Gnowbe – the Latest Guest to the Platform Party is Distinctly Mobile.

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Moses preferred a tablet or two to support his didactic classroom management style, Martin Luther was known to have posted theses as much as 95 times in one day on his wall, and school teachers moved from notes on blackboard to notes on Blackboard© (Figures 1 a-c). It seems the preferred Learning Management System (LMS) Platform changes even when the names don't and the space has never really been won (Spectrum, 2018). In the arguably post-LMS Schools of today (Mott, 2010) where digital is ubiquitous, technological affordances abound (Glowatz & O'Brien, 2018) and lines are increasingly blurred between levels and sectors of education and training, the choices for education decision-makers from where they may minimally host materials to an environment where whole courses play out and everything in between are varied and alluring. However, educators find ourselves like Pi, sometimes agnostic and uncertain as to which to employ yet, at other times polytheist, taking sup at the altars of one platform supplier after another.

Figures 1-3: Early Platforms (ltr): Rembrandt's Moses Breaking the Tablets of the Law (1659); Luther (Dir.: Till, 2003), protagonist nailing 95 theses to his platform of choice; the blackboard (Queen's University Belfast).

Case in point 1. In days gone by, I was involved in the approval of a capital expenditure on an Enterprise LMS in the six-figure range only to then revert to open source not six months later. Such a strategy as this was not enamoured of the Board of Governors, but it was nonetheless necessary for that institution to remain nimble and for the digital experience to be commensurate (i.e. to at least be considered) with that which learners were having in their increasingly pervasive virtual social life. In this vein, Moodle once morphed into

Moodlebook (the conjunction, to distinguish it from the current Moodle Book) and Blackboard into Blackboard Synch, both augmentations of their regular learner interface towards the kinds of aesthetic and User Experience (UX) the Social Media site Facebook had pioneered, thereby "effectively transporting the LMS to Facebook" (Harris, 2012, p. 808). They may have been none-too-successful experiment initially, but were nevertheless brave examples of two very established players self-disrupting and gave the industry important preludes to today.

Figure 4: Moodle LMS goes Social. A Malaysian Instructor's Moodlebook.

For today exists everything from behemoths like Microsoft with its Teams and other software to small start-ups offering end-to-end services that represent a kind of education translation service for the 21st Century. Take, for example, Singapore's UpnextEdu, which offers services to help educators "adapt to the needs of our digital natives by adopting collaborative and active learning pedagogies, delivered through leveraging on technology affordances which helps the teacher in facilitating and automating the learning process" (upNEXTedu, p. 2). These diverse providers co-exist and battle to win the love of lecturers and learning leaders and drag them like a cursor into the 4th Industrial Revolution.

Yet with change comes pain and identity crises now loom large; educators are being asked to be curators (Siemens,

2008), architects (Woods & Ebersole, 2003) and even good ol' Deans like me are not immune as we transform into what must resemble an Orwellian creation: the Chief Learning Officer (Woodill & Fell, 2006). With so much innovation and change. Ed tech is apparently winning, but the choices get more complex for the end user and so many choose none (Spectrum, 2018; Glowatz & O'Brien, 2018).

That which is unavoidable is the move to mobile and mobile-responsive platforms (Sarrab, Al-Shihi, Al-Manthari & Bourdoucen, 2018). Case in Point 2 and another of my failings (this is quickly becoming an exercise in self-flagellation). As far back as 2014 when working on a blended learning design, was to assume part-time working adult students in Singapore would use a PC for most of their online learning. Actually, our post-analysis of their usage via the Moodle LMS Analytics for version 1 (n= 2,850 students) found only 10% of the students regularly used a PC, whereas 65% used a mobile phone and 25% a Tablet/PDA device (Harris, 2016).

Within this context, enter Gnowbe.

The Pitch

In their own words, "Gnowbe is a pioneering mobile micro-learning and engagement solution to help the modern workforce learn faster and better" (Gnowbe, 2018, p. 1). Big claims indeed. Very much a mobile-first platform targeting employers' Learning and Development departments, Gnowbe's business model relies on partners developing content for the platform.

