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## GENERAL & APPLIED ECONOMICS | RESEARCH ARTICLE

# The hullabaloo over e-learning? Technology and pluralism in economics

Duncan Watson<sup>1\*</sup> and Louise Parker<sup>1</sup>

**Abstract:** E-learning vs. face-to-face delivery: this binary opposition has governed much of the existing pedagogical research concerning technological innovation, as educationists are pressured to prioritise efficiency and the cost-effectiveness of traditional teaching methods. This paper rejects such a false dichotomy, proffering the alternative that can be found in blended learning methods. It is through the meticulous splicing of e-learning and traditional lectures that the individual economics lecturer is freed to deliver a pluralist perspective. “Contest and controversy; orthodoxy and heterodoxy; critique and reject”: technology provides the vehicle for economics education to break free of the constraints of monist teaching methods and ensures that economics students can fully engage in the discipline’s vibrant debates.

**Subjects:** Economics; Education; Teaching & Learning

**Keywords:** e-learning; pluralism; technology; blended learning, economic tools for teaching

### 1. Introduction

Not so long ago, the technologically advanced academic’s room could be found carpeted with faded yellow overhead projector slides. The appearance of Microsoft’s PowerPoint seemed avant-garde, in comparison, as the traditional method of “talk and chalk” was increasingly discarded. With the new

### ABOUT THE AUTHORS

Duncan Watson is the Chair of Ecuator, an organisation committed to sharing good teaching practices and enhancing the quality of economics education. Providing an open forum for pluralism in economics, it recognises the existing diversity in teaching methods and the vibrancy of economics curricula. An applied economist with a background in labour economics, Duncan’s research is interdisciplinary in nature. Primarily concerned with empirical analysis, he has published in journals specialising in a wide variety of research areas. This article illustrates his general desire to explore alternative approaches to both research-led teaching and teaching-led research.

Louise Parker holds a doctorate in English Literature that specialises in Welsh Writing in the English Language. She is currently working on two novels and aims to develop this creative writing extensively over the next few years. Louise is published in her own field, but frequently crosses the disciplinary boundaries and leaves her comfort zone to assist economists in some of their more eclectic research.

### PUBLIC INTEREST STATEMENT

E-learning vs. “talk and chalk”: this binary opposition presents a conflict that has dominated existing pedagogical research. That technological innovation offers an alternative for pressured educationists to improve efficiency and question the cost-effectiveness of traditional teaching methods creates a false dichotomy. This paper addresses the influence of the erroneous “either/or” position and discards it. It claims that there is no fundamental antagonism between the two methods of instruction and proffers the alternative found in blended learning methods. The meticulous splicing of e-learning and traditional lectures liberates the Economics lecturer to deliver a pluralist perspective. Thus, technology becomes a vital tool enabling educators to escape from the limitation of monist teaching methods and guarantees that economics students can fully engage with the discipline’s vibrant debates. “Contest and controversy; orthodoxy and heterodoxy; critique and reject”: technology’s real role is to facilitate a workable space for the free thinking mind.

world application of structured bullet points, it was possible for these lecturers to now engineer the most basic forms of learner–student interaction. Photocopies of the slides could be handed out beforehand. The eager audience would then supposedly concentrate on what is being said, rather than being forced to simply parrot write—as fast as they physically could—what the lecturer provides. The cunning lecturer might adopt a “missing word” format in these handouts, apparently geared at ensuring student attention is maintained throughout the teaching session.

The advent of the information revolution, and the myriad of new technologies involved, makes such techniques look naïve. Academics are now typically expected to at least engage in virtual learning environments, enabling “just-in-time” knowledge attainment whereby required information is now at the touch of a student’s smartphone. The more adventurous amongst us would perhaps engage with the hype surrounding Web 2.0, which has “blurred the line between producers and consumers of content and has shifted attention from access to information toward access to other people” (Brown & Adler, 2008, p. 18). Social media, in particular, has arguably enabled a more personalised learning experience which rewards the initiative of the learner and ensures a more intimate learning experience. Argued to be the biggest thing in Higher Education since sliced bread, at least in terms of any pedagogical cheer, is the “flipping the classroom” approach. With discontent over the apparently low learning value of traditional lectures, technology has made it relatively straightforward to invert classroom activities. Universities have embraced “lecture capture”, recording lectures to free up future face-to-face lecture time for more interactive, “worthwhile” activities.

