Five Key Ethical Issues in Online Education:

An Annotated Bibliography

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Academic Integrity

Bedford, D. Wayne., Gregg, Janie R., & Clinton, Suzanne M. (2011). Preventing online cheating with technology: A pilot study of remote proctor and an update of its use. *Journal of Higher Education Theory and Practice 11*(2), 41-58.

As technology advances and students find more creative ways to cheat electronically institutions respond in creative ways as well. It is not clear how many online cheaters realize the risk they are taking and the burden they are placing on their institutions. This article discusses the reasons why students cheat and what professors can do to inhibit cheating. This article contains a chart that catalogs the literature surrounding academic dishonesty listed by the variables each study researched.

Chiesl, N. (2007). Pragmatic Methods to reduce dishonesty in web-based courses. *The Quarterly Review of Distance Education, 8*(3), 203-211.

By 2007 online distance education was a well-established, mature paradigm in higher education and this article illustrates the continued problem of academic dishonesty in online environments at that late date. The author cites comprehensive cheating studies going back to the 1960's prior to the advent of internet distance learning to demonstrate that cheating continues to grow in prevalence even on campus. This emphasizes how much easier it is for students to cheat in online classes.

Foster, Andrea. (2008). New systems keep a close eye on online students at home. *Chronicle of Higher Education 54*(46), A1.

Among the ethical considerations of online education, academic honesty among students enrolled in online courses and programs is a central issue. The author catalogs a

recent attempt to curb the tendency to cheat on examinations by having others complete

their work. This brief article is useful to illustrate the many concerns opened up by

invasive technologies but is sufficiently dated to be well behind the technological

development curve.

Piña, Anthony A. (2010). Online diploma mills: implications for legitimate distance
 education. *Distance Education 31*(1), 121-126. Doi:
 10.1080/01587911003725063

Piña (2010) discusses the challenges faced by legitimate providers of online

distance education due to the pervasiveness of diploma mills. The author looks at the

major factors that create this challenge to prove online distance education offers a valid

and substantive option for those unable or unwilling to attend traditional campuses and

traditional classrooms. Most consumers of higher education recognize the stamp of

approval given by regional accreditors but often do not understand that these are third

party organizations to whom the federal and state governments rely upon for quality

assurance. Regional accrediting bodies have been slow to recognize the value of online

distance education.

Young, Jeffrey R. (April 2, 2010). High-Tech cheating abounds and professors bear some
 blame. *Chronicle of Higher Education 56*(29), A1-A14.

Technology has provided college students with new ways and new opportunities

to cheat on their homework. This article deals with the cheating uncovered by professors

in various academic departments and especially those in the hard sciences. Even more

disturbing is the tendency of some faculty to look the other way and instruct their

teaching assistants to grade the homework as they find it without confronting the offending students. This practice may be limited to a few institutions and a few professors but many professors are fighting and pushing back against student cheating. Professors often recognize and limit cheating with every option available to them. One of the great values of this article is to notice the increase in cheating occurrences and the changing ethical codes and moral values of current students.

Big Data and Learning Analytics

Bentivoglio, C.A., D'Antini, G., Gison, G., & Giusepponi, K. (2014). Data warehouse, reporting, and stakeholder engagement: Achievements of the University of Macerata. *Journal of e-Learning and Knowledge Society, 10*(2), 77-89.

This article outlines some of the ways European universities are using data mining as a way of monitoring multiple databases and ways of using data mining as a tool in European Higher Education. There are indications that European universities are looking to use their various databases to monitor enrollment, student progress, and forecast system needs but there is also an indication that, at least in the Italian university context, they are looking for a way to monetize their data systems for wider use.

Bichsel, J. (2012). *Analytics in higher education: Benefits, barriers, progress, and recommendations.* (Research Report). Louisville, CO. Retrieved from educause.edu/ecar

This research report contains a helpful list of key findings and recommendations in the first few pages that include the economic impact of analytics. There is a list of

concerns included that deals with affordability, data, culture, and expertise. The report

concludes with a list of recommendations.

Booth, M. (2012). Learning analytics: The new black. *EDUCAUSE Review Online*, 52–
53.

The author concedes that learning analytics is popular and has potential power for

the future of learning. There is a discussion of three of nine assessment principles laid

out in 1992 by the American Association for Higher Education Assessment Forum for

proper application of Learning Analytics.