Gnowbe claims to respond in its design to the literature on "latest science of adult learning, gamification and behavior design" (Gnowbe, 2018, p. 1). Leaving aside the latter two concepts as debatably peripheral to this publication, Gnowbe's adult learning science premise and resulting product channel concepts like peer and social learning and does so in a time the aforementioned Moodlebook designers must envy. For this is a time where the affordances of a less hard-coded, more format-responsive digital ecosystem enable more variety of media within the one platform and blissfully sans Scorm packages (a joke for the techies). Variety can be good for learning (Kagan & Kagan, 1994) but so is time (Soderstrom, Kerr & Bjork, 2016). However, Gnowbe is hedging its bets on a relatively new – the literature is sparse before the 1990's – but increasingly trendy concept, Microlearning or, specifically, Mobile (M-) Microlearning.

When I first heard of Microlearning, I cringed and immediately judged it as a further extension of the kind of paradox of knowledge The Editorial in this JALT Volume speaks of; as though, in an inversion of Moore's Law, humans were increasingly able to pack in less learning and that Microlearning was just the natural endgame for the distracted. Gnowbe even claims its use requires a 'small cognitive load' as though this is a positive (see Figure 6c). However, the closer truth is that its roots are as a way of segmenting of learning into its parts, like mini scaffolds (Gassler, Hug & Glahn, 2004; Millwood, 2000). It does have its supporters in the elite institutions as well. In this very volume, Shelley and Goodwin (2018) argue that:

The best microlearning experiences will… bring together mobile, flexible approaches which engage learners with each other to co-create new options rather than learn existing content. This provides a solid foundation for future ongoing learning aligned with changes in contexts, challenges and opportunities (p. 34).

As the following road test shows, Gnowbe is to this reviewer at least mobile, flexible (no active release) and engaging in its design, but whether the co-creation of knowledge is as utilised as it could be was not reviewed in full.

The road test

Limitations: The following reflections are based on the experience of an academic in a higher education setting and so the lens through which I view Gnowbe is a little aside from its intended user, those in the corporate learning and development paradigm. To mitigate this, I have chosen a Polytechnic Diploma course more in line with the kinds of curriculum I deal with daily. A second limitation is that this is admittedly a cursory experience with Gnowbe as a student/ trainee/learner of the log-in, onboarding on the app and the Introduction to Digital Marketing course on which the folks at Gnowbe very magnanimously let me enrol. I also have fat fingers not evolved for smartphones, but let's leave those to one side.

Overview of the road test: I was enrolled for 36 minutes in total which covered two sessions (topics) - Introduction to Microlearning (read: Gnowbe) and Introduction to Digital Marketing, the latter of which is the first of 14 sessions on the eponymous course – and completed 25 actions (activities). Given the notion of bite-sized, five-minutes-a-day usage at the heart of Gnowbe's disruptive approach, 36 minutes (with over 20 minutes on the on-boarding) was deemed representative of a normal first-time user experience.

A. Orientation – On-Boarding: Platform, Pedagogy Pitch and Programme (Course)
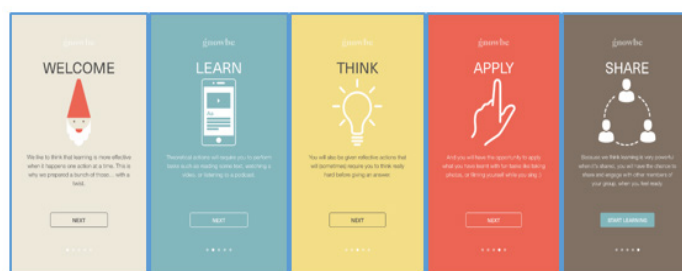
**Figures 5 a-e: Gnowbe platform step-by-step on-boarding.**

The on-boarding (induction) to the Gnowbe App was neatly scaffolded and the experience mirrored the content regarding the Gnowbe Pedagogical model of "Learn, Think, Apply, Share" in that while learning about the model I was concurrently applying it so that, like all well aligned instructional (lesson) design I, the learner, was starting as the instructor intended me to go on. Layered over that fluid navigational experience was the constant content about the "essential" role of the learner to act and participate in achieving learning outcomes (see Figures 6a and 6b) again