Despite the industry created by learning technologies and the seemingly daily publication of the impact of some new innovation, the evidence into the impact on learning is not impressive. As shown in the brief review in the next section, for each study referring to gains in student marks, there are counter-papers rejecting these claims as spurious. This paper argues that this confusion in the literature partially reflects the ambiguity in the objectives in utilising technology. To some extent, these objectives are beyond the lecturer’s remit. Technology-based education initiatives, for example, may reflect a conservatism based on delivering cost-efficiency. Online instruction, for example, reduces the need for the expense of face-to-face instruction (Wise & Rothman, 2010). Universities can free up resources typically needed for on-campus student support. Academics, in contrast, can be freed to focus even more on their research outputs. However, when the lecturer is in full control, the problem may originate from a lack of foresight, where technology simply diffuses from everyday applications into teaching practices. This supposed laziness may be rationalised according to the apparent impact on the learning culture: a technologically advanced student could, for example, process information differently such that knowledge retention differs for electronically acquired information. However, under the microscope of pluralism, we will argue that greater thought is required for the gains from technology to be apparent. It is therefore delivering curriculum reform which ensures that technology and pedagogical advancement go hand in hand.

## 2. A short review of e-learning

A striking aspect of the available literature is the focus on a perceived battle between “face-to-face” and online methods. The latter can be championed by the constructionist learning model (Leidner & Jarvenpaa, 1995). As detailed by Zhang (2005, p. 149), this model places learner-centred instruction at its core:

Constructivism emphasizes active participation and reflection by learners, who should control the pace of instruction and construct knowledge by themselves

The online approach can generate the high levels of interactivity required to support this approach. This interactivity would seem to generate nothing but positivity: greater satisfaction levels; superior assessment outcomes and a general love for the distance learning approach (Chapman, Selvarajah, & Webster, 1999; Fredericksen, Pickett, Shea, & Pelz, 2000; Fulford & Zhang, 1993). There is, however, the opposing argument that all is not lost for the old school of face-to-face delivery. Varao-Sousa and Kingstone (2015), for example, compare live lectures and lectures on video. They

find that students prefer the former, with live performance critical for engineering greater interest in the material presented. One would suppose of course this is reliant on the type of performance. To ape the stand-up comic would be better than a monotone rehashing of dry concepts devoid of practical relevance.

In terms of the empirical evidence, as discussed in depth by Means, Toyama, Murphy, and Baki (2013), research traditionally derived a “so what?” conclusion for this conflict. Learning with technologies were deemed to be as effective as the standard classroom learning (Bernard et al., 2004; Cavanaugh, 2001; Machtmes & Asher, 2000; Zhao, Lei, Yan, Lai, & Tan, 2005). This seemingly gives a green light to the March of distance learning, with the expense of face-to-face education easily replaced with the “economies of scale” friendliness of online methods. However, other evidence is less forgiving. Brown and Liedholm (2002), for example, show that face-to-face students perform significantly better than online students. This is further supported by Figlio, Rush, and Yin (2013) who, by including a number of control variables such as university entry scores, derive a precise gain from face-to-face tutelage: average scores are likely to be 2.5 percentage points higher. Reading these results, we may be forgiven for welcoming the fears over the use of technology and calls from the luddites to return to the comforts of “talk and chalk” simplicity.

This is undoubtedly an irrelevant debate for the individual lecturer at the “coal face” of higher education. There, it is already known that a hybrid is on offer. Technological support for “blended learning” is in place and has had particularly positive press, as indicated by the quote from the President of Pennsylvania State University: “hybrid instruction is the single greatest unrecognized trend in higher education today” (Young, 2002, p. 33). The pedagogical literature, however, lets us down by not being precise over what blended learning actually entails. Does it simply refer to mix and match learning methods, as traditional classrooms are increasingly combined with the virtual environment and other innovations in web-based technologies? Alternatively, is it necessary to be more experimental and explore how to combine pedagogical approaches (e.g. behaviourism and cognitivism) thus engineering an optimal learning environment? In truth, it is probably best to offer a simple definition: that blending has occurred when traditional face-to-face education is combined with work undertaken online. Horn and Staker (2011, p. 3) support this simplicity:

... any time a student learns at least in part in a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path and/or pace

The available research reveals much support for the flexibility that these teaching methods offer. Chen and Lin (2012), for example, refer to how supplemental video lectures generate an overall improvement of 4% points on exam outcomes. Emerson and Taylor (2004), in contrast, refer to how the use of interactive experiments can improve outcomes by up to 9% points. However, the tendency to select such specific measures, also exposes an ambiguity that smudges the clarity of the overall learning outcomes. For, it is possible to find as many papers that reject any significant improvements compared to students in traditional classes (Brown & Liedholm, 2002; Olitsky & Cosgrove, 2013; Terry & Lewer, 2003). To this must be added the papers that imply a more generally negative verdict. For example, Cosgrove and Olitsky (2014) raise questions about whether blended methods result in sufficient knowledge retention. A possibly more disturbing finding is offered by Kwak, Menezes, and Sherwood (2015) who record that when learning is non-cumulative, blended learning can have no impact on achievement. Even when learning is cumulative, the effects are negative. It is towards the latter cumulative learning outcome that Economic tuition tends.