Buerck, J.P., & Mudigonda, S.P. (2014). A resource-constrained approach to
implementing analytics in an institution of higher education: an experience report.
Journal of Learning Analytics, *1*(1), 129–139.

This article chronicles two attempts to develop a learning analytics initiative with

the intention of developing retention programs. This effort reflects the leading efforts of

several institutions. Many recognize the potential ethical violation but few decide to take

this step toward protecting the privacy of student data.

Campbell, J.P., DeBlois, P.B., & Oblinger, D.G. (2007). Academic analytics: A new tool
for a new era. *EDUCAUSE review, 42*(4), 41-57.

This article of valuable for its historical value and for the general nature of

explaining how academic analytics began, how they are collected, and what institutions

have used them to accomplish. This reflects some of the ground-breaking work of

analytics projects prior to the popularity of MOOCs. The authors include detailed

discussions of how this new tool has been positively used there still remains certain

unanswered questions for the future use and proper care of these data. The authors

provide a list of areas of concern such as data privacy and stewardship, as well as who

will have access to data at each stage of analysis, and building profiles.

Del Blanco, A., Serrano, A., Friere, M., Martinez-Ortiz, I., & Fernandez-Manjon, B.
    (2013). E-learning standards and learning analytics: Can data collection be
    improved by using standard data models? IEEE Global Engineering Conference
    (EDUCON).

Learning Analytics is quickly becoming an expanding field that studies the

collection of student data for the purposes of making interventions in learning and

designing more effective learning outcomes. This article exposes the weaknesses of the

learning tools available in Learning Management Systems and their inability to

communicate and share data across networks. This paper is also a summary of new

exploratory work being conducted in the field of leaning analytics. The article is geared

more to the IT professional familiar with these standards and the technical operation of

LMS and MOOC platforms.

Fernandez, A., Peralta, D., Benitez, J.M., & Herrera, F. (2014). E-learning and
    educational data mining in cloud computing: An overview. *International Journal
    of Learning Technology*, *9*(1), 25–52.

The authors attempt to make the case that higher education institutions should

seriously consider the advantages of migrating their e-learning system to cloud-based

systems. The authors list many advantages as well as disadvantages to this practice but

they are clearly in favor of institutions using cloud-based services.

Jayaprakash, S.M., Moody, E.W., Lauria, E.J.M., Ragan, J.R., & Baron, J.D. (2014). Early alert of academically at-risk students: An open-source analytics initiative. *Journal of Learning Analytics*, *1*(1), 6–47.

The researchers introduce the reader to the emerging landscape of learning analytics and the successful projects that have been initiated to study the use and deployment of learning analytics. The researchers explored the Open Academic Analytics Initiative (OAAI) and catalog its successes.

Johnson, J.A. (2014). The ethics of big data in higher education. *International Review of Information Ethics*, *21*, 3–10.

Two major challenges to using big data in higher education are put forward. Current practices in data mining disaggregate individuals and collectivize students to a central tendency. Scientism is the second biggest challenge facing the use of big data in higher education and the author calls it the deep challenge. Because complex algorithms are developed to mine data and they are developed by scientists then the data they produce is uncritically accepted as fact.

Kay, D., Korn, N., & Oppenheim, C. (2012). Legal risk and ethical aspects of analytics in higher education. *CETIS Analytics Series*, *1*(6), 1–30.

This article provides a useful set of legal and ethical considerations for six institutions in the UK. There are five main legal and ethical concerns in this context that are similar in other developed nations: Data Protection, Confidentiality and Consent, Freedom of Information, Intellectual Property Rights, and Licensing for Reuse.

Oblinger, D. (2012). Let's talk analytics. *EDUCAUSE Review*, *47*(4), 10–13.

The author examines the need for learning analytics in higher education. There is a strong appeal to the usefulness of such data and encourages seeking answers to the challenges in order to make the most of the tool. The author also answers the critics of learning analytics.

Petersen, R. (2012). Policy dimensions of analytics in higher education. *EDUCAUSE Review*, *July/August*, 44–49.

External constituencies put tremendous burdens on institutions of higher education calling for greater accountability and efficiency when it comes to the cost of teaching and learning. This article is intended to help administrators develop the proper policies around protecting the privacy of student data.

Prinsloo, P., & Slade, S. (2013). An evaluation of policy frameworks for addressing ethical considerations in learning analytics. In *Third Conference on learning analytics and knowledge* (pp. 240–244). Leuven, Belgium.