while I acted and participated; however, I'm not sure if I achieved the Learning Outcomes though which perhaps might have been reintroduced later in the course. Overall, the on-boarding to the platform was easy and elicited from me the very behaviours I would need to complete the subsequent sessions.
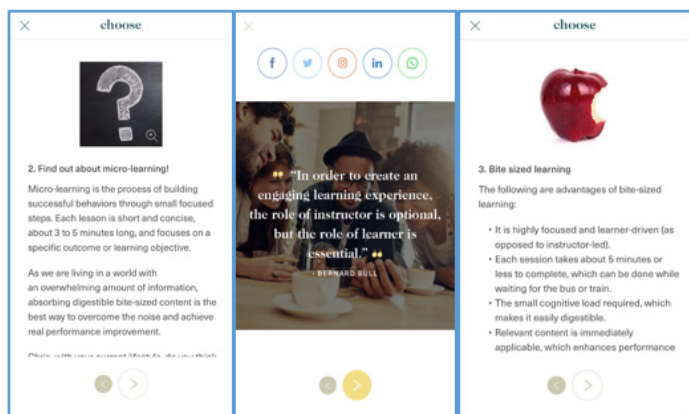
Figures 6 a-c: Setting the expectations of the learner as essential to 'drive' his/her learning.

Similarly, the introduction to the programme (course) proper was paginated for the medium of mobile, with expectations and outcomes well expressed and the content succinct. Yet, it was at this same junction that I begin to see the limits of learner-driven as distinct from learner-centred design in that the curriculum was clearly organised by traditional content ("Sessions") and temporal ("Hours") orders save for the "actions", which at least spoke to some thought having been given to what the student did (Biggs, 1999). Notwithstanding the lack of active release which made navigating fairly free, there may be a level of AI missing which would truly allow the experience to be learner-centred in the sense of the machine learning here to pick up on the specific learning mastery of the learner and respond accordingly.
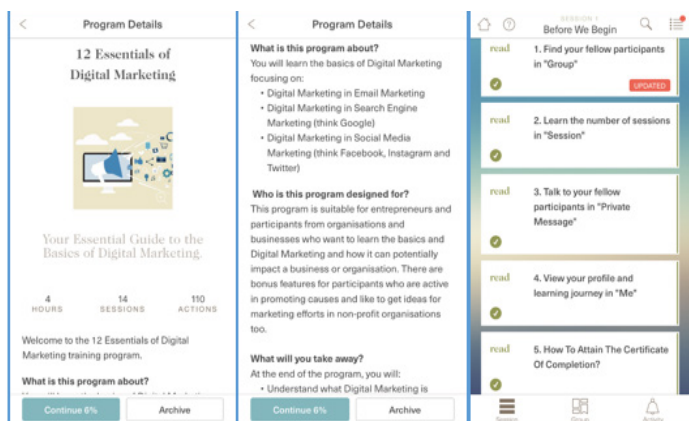

Figures 7 a-c: The Programme (Course) Proper On-Boarding.

The emphasis on the learner familiarising him/herself with the social aspects of the app (see Figure 7c) were clear though and this is where the app can really distinguish itself from other media. Being able to share, read the opinions of other learners on a discrete piece of shared content and then share again on a platform that is well designed for the display of such content is a big step towards social and peer learning advances. The role of the teacher in this could be as guide, facilitator and even quality assurer. Here the work of Vygotsky and others on the importance of 'knowledgeable others' within the learner group is important in assuring the learning.