Frequently, these findings are used to justify redirecting the reader back towards the highly fashionable process of “flipping”. Olitsky and Cosgrove (2016, p. 2), for example, refer to a 7% point improvement from “flipping” and conclude:

... our results support the implementation of the flipped-blended format as a cost-reducing, outcome-improving alternative to the traditional face-to-face course

In reality, we should be extra cautious with these conclusions. As highlighted by Clark (1983), it is difficult to interpret across learning mediums if we are not controlling for the plethora of instructor and content variables that are also at play. Rather than being distracted by the pedagogical industry peddling inaccurate research driven by policy concerns about cost-efficiency, it is crucial to focus on the practical standpoint of the lecturer. It is important not to assume that the advantages of technology will necessarily generate positive outcomes and sit consistently with the student's increasingly gadget-orientated lifestyle. It is vital to objectively consider why technology is being used, and then redesign instruction according to the resulting rationale. This rationale, according to our stance, is focused on delivering a pluralist perspective that rejects the textbook approach that so many economic modules have fallen foul of.

### 3. Linking pluralism and the use of technology

While there have been numerous attempts to define pluralism within the context of economics, Denis (2009, p. 7) generates clarity for the practitioner. Referring to how economics is a discipline that is comprised of “not one but many sciences of economics”, he makes a distinction between permissive and assertive forms in the depth of pluralist outcome. In the permissive form, the consideration of different approaches is allowed but only as a foil for the accepted discourse. Aggregating across module provision, this can ensure that the student at least acknowledges the existence of numerous schools of thought. Assertive pluralism, offered as the superior form, considers exposure to competing schools of thought to be a necessary learning outcome. As Denis (2009, p. 11) puts it, it is “the difference between tolerating diversity and embracing diversity”.

Economists thankfully do not think alike. There exists a multitude of schools of thought which frequently generate inconsistent explanations for a specific economic outcome. The student therefore must be guided towards an understanding that economics cannot be understood through the adoption of one perspective. It is only through comparing and contrasting various economic schools of thought, whilst engaging with related disciplines in the social sciences, that economists can be creative in their enquiry. Given this, there is no justification to teach economics as if a consensus exists. Such an assumption would seemingly serve no purpose and result only in the student being deprived of the rich debate within the discipline. In short, a pluralist teaching approach—whereby the instructor and learner consider the different ways of understanding economic phenomena—is seen as the natural outcome which all economics education should pursue.

Despite this natural outcome, monist approaches continue to inflict economics education. A crucial part of this monism is the reliance on the textbook which, if used as a teaching bible, can serve as an enemy of liberated thought. In effect, it can convey an “ideal” discipline that is free of the holes, inconsistencies, conflicts and disparities that are known to be present. Used without imagination, the archetypal textbook can encourage narrow teaching methods and elicit equally limited responses from students who are inevitably happy to be told “the answer” even if it is open to question. Economics students can be directed towards a false reality which encourages an approach to their subject with few self-conscious reflexes.

But how does one “teach” this pluralism? With multiple schools of thought to consider, we're left with the university lecturer scrambling to cover as much material as possible, subject to the organisational constraints that he/she faces. This is a state which bears striking similarities to the constrained maximisation problems that are so religiously favoured by the orthodox. Time constraints alone mean that the individual figure cannot encompass all dimensions and viewpoints in the finite time available to them. It is the technology-based opportunities provided by blended learning that offer a solution.

#### 4. Practical application

On the face of it, our discussion could also be read as another version of “flipping the classroom”, originally championed by Walvoord and Anderson (1998). As such, we could simply endorse the provision of material traditionally given in the lecture beforehand (e.g. Lage, Platt, & Treglia, 2000). The form this takes will often be dependent on the level of technological knowledge, and in order to free his/her time one finds the lecturer feverishly creating screencasts that embellish the material found in the orthodox textbook. The lecturer is then able to focus on more conceptual questions. Technology will often also be used within these lectures, incorporating the use of student response systems to create a more interactive “debating” environment. Such a format arguably suits the pluralist agenda. There is no need to reiterate the orthodox position in the lecture. Pre-lecture videos detailing this position can, within the lecturing environment, be compared with alternative approaches. The student is thus offered choice and the interactive systems can be used to encourage students to critique and, where necessary, dismiss.