The researchers offer four considerations for institutions in developing context-specific policy frameworks for learning analytics data collection: who benefits and under what conditions, conditions for consent, de-identification and opting out, vulnerability and harm, and collection, analyses, access to and storage of data. This paper was a qualitative study of two different institutions and how they developed their policy frameworks to align with national and international laws regarding student information privacy.

Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and education. *EDUCAUSE Review*, *46*(5), 30–32.

Siemens and Long take a positive view of the uses of learning analytics listing extensive possibilities that have the potential to answer the external calls for higher education to prove its value to students. The authors define learning analytics and big data to help readers access the information if they are new to the material. The authors provide great information on the tremendous potential and power that are evident in learning analytics.

Slade, S., & Prinsloo, P. (2013). Learning analytics: ethical issues and dilemmas. *American Behavioral Scientist*, *57*(10), 1510–1529.

The authors suggest a socio-critical epistemology for studying the ethical problems regarding the collection and use of learning analytics in higher education. They provide a literature review that highlights overlapping concerns for the emerging field of learning analytics and how the field has studied ethical issues.

Vivekanandan, V., & Karpagavalli, N. (2014). Efficient data analysis scheme for increasing performance in big data. *International Journal of Advanced Information and Communication Technology*, *1*(2), 193–198. doi:01.0401/ijaict.2014.02.04

The authors laud the abilities of big data to handle multiple streams of incoming data and its parallel functions. The researchers explain, in simple terms, the three characteristics of big data processes as well as explaining the Hadoop open-source architecture.

Massive Open Online Courses (MOOCs)

Baggaley, J. (2014). Reflection: MOOC postscript. *Distance Education*, *35*(1), 126–132. doi:10.1080/01587919.2013.876142

The author claims that MOOCs are not the greatest educational phenomenon and will be short-lived because of their massiveness and openness. The author seems to believe that connnectivism is a pedagogical joke and reveals that other scholars scoff at the theory as a hoax.

Billington, P.J. & Fronmueller, M.P. (2013). MOOCs and the future of higher education. *Journal of Higher Education Theory and Practice, 13*(3/4), 36-43.

The authors take up the development of Massive Open Online Courses from their roots in a model made to address higher education costs and increasing tuition. The article discusses the extreme views of MOOCs from those who believe they will kill the university to those who believe MOOCs are an educational bubble that will eventually burst. While the authors are positive about the future MOOCs have in higher education they also note their limitations and problems.

Clara, M., & Barbera, E. (2013). Learning online: Massive open online courses (MOOCs), connectivism, and cultural psychology. *Distance Education*, *34*(1), 129–136. doi:10.1080/01587919.2013.770428

The researchers offer a criticism of the pedagogical theory of Connectivism developed for understanding the learning process in emerging technology, particularly Massive Open Online Courses (MOOCs). The researchers take Connectivism to task in favor of developing a learning theory rooted and grounded in cultural psychology.

Cormier, D., & Siemens, G. (2010). Through the open door: Open courses as research, learning, and engagement. *EDUCAUSE Review*, *45*(4), 30–39.

This work is an early example of researchers curious about the potential of MOOCs to open up access to education for people who could not afford the cost of higher education. The authors discuss the meaning of openness in higher education.

Domonell, K. (2013). The rights question: Who owns intellectual property in the brave new world of MOOCs? *University Business*, *16*(5), 44–46.

The author seeks to answer four fundamental questions concerning Intellectual Property rights regarding MOOC content. What is fair to use? Who owns a MOOC? Who will profit? Why have a policy? Each question is answered using current knowledge such as lawsuits for copyright infringement as well as contract language between MOOC providers and universities.

Fini, A. (2009). The technological dimension of a massive open online course: Review of research in open and distance learning. *The International Review of Research in Open and Distance Learning*, *10*(5). Retrieved from www.irrodl.org/index.php/irrodl/article/view/643/1402

This article is a research study of the Connectivism and Connective Knowledge MOOC by Seimens and Downes in 2008 that kick started the MOOC revolution in higher education. This work provides valuable insights into how people learn and interact with technology. The work also provides excellent bibliographic references of other studies conducted with open educational resources prior to the actual launch of the first MOOC.

