and learning in astronomy in the past decade, which is worthy of celebration. It is undoubtedly impossible to foresee what the future of social networking and online e-communities holds for new pathways and infrastructures for astronomy educators to continue interact. But, what I am most certain of is that countless learners have benefited from better and more effective astronomy education and outreach because of Astrolrner@CAE, which has laid a foundation for an even better future.

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