COURSE SYLLABUS

Course: Understanding the Digital Generation: Teaching and Learning in the New Digital Landscape

Presenters: Ian Jukes

Credits: 3 Graduate Credits

Course Overview

Because of digital bombardment and the emergence of the new digital landscape, "digital natives" process information, interact, and communicate in fundamentally different ways than any previous generations. In this course, Ian Jukes introduces neuroscientific and psychological research that explains how the use of technology, including frequent interruptions and shifts in attention, impacts the functions of the brain. These experiences are re-wiring and re-shaping students' cognitive processes. Consequently, in order to adapt, a fundamental shift in teaching is required to prepare teachers and students for the Information Age. Educators will learn to identify and challenge unconscious and outdated assumptions about schools and learning. They will analyze and revise their beliefs about what constitutes knowledge, critical thinking, and problem solving as they adapt their instructional practices and assessment strategies to the requirements of the digitized 21st century. Educators will focus on the eight core learning attributes of their digital learners and the eight core teaching and assessment strategies that appeal to millennial learners. They will learn to develop research-based constructivist models that will enable students to think, explore, and develop their own learning—to succeed not only in high-stakes testing but also in the real world. Finally, educators will learn that informational, technological, and media fluency can and should be taught in a structured manner, embedded at every grade level, in every subject area, the responsibility of every teacher throughout the entire school experience.

Presenters' Bios

Ian Jukes has been a teacher, an administrator, writer, consultant, university instructor, and keynote speaker. He is the director of the InfoSavvy Group, an international consulting group that provides leadership and program development in many areas, including assessment and evaluation, strategic alignment, professional development, change management, and hardware and software acquisition. Jukes has written twelve books, nine educational series, and has had more than 100 articles published in various journals. His most recently published books include *Teaching the Digital Generation: No More Cookie Cutter High Schools*, *Windows on the Future*, and *Net.Savvy: Building Information Literacy for the Classroom*. Jukes is also the publisher and co-editor of the Committed Sardine Blog, which is electronically distributed to more than 90,000 people in over 60 countries. In 2002 he was named one of the top ten educational speakers in America by Consulting Magazine Online.

Objectives

After completing this course, participants will know:
- The effects of exponential technological change on students and educational institutions
- Revised meaning of such terms as knowledge, critical thinking, and problem solving in the 21st century
- The eight core learning attributes of digital learners

- How to modify curriculum and instruction to teach to millennial learners
- The form and functions of digital age learners' "cultural brains"
- Research-based constructivist models for instruction
- Working definitions of informational, technological, and media fluency

Student Learning Outcomes

After completing this course, participants will apply the following skills:
- Redefine in context such terms as knowledge, critical thinking, and problem solving and apply this new understanding to teaching and learning
- Use new strategies to tap into the eight core learning attributes of digital learners
- Create lessons and activities based on a greater understanding of how students' brain development is affected by the culture of the Information Age
- Employ research-based constructivist models in the classroom
- Develop their students' informational, technological, and media fluency

Unit 1: Responding to the Needs of 21st Century Learners: Expert Panel Discussion

Experts in the field of technology in the classroom (Ted Hasselbring, Rushton Hurley, Ian Jukes, Cheryl Lemke, Meg Ormiston, and Ferdi Selim) address such critical questions as what the ideal learning environment should look like today, how such learning environments can build students' expertise, how best to facilitate cooperative learning, and how best to incorporate technology into those tasks. The panel models for the audience the essential task of asking themselves how they can improve as educators in our exponentially changing digital world.

Unit 2: Living on the Future Edge, Part 1

Change is so difficult because our perspectives are controlled by paradigms we don't know we've internalized, presenter Ian Jukes argues. We need to recognize to what degree we do things in education out of habit, without clear and articulated reasons, and without modification as the context changes. Moore's Law, which notes that technology is changing exponentially rather than linearly, underscores the profound changes transpiring in our world, as do photonics. To educate children in this new context, we have to change our archetypes.

Unit 3: Living on the Future Edge, Part 2

Presenter Ian Jukes adds "infowhelm" to his list of trends affecting education—i.e., the burgeoning use of the Internet, biotechnology, and nanotechnology—to consider how major changes in communication and access to knowledge in the digital world affect how students learn, what they learn, and where they learn. All three of these questions beg further questions about how educators can keep up with these transformations, how they can alter curriculum, and how they can be responsible to their students' futures.

Unit 4: Living on the Future Edge, Part 3

The trends of biotechnology and nanotechnology complicate the world's transformation even further, Jukes illustrates. The skills our students need are highly sophisticated and will only become exponentially more so. Both the individual and the institution must change to prepare students for an imminent world we can barely imagine. Jukes asks the course's participants to commit themselves to the transformation. Change is extremely difficult, he acknowledges, and can only occur when we challenge the paradigms that inform our practice.

Unit 5: Understanding the Digital Generation, Part 1

Changes in technology have literally changed students' minds: they think differently from previous generations', are physically and chemically different, and have different wants and needs. Digital bombardment has created what Jukes calls the "cultural brain" which is hyperlinked and neuroplastic. Students today have learning styles marked by preference for multimedia, parallel processing, and multitasking. They prefer processing pictures, sounds, color, and video before text; prefer to network simultaneously with others; and prefer instant feedback and immediate rewards. They prefer learning that's relevant, active, instantly useful, and fun. Jukes' fundamental message: teachers need to make profound adjustments to their teaching styles to accommodate these preferences.

Unit 6: Understanding the Digital Generation, Part 2

21st century students are masters of 21st century technology. Nonetheless, by and large, education does not capitalize on this fluency in cutting edge tools and techniques. As Jukes illustrates, there is a serious gap between traditional styles of instruction, learning, and assessment and the digital learning styles of today's students. Here, he outlines eight easy to follow steps that educators need to take in order to ensure their ability to effectively teach the new digital generation.

Unit 7: Education in the Age of Disruptive Innovation

Technological innovation is part and parcel of US life. From the invention of the cotton gin, to the development of the Internet, much of the country's wealth and power has come from its ability to find ways to do things better. Here, presenter Ian Jukes explores how like the flapping of the wings of a butterfly in the Amazon, the most simple technological advances can set off the most profound societal changes—and innovation can indeed become "disruptive."

Unit 8: Teaching for Tomorrow

Too often, "teaching 21st century learning skills" translates into "teaching students technology"–e.g., instructing them in Excel or PowerPoint. Jukes argues that teaching 21st century learning skills, or teaching for tomorrow, instead is about revamping traditional instructional styles in order to make them more appropriate for the technological demands of the 21st century.

Unit 9: Article: "Authentic Learning for the 21st Century: An Overview"

Participants read "Authentic Learning for the 21st Century: An Overview," which explores how to use authentic projects—or projects with real-world significance—to develop students' 21st century skills. They