Fischer, G. (2014). Beyond hype and underestimation: Identifying research challenges for the future of MOOCs. *Distance Education*, *35*(2), 149–158. doi:10.1080/01587919.2014.920752

Fischer takes a more reasonable view of the affect MOOC will have on higher education and the role they could take on in the future. The emphasis in this article is on the value of teaching and learning in the context of MOOCs.

Godwin-Jones, R. (2014). Global reach and local practice: The promise of MOOCs. *Language Learning & Technology*, *18*(3), 5–15.

Godwin-Jones asserts that the latest iteration of the massive open online course actually represents a step backwards in online pedagogy because the way an xMOOC operates is not much different from how a traditional course is delivered. The author's main thrust is to develop the idea that MOOCs might serve as the proper platform for language acquisition.

Liyanagunawardena, T. R., Adams, A. A., & Williams, S. A. (2013). MOOCs: A Systematic Study of the Published Literature 2008-2012. *International Review of Research in Open & Distance Learning*, *14*(3), 202–227.

This article details a meta-analysis of relevant literature referencing MOOCs from the first known MOOC in 2008 to the time of the article in 2012. The authors discuss their search strategies and search terms cataloging the growth of the body of literature 2008 to 2012. This article is important for the groundwork it lays in tracing the development of the literature on MOOCs and the directions researchers have been going in since their beginnings.

Marshall, S.J. (2013). Evaluating the strategic and leadership challenges of MOOCs. *MERLOT Journal of Online Learning and Teaching*, *9*(2), 216–227.

Marshall looks at MOOCs from Porter's (1985, 2008) Five Forces of strategic challenge. Through the lens of these five market forces Marshall looks at strategies higher education institutions can employ to successfully compete in the online education marketplace.

Marshall, S.J. (2014). Exploring the ethical implications of MOOCs. *Distance Education*, *35*(2), 250–262. doi:10.1080/01587919.2014.917706

This article catalogs ways of avoiding harm, issues of consent, and deals with privacy, identity, and anonymity in internet research. This is a foundational article for anyone doing research into the ethical concerns of MOOCs.

Saadatmand, M., & Kumpulainen, K. (2014). Participants' perceptions of learning and networking in connectivist MOOCs. *MERLOT Journal of Online Learning and Teaching*, *10*(1), 16–30.

In this study the researchers primarily cover the emergence of the connectivist MOOC or cMOOC which has Connectivism as its theoretical framework. This was a virtual ethnography conducted to gain a deeper understanding of participation and learning in cMOOCs. This paper is a good reference for grasping what researchers are finding out about MOOC pedagogy.

Scholz, C.W., (2013). MOOCs and the liberal arts college. *MERLOT Journal of Online Learning and Teaching, 9*(2), 249-260.

This article describes the challenges and opportunities faced by Liberal Arts institutions of higher education with the advent of the MOOC platform. The article provides an extensive, up to date bibliography of literature being produced about MOOCs and that relate to MOOC development.

Shaw, C., Larson, R., & Sibdari, S. (2014). An asynchronous, personalized learning platform-guided learning pathways (GLP). *Creative Education*, *5*, 1189–1204. doi:10.4236/ce.2014.513135

Shaw, Larson, and Sibdari propose a technical solution with guided learning pathways (GLP) which is an asynchronous learning platform that institutions and companies can access to produce content modules that are then plugged into the platform. The platform would have the ability to link students to each other. The authors describe, in detail, their proposed platform of non-traditional, personalized learning.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, *2*(1), 3–10.

In this article, Siemens sets forth the theory of Connectivsim as a theory necessitated because of the speed of knowledge development and the introduction of technology to the process and application of knowledge. The actual definition given is that Connectivism is the integration of principles of chaos, network, and complexity and self-organization theories. The article points out that Connectivism is driven by the understanding that decisions are made quickly based on changing foundations.

Stewart, B. (2013). Massiveness + Openness = New literacies of participation? *MERLOT Journal of Online Learning and Teaching*, *9*(2), 228–238.

This is an article that deals with the teaching and learning framework and the

potential that MOOCs have for teaching practice and student achievement in the future.

The author claims to "skirt" the issue of MOOCs future impact to focus on how the new

technology may open up the development of new capacities.

Privacy

Bossewitch, J., & Sinnreich, A. (2013). The end of forgetting: Strategic agency beyond the panopticon. *New Media & Society*, *15*(2), 224–242. doi:10.1177/1461444812451565

The authors deal with the fact that much of the data that is collected on the

internet is prohibitively expensive if not impossible to remove, thus, the end of forgetting.

