

1 **Bringing Game Based Learning to Scale: a Response**

2
3 Merrilea Mayo's article performs an important function by providing a realistic
4 snapshot of the current state of the learning games field. She gets many things
5 right, including:

6 People are interested in content related to learning– demand is visible in
7 sales of DS games.

8 Games don't have to be AAA to be successful.

9 Existing developers labor under the problematic models for the successful
10 distribution of learning games.

11 Most products generated by researchers require more hardening, more
12 realistic business plans.

13 Learning games publishers business models should presume longer shelf
14 life, more gradual repayment of investment.

15 Models for distribution to K-12 schools differ greatly from those for
16 individuals or higher education.

17 Where the article suffers is in not going far enough into particulars. She paints a
18 picture of industry-wide averages. This could make sense for a mature industry,
19 but with the relatively small number of current learning games and/or
20 developers, this may not yield valid results. The industry is still sufficiently new
21 that the conversation might benefit from looking at specific examples, and
22 evaluating which instances are more promising, which are dead ends.

23 In an otherwise strong opening section, while she accurately upends several
24 assumptions about the state of the field, she points out that there are a wide
25 variety of learning games already on the market, but in fact her list includes a
26 few games that are outstanding, and many more that are not. The failure of
27 these games is not along the axes she alludes to in this section (i.e. production
28 values) but rather whether they are truly engaging, and whether they represent
29 high-quality pedagogy. It is true that such evaluation of individual products is
30 not in her remit, but as we try to examine a small and growing industry it is
31 challenging to do so without having greater clarity as to what makes a good
32 game, and whether the conditions of manufacturing and distribution don't in
33 fact play a large role in determining that quality.

34 For example: early on she suggests that modern learning games are an
35 improvement over the drill and practice of the 80's, but in fact this glosses over a
36 period in the early-mid 90s, when there was an explosion of interesting,
37 pedagogically adventuresome games. This era came to the end with the rise of
38 distribution through big-box stores, and the concomitant pressure to spend

1 development dollars on licensing characters with market appeal (e.g. Disney,
2 Rugrats) rather than commit to the rigorous R&D that had produced the brief
3 flowering of worthwhile games. My point is not to dwell on that history, but to
4 say that the means of distribution has an effect on the quality of the games, and
5 when we talk of future development or distribution models, we can't do so
6 without regard to the types of games that such models will favor.

7 It is worthwhile here to step back and make an analogy between games and
8 films. At one time the Hollywood studios produced the whole gamut of movies,
9 from big-budget spectacles, to B-movies, to thoughtful small films with niche
10 audiences. Over time, the economics of film distribution have driven the studios
11 toward making mostly big budget films that recycle familiar franchises and
12 storylines. The marketing of these films is expensive. The goal is to make the
13 opening weekend an "event" on thousands of screens nationwide, enabling the
14 studio to break even quickly, regardless of the films' actual quality. The strategy
15 is high-risk, high reward. Each film represents a big investment, and though
16 many will fail, the successes are profitable enough to make up for the failures.

17 As Hollywood has abandoned small thoughtful films, their production has been
18 taken up by independent producers who don't expect to recap their investment
19 so quickly, but rather hope for word-of-mouth to fuel prolonged distribution on
20 a smaller number of screens. Compared to the studios' output, these films are
21 (relatively) low risk, and yield smaller rewards in the aggregate, but they
22 contribute greatly to the variety and quality of films in the marketplace.

23 Nowadays, games are subject to similar economies. The best-publicized AAA
24 games tend to be glossy retreads of familiar franchises. Upon release, such
25 games have several weeks to recoup their investment in retail outlets, or find
26 themselves consigned to the remainders bin, and accordingly they require
27 marketing budgets equal to their development costs.

28 As with films, in response to these market conditions there is now a burgeoning
29 independent games movement with different aesthetics and different economics.
30 One critical difference is that while big-budget games are still sold in shrink-
31 wrap through retail outlets, independent games tend to be distributed on-line, an
32 environment much more conducive to targeted marketing and niche sales. These
33 games are significantly smaller than traditional big-budget games. A game can
34 be produced by a handful of dedicated designers, programmers, and artists in a
35 fraction of the time. If the rewards are low to individual producers, the risks are
36 even lower, and the rewards to the larger games field have been enormous.
37 Independent games are proliferating from a staggering array of sources
38 including industry professionals working in their spare time, dedicated amateurs
39 pursuing their passion, and students experimenting as part of their course of
40 study.

1 I take the trouble to paint this picture because it suggests something about the
2 difference between centralized development by a narrow group of industry
3 leaders, and more widely distributed production from myriad small developers
4 pursuing individual goals. This is a distinction unmade in Mayo's article.
5 Indeed, a number of her proposals seem to presume the more centralized, big-
6 budget development models. To date, government agencies and foundations
7 have tended to place large bets on a small number of universities and R&D firms,
8 who in turn make big games. I have benefitted from some of these funding
9 opportunities, and a handful of such projects have been worthwhile, but overall
10 it has proved to be a high-risk, low reward strategy. While Mayo's suggestions
11 for more rigorous review of business plans by funding agencies, and the creation
12 of expert panels that could set industry standards and rate games for
13 pedagogical values would no-doubt improve upon the current state of affairs,
14 they would tend to do so in the same top-down way that most current game
15 funding decisions are made.