B. The Learning Journey through Gnowbe – Introduction to Digital Marketing (content by Temasek Polytechnic, Singapore)

The course proper started with me, the learner, having to post an answer to the fundamental 'what is' question (Figures 8a and b). This was the virtual equivalent of the teacher check of assumed knowledge or pulse check on what I already knew. Here I found the limits of screen size meant I had to minimise the sub-text to the question and just leave the questions itself (Figure 8b) but I commend the approach allowing the learner to "compare how much you know now…with how much you will learn by the end" (Figure 8a, p. 1).
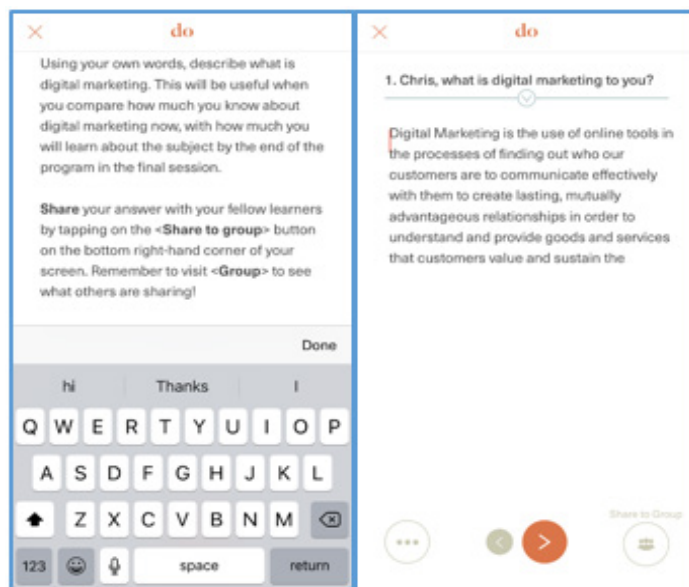
Figures 8 a,b: Course Begins. Checking Assumed knowledge. The first 'do' activity and my response (pre-test).

The app required a response to move on so the promised emphasis on learner activity was reinforced. Again though, I wondered whether my response was on the right track (or worse, was I even close?) and a machine learning improvement might be able to perform a quick content analysis and highlight those key terms related to the instructor's definition and those missing, much like a face-to-face teacher would do.
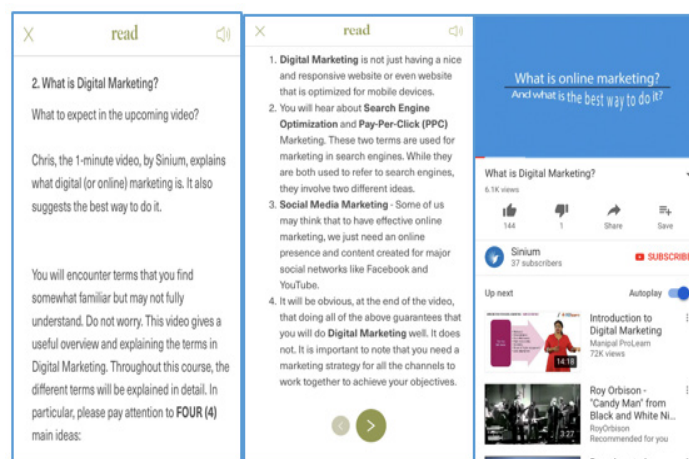

Figures 9 a-c: Course Begins. Introductory content, video pre-reading and video .

The next "action" I had to perform was to watch a video. The transition from the introductory text (itself a good strategy for focusing the learner and reminding them the video is a text) to the video is seamless. Leaving aside the video content (I assumed Sinium has approved the use of its IP),

the immediate follow-up Multiple Choice Question made for a very smooth prepare-experience-reflect journey as the learner. The extra content on correct and incorrect answers also enhanced my understanding (bottom of Figure 10b).

Figures 10 a,b: Quiz to end (post-test) with additional reinforcement around the correct answer.
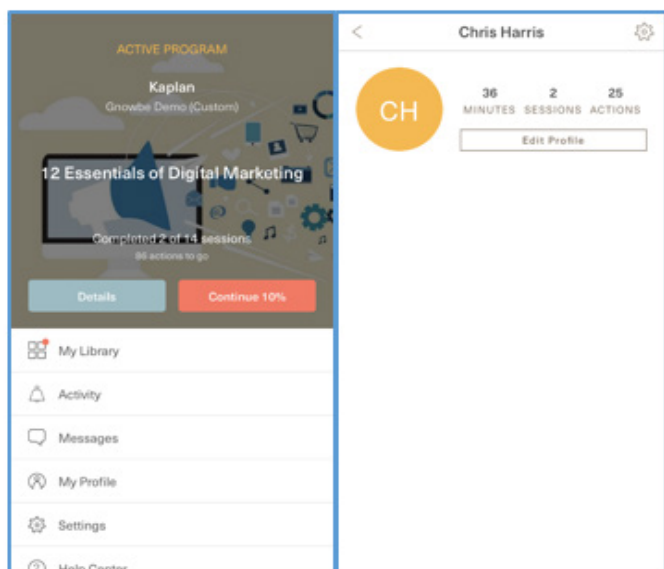
Figures 11 a,b: Summary of Activity for DM Course and overall on the app.