Once something is on the internet it essentially becomes a permanent data point

regardless of the affect it has on the subject of the data point.

Brinkman, B. (2013). An analysis of student privacy rights in the use of plagiarism detection systems. *Science and Engineering Ethics*, *19*(3), 1255–1266.

The use of plagiarism detection software on student assignments is coming under

fire. There is a small but growing legal defense advocating that such a practice violates

the student's copyright. One court has already ruled that if the students submit the work

to such a software platform prior to turning in an assignment it does not constitute a

copyright violation but it would be a copyright violation for a teacher to submit the assignment.

Daries, J.P. (2014). Privacy, Anonymity, and Big Data in the Social Sciences. *Queue*, *12*(7), 1–12.

The author believes that U.S. privacy statutes hold researchers back by a mistaken conflation between privacy and anonymity. The researcher also goes into a discussion of future policy developments that could protect student data while still offering researchers access to data sets for pure research purposes rather than for commercial purposes.

Deng, M., Wyuts, K., Scandariato, R., Preneel, B., & Joosen, W. (2010). A privacy threat analysis framework: Supporting the elicitation and fulfillment of privacy requirements. *Requirements Engineering*, *16*(1), 3–32.

Although this is an accessible article to a non-IT person, it contains a lot of technological language that would be more helpful to IT professionals. The authors/researchers attempt to develop a way to deal with threats to student personal data.

De Zwart, M., Humphreys, S., & Van Dissel, B. (2014). Surveillance, big data, and democracy: Lessons for Australia from the US and UK. *University of New South Wales Law Journal, 37* (2), 713-747.

This article focuses on what has been lost of personal privacy and what is likely not to be recoverable when it comes to personal privacy and the security of personally identifiable information. The practices have gone for so long and developed so well that it is unlikely that data collection practices will improve personal privacy.

Lewis, K., Kaufman, J., & Christakis, N. (2008). The taste for privacy: an analysis of college student privacy settings in an online social network. *Journal of Computer-Mediated Communication*, *14*(1), 79–100.

The age of this study is one limitation as well as the fact that the study only researched one institution. However, great insights were gained into the level of privacy people desire in online environments. This study demonstrated that most social network users prefer privacy and take steps to guard privacy once they are aware of the risks associated with use.

Narayanan, A., & Shmatikov, V. (2010). Myths and fallacies of "personally identifiable information." *Communications of the ACM*, *53*(6), 24.

This work was one of a number of works by various scholars who called into question the amount of personal data that was being harvested online by various entities such as government and businesses. The researchers revealed a number of myths regarding information use on the internet; the fact that de-identification is not a fool proof technique.

Pardo, A., & Siemens, G. (2014). Ethical and privacy principles for learning analytics. *British Journal of Educational Technology*, *45*(3), 438–450.

The authors cover four areas of privacy that need to be considered as the field continues to rapidly develop. There is immense value in this article in the tremendous bibliography provided.

Polenetsky, J., & Tene, O. (2014). The ethics of student privacy: Building trust for ed tech. *International Review of Information Ethics*, *21*, 25–73.

In this article the researchers discuss the effect of learning analytics and student data privacy from the perspective of K-12 public education. Many of the same concerns of administrators and parents at this level of education is the same as stakeholders in higher education.

Schwartz, P.M. (2011). Privacy, ethics, and analytics. *IEEE Security & Privacy*, *9*(3), 66–69.

The author explains the steps companies use in data analytics and the privacy concerns at each stage in the process. There is an extensive section on what companies can do to ensure the ethical use of data and analytic tools deployed to mine databases.

Schwartz, P.M. (2013). The EU-US privacy collision: A turn to institutions and procedures. *Harvard Law Review*, *126*, 1966-2009.

As the name suggests this lengthy paper traces the history of the EU-US data protections. The paper is in a legal format and language. The article contains a good deal of legal matter that could come in handy for studying the laws regarding data privacy.

Smith, H.J., Dinev, T., & Xu, H. (2011). Information privacy research: an interdisciplinary review. *MIS Quarterly*, *35*(4), 989–1015.

The researchers develop a meta-analysis of the body of literature surrounding information privacy as it has developed since 1990 with the rise of the internet. The internet and especially Web 2.0 has brought about a "third wave" of privacy concerns that are being researched and reported as of late. The authors group the body of literature into two broad groups of ethics-based descriptive research and works on varying levels of analysis.