16 All of which brings me to the primary substance of my critique: rather than bet
17 on a small number of experts to get it "right," why not bet on a future rich with
18 creative experimentation. Instead of betting on large individual learning-games,
19 why not bet on creating market conditions that would support many such small
20 independent games. Mayo's discussion skirts rather casually over several
21 commercial and technological developments that make such a model possible:

- 22 1. Though web-based distribution does not solve all problems, it does
23 remove the very retail pressures that have caused game publishers to
24 behave more and more like Hollywood studios.
- 25 2. Web delivery makes possible free-downloadable demos, or incremental
26 purchases (e.g. the user spends relatively little to try part 1, and if pleased
27 pays more to purchase part 2, or the entire product). Such a commercial
28 model favors the independent developer who can't spend huge sums on
29 advertising to create demand for a product.
- 30 3. Web-served Flash games represent a technology that makes it easy to
31 serve games to all variety of schools without encountering the challenges
32 of installing games on older machines, or in locked-down computer labs.
33 Indeed, such games can be accessible to students working on any web-
34 enabled computer in schools, homes, libraries, and after-school activities.
35 This in turn leads to a just-in-time approach to game play.
- 36 4. Flash is an increasingly sophisticated programming language capable of
37 far more involved games than the flat, simple 2-D products Mayo
38 mentions

39 Web-based Flash games may not represent the only possible approach to
40 creating a widespread independent learning game movement, but it is a model

1 that is already proven to work for independent “entertainment” games. The
2 benefits of such a marketplace would be several-fold:

- 3 1. It would be a laboratory for diverse approaches, and a chance for best
4 practices to emerge, rather than be pre-ordained by “experts.”
- 5 2. The products will tend to be smaller. Individual games will be more
6 adaptable for teachers working with different curricula and learning
7 goals.
- 8 3. More supple development models will allow game creators to refine their
9 products in response to feedback.
- 10 4. Individual products will require less up-front commitment for teacher
11 adoption. Teachers can take baby-steps toward using games, rather than
12 commit to radically changing their practice all at once.
- 13 5. In keeping with item 4 above, professional development materials will be
14 less costly to produce, and less daunting to consume.

15 While such a model may seem to be little more than the wishful thinking of a
16 long-time game designer, I can point to two models that hint at the possibilities
17 for the future of learning games.

- 18 I. The iPhone applet store is an environment that has inspired the very
19 flowering of independent development we hope to see with learning
20 games. It doesn’t single-handedly solve all the problems of distribution,
21 as most products without marketing muscle have a hard time gaining
22 traction, but it does show the range of creative ideas waiting to come out
23 of the woodwork when game creators have an easy development
24 platform, and a low-barrier to entering the marketplace. Indeed, while I
25 still think Flash is the preferred development mode for the near future,
26 there’s no saying that the future for learning games won’t involve some
27 convergence of what is possible on computers and on smart phones.
- 28 II. Brainpop is a privately-held company that has created a site rich with
29 well-made, informative and entertaining videos on a wide range of school
30 topics. A typical video might be 10 minutes long, and treat a single
31 subject such as penguins, the Emancipation Proclamation, or isosceles
32 triangles. Everything is well indexed by grade and subject area, and as
33 such it is extremely easy for a teacher to quickly find something to insert
34 in her lesson plan with minimal effort. The quality is uniformly high, and
35 the ease of use has lead to wide-spread adoption by schools or districts
36 who pay annual licensing fees. The videos are equally popular with
37 teachers, students and parents. They don’t presume to “teach” the whole
38 curriculum, but they’re valued in many schools without imposing
39 enormous costs on the school budget, or the technical infrastructure.
40 There is no reason that similarly accessible learning games might not

1 serve a comparable niche, encouraging students to solve problems and
2 interact with new material, not just absorb it as viewers.

3 What the above suggests is that parties interested in this conversation,
4 government agencies, foundations, universities and not-for-profits, might find it
5 useful to put more of their efforts into helping create the market conditions that
6 would enable such developments in the learning games space. These efforts
7 could include:

- 8 1. Funding platforms that would function like the iPhone Applet store for
9 learning games. Such platforms would not only house games, but teacher
10 materials as well. They would also host social networks of teachers
11 sharing their practices with each other.
- 12 2. Develop micro-funding schemes that would provide incentives for small-
13 scale independent developers to undertake learning games, while not
14 committing large amounts to any one game or initiative.
- 15 3. Help independent developers connect with learning specialists to facilitate
16 the creation of good teacher materials keyed to games.
- 17 4. Providing funds to help market promising games that have been
18 developed independently.
- 19 5. Continue to support research that demonstrates the effectiveness of game
20 based learning, and helps define emerging best practices.

21 This is an approach that favors experimentation and innovation. As such, it is
22 much more in alignment with the diverse, bottom-up way that change has come
23 to interactive media since the rise of the web.