Despite the advantages of “flipping” and how this can supposedly solve the problem of student disengagement, it has a fatal shortcoming: this process alone is not pluralism. Instead, it facilitates merely a structured means of questioning the orthodox position. Even with these “flipping” techniques in position, there are still severe constraints determining what can be covered. Except in very specific problem-based exercises, the instructor will still be forced to dictate which theoretical concepts can be covered and which must be ignored. This very process of selection necessarily creates an outcome which should be inherently alien to the pluralist agenda: the student is simply being encouraged to accept that the instructor’s theoretical preferences are appropriate.

Watson, Cook, and Arico (2014, p. 244) argue that for pluralism to be properly delivered, assessment practices must be overhauled to deliver a change in the teacher–student dynamic:

Innovative assessment should be placed at the heart of a successfully pluralist education, removing the emphasis placed on the “teacher” onto the students themselves

Here, however, a more straightforward response is sought: the substitution of the textbook with e-learning methods. To many this may seem daunting, given e-learning is often associated with Massive Open Online Courses and therefore perceived as being delivered by staff purely dedicated to this endeavour. However, the available packages (e.g. Articulate Presenter 13) provide simple templates that are ideal to easily compare and contrast between opposing schools of thought. Students are able to click the competing perspectives and, independent of the lecturer, form an individual assessment of their relative relevance. The impact on student outcomes may be deemed difficult to determine. Simply comparing marks across years is ill-advised, given cohort-specific characteristics are possible. However, by workload accident, we implemented these modules half way through an Intermediate Microeconomics module covering core concepts in consumer theory and theory of the firm. This created an e-learning natural experiment. Empirical investigation of this experiment indicated a highly positive mark enhancement of just under 10% points. As such effects are not observed in previous cohorts, it is unlikely to reflect issues such as topic preference or general progression in student know-how. There are numerous possible alternative explanations. First, the e-learning framework is more engaging than the traditional textbook. Monitoring of student behaviour reveals a high read rate. Qualitative feedback also refers to how the rational student reacts: when confronted with material constructed by the lecturer, rather than unknown textbook author, the student believes it is more relevant and therefore more consistently used when revising.

Undoubtedly, blended learning can create time concerns for the lecturer. While e-learning enables the integration of freely available online multimedia within their pages, there is still a need to write on the competing theoretical perspectives of individual schools of thought. However, these issues are merely start-up costs. Once created, the e-learning packages can be annually embedded within the virtual learning environment. Additionally, the lecturer is able to consider content and quizzing at the same time. Using the available templates, the creation of formative assessment then

becomes a straightforward task. With results automatically embedded within the virtual learning environment, the lecturer is in possession of their own learning analytics data focused on monitoring student progress and their understanding of specific concepts. Such information allows immediate reaction to knowledge deficiencies, such as changes in the design and purpose of specific seminars.

## 5. Concluding remarks

“The teaching of economics is in crisis” writes the International Student Initiative for Pluralism in Economics. In some ways, it is justified that economics education should be condemned for its backwardness. The recent CORE project into curriculum reform of introductory economics, for example, uses the tagline “teaching economics as if the last three decades had happened”. A constantly uneasy issue is the reliance of the discipline on a restrictive hypothetical world, removed from economic reality in order to facilitate the generation of comfortable mathematical formulae. The unfortunate consequence of this is that with minimal critical reasoning, students can automatically resort to the use of rational economic man and equilibrium to reiterate the assumed efficiency of the hypothetical market. The role of numbers, within this utopianism, then becomes about finding “fictitious values invented at the desk of the textbook author in order to fit the courageous assumptions necessary for developing the respective economics model” (Otsch & Kapeller, 2010, p. 17).

Economics, however, has the opportunity to play a pivotal role in liberating blended learning from the slavish desire to reduce the costs of education. Giving e-learning a pluralist objective provides the chance to shift the debate away from the dichotomy of “face-to-face” vs. “distance learning”. Blended learning should therefore take a more dominant position in our teaching practices. While the definition posited by Horn and Staker (2011) is correct, it could be so much more. Blended learning will only generate positive outcomes if clear purpose is behind its use. Pluralism gives it that purpose.

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