Solove, D. (2013). Privacy self-management and the consent dilemma. *Harvard Law Review*, *126*(7), 1880–1903.

The author explores the framework of Privacy Self-Management which is the major framework for how privacy rights in the United States are formed. There are cognitive and structural problems with this approach that are addressed in this article, such as the fact that privacy is a very complex idea and very few individuals are informed enough to actually provide consent on what sorts of data is collected on them. The author suggests ways of adjusting Privacy Self-Management to be more user friendly.

Zimmer, M. (2010). But the data is already public: On the ethics of research in Facebook. *Ethics and Information Technology*, *12*(4), 313–325.

This study, conducted in 2009 revealed that most data sets are not sufficiently anonymized and trivial data such as gender, race, and home state are sufficient data points to discover or re-identify an individual's identity. This was a study done where

social media data were released and within four days of release computer experts were able to locate the source of the data and could then piece together information about individual's based on their race, gender, and home state.

Technological Disruption

Anderson, T., & McGreal, R. (2012). Disruptive technologies in Universities. *Educational Technology & Society*, *15*(4), 380–389.

The authors point to the disaggregation of services in other industries such as airlines and banking to the no frills options they offer in order to provide wider access to their services. This article takes on the rising cost of tuition and the challenge to widen college access by observing the institutional cost centers that could be unbundled, eliminated, or outsourced to public or private service providers that are often more effective.

Hall, R., & Stahl, B. (2012). Against commodification: the university, cognitive capitalism, and emerging technology. *Triple C*, *10*(2), 184–202.

The researchers use a Marxist lens to point out the way embedded technology dehumanizes people for the sake of production and how emerging technologies perpetuate capitalist ideology in the technology workforce. The point the researchers seem to be making is that the use of or commodification of technology in the university system diminishes the value of education and reinforces uneven power structures in the university and in society.

Markham, A., & Buchannan, E. (2012). *Ethical decision-making and internet research: Recommendations from the AOIR Ethics committee.* Retrieved from http://www.aoir.org/reports/ethics.pdf

The authors are part of a global organizational ethics working group of scholars. This document was put together and reviewed by a committee. It has a list of important ethical questions that should be answered before embarking upon any internet research study. The document is not intended to be a formal code of ethics. The researchers' intent is to build a flexible set of guidelines to help internet researchers ensure ethical practice.

Natale, S.M., Sora, S.A., & Drumheller, M. (2012). The importance of the university in the 21st century: Ethical conflicts and moral choices. *Journal of Academic Ethics 10* (1), 1-8. Doi: 10.1007/s10885-012-9152

The modern university is an outgrowth of hundreds of years of educational evolution in Western culture. As the needs of society have changed, slowly but surely, the university has changed its offerings to meet the needs of those changes to educate successive generations and provide them the foundations for productive life. The authors lay out three distinct models developing in higher education currently. The authors take this information to connect the need for what they call, virtualization. The final observation made is that all this culminates in the need to revamp the postsecondary curriculum in order to reflect a 21st century global society.

Natale, S. M., & Doran, C. (2012). Marketization of Education: An Ethical Dilemma. *Journal of Business Ethics*, *105*(2), 187–196. Doi: 10.1007/s10551-011-0958-y

Global competition has ramped up the need for institutions to find creative ways to gain a greater market share in the form of enrolled students. One of the common marketing approaches developed lately is including faculty in the recruitment process. Is this an ethical use of faculty time taking them away from their primary function of educating students? According to the authors, universities were once thought of as providing a public good, while today it appears to have been reduced to a marketable commodity. Curriculum and courses focused on "practical" knowledge is offered as one example of this trend. The authors also deal with the fact that there is an expectation of receiving a degree at the end of four years of college and the pressure is a real temptation for professors to inflate grades and promote students artificially.

Spector, J.M. (2013). Emerging educational technologies and research directions. *Educational Technology & Society*, *16*(2), 21–30.

This is a review of four different reports and projects with emerging educational technologies: The 2011 Horizon Report, The Roadmap for Educational Technology commissioned by the National Science Foundation, the European STELLAR project, and the IEEE Technical Committee on Learning Technology. The author focuses on the enablers and barriers to implementing technology enhanced learning that has the power to reach around the globe with educational access.