On completion of the session, I was readily able to see the numbers in terms of minutes spent on the app, sessions and actions which would be useful for the kinds of reporting needed and for building the intelligence of the system. Perhaps with time and a bigger user experience data set, the app could show me where my learning actions were statistically 'faster' or 'slower' and ask for feedback on why. Classroom teachers would call these interventions and use tools like 'Muddiest Point' (Mosteller, 1989) or other questionnaires to elicit the students' feedback on their own learning and they are useful markers for teachers to discover misunderstandings and troubling concepts with which to then customise learning plans. Gnowbe might wish to translate these sorts of technique into the app.

C. Other Features of the Gnowbe App:

In a conversation with co-founder of another learning app Quitch, Dr. Grainnie Oates, I was surprised to find out that in her testing of students in the pilot University in Australia, the students had actually requested to receive notifications when deadlines loomed for work needing to be done (Personal communication, January 17, 2017). Oates had initially recommended not to do this in case it encroached on the students' social life, a concern former subjects of mine likewise expressed in research I conducted on their experience with Facebook in learning (Harris, 2012). This may reflect a change in acceptance of formal learning within the social milieu of students. Whatever the case, Gnowbe's other features include the right to opt in for notifications, which should help learner traction to the app (12a) if the Quitch experience is the guide.

The other feature I found quirky and quite intuitive was the immediate offer of assistance when I screenshot the images presented herein (Figure 12c). This was clearly the result of a UX insight and, while I didn't pursue the offers, I could see how it might be useful and timely.

Lastly, the app contained the usual star rating on satisfaction (Figure 12b). Timely data collection is a worthy endeavour in all teaching and is arguably made easier with technology, but measurement of 'enjoyment' without other pertinent questions around the rigour of the content, the clarity of meaning or another measure of efficacy for learning that might be more worthwhile for the instructor, was distracting.
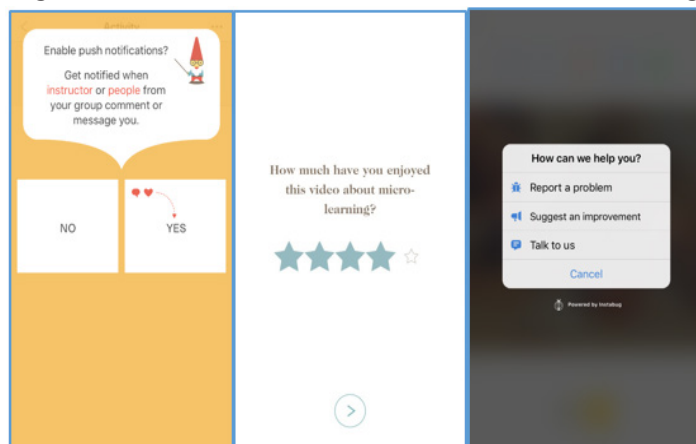
Figures 12 a-c: Push, Pull and Predictive? Option for push notifications, a quick survey and help predicted on screenshot.

Overall, notwithstanding that this reviewer is looking through the lens of Higher Education into an app designed chiefly for corporate Learning and Development, the experience of navigating the app, its ability to seamlessly link multiple media formats and the variety that this creates for the learner experience were noteworthy. Furthermore, given Gnowbe is a platform provider and not chiefly a content creator (Gnowbe works with content providers), there is much to be said for its responsive capability and the ease with which a non-technical instructor can input content. The fact that it is also 'built-for-mobile' meant problems of lengthy pagination, missing powerpoint content and other side effects of LMS systems viewed through mobile browsers were non-existent.

In terms of the efficacy of Gnowbe for learning, no real account can be given as to the effect of my experience to see how microlearning impacts on my long-term retrieval of the lessons at this stage so none will be ventured. Suffice it to say, these kinds of questions should be posed by Gnowbe or any organisation in this space, and the commitment to the research and scientific work needed to answer them needs to be done. Related to this, the only other recommendation I would reiterate is for Gnowbe to delve further into Artificial Intelligence and the advanced affordances it would provide in personalising the learner journey and providing an even richer data set for stakeholders including the learner, corporation, institution or instructor.

References

Biggs, J. (1999). *Teaching for Quality Learning at University*. Buckingham, UK: SRHE and Open University Press.

Box Office Revolution. (2017). *Luther [2003] (Movie Review)*. Retrieved from https://boxofficerevolution.wordpress.com/2017/02/28/luther-2003-movie-review/

Edtech's Race Beyond Chalk and Blackboards. (2018). *Spectrum | Technology and Innovation Business Club*. Retrieved from https://www.spectrum.global/edtechs-race-beyond-chalk-and-blackboards/ 11 October 2018

Glowatz, M., & O'Brien, O. (2018). Technology engagement for academics in third level: Utilising the technological, pedagogical and content knowledge framework (TPACK). *Journal Of Applied Learning And Teaching, 1*(1), 13-24.

Mobile Micro-Learning that drives real behaviour change. (n.d.) *Gnowbe*. Retrieved from https://www.gnowbe.com/

Gassler, G., Hug, T., & Glahn, C. (2004). Integrated micro learning – an outline of the basic method and first results. *Interactive Computer Aided Learning, 4*, 1-7.

Harris, C. W. (2016). From flipped flops to fabulous fusion: Kaplan Singapore's diploma school's blended learning version 2. *Kaplan Singapore Teaching and Learning Newsletter, 11 (Sep.)*, 9-12. Retrieved from: https://www.academia.edu/29656042/From_Flipped_Flops_to_Fabulous_Fusion_Kaplan_Singapores_Diploma_Schools_Blended_Learning_Version_2

Harris, C. W. (2012). The uses of Facebook© technologies in hospitality curriculum on an experiential learning platform for a new generation of students. *Asia Pacific Journal of Marketing and Logistics, 24*(5), 805-825.

Kagan, S., & Kagan, S. (1994). *Cooperative learning (Vol. 2)*. San Juan Capistrano, CA: Kagan Cooperative Learning.

McBee, R. (2011). *Rembrandt In Berlin - Moses Breaking The Tablets Of The Law*. Retrieved from https://richardmcbee.com/writings/jewish-art-before-1800/item/rembrandt-in-berlin-moses-breaking-the-tablets-of-the-law

Millwood, R. (2000). A New relationship with media? In N. Gamble and N. Easingwood, *ICT and literacy: Information and communications technology, media, reading, and writing* (pp. 33-44). London, England: Continuum, 33-44.

Mosteller, F. (1989). The 'muddiest point in the lecture' as a feedback device. *On Teaching and Learning: The Journal of the Harvard-Danforth Center, 3*, 10-21.

Mott, J. (2010). Envisioning the post-LMS era: The open learning network. *Educause Quarterly, 33*(1), 1-9.

Queen's University Belfast. (2016). *North British Functional Analysis Seminar Meeting at QUB*. Retrieved from https://www.qub.ac.uk/schools/SchoolofMathematicsandPhysics/Discover/Events/NorthBritishFunctionalAnalysisSeminarmeetingatQUB.html

Sarrab, M., Al-Shihi, H., Al-Manthari, B., & Bourdoucen, H. (2018). Toward educational requirements model for mobile learning development and adoption in higher education. *Techtrends, 62*(6), 635-646.

Shelley, A., & Goodwin, D. (2018). Optimising learning outcomes through social co-creation of new knowledge in real-life client challenges. *Journal of Applied Learning and Teaching, 1*(2), 26-37.

Siemens, G. (2008). Learning and knowing in networks: Changing roles for educators and designers. *ITFORUM for Discussion, 27*, 1-26.

Soderstrom, N. C., Kerr, T. K., & Bjork, R. A. (2016). The critical importance of retrieval — and spacing — for learning. *Psychological Science, 27*(2), 223-230.

upNEXTedu: Learning Design Matters. (2018). *upnextLAB*. Retrieved from http://www.upnextedu.com/

Where's Wally adding Facebook like wall. (2012). *Moodurian* [Blog post]. Retrieved from http://moodurian.blogspot.com/2012/10/wheres-wally-adding-facebook-like-wall.html

Woodill, G., & Fell, D. (2006). Chief Learning Officer. *Citeseer*. Retrieved from: http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.89.6816

Woods, R., & Ebersole, S. (2003). Becoming a "communal architect" in the online classroom: Integrating cognitive and affective learning for maximum effect in web-based education. *Journal of Open, Flexible, and Distance Learning, 7*(1), 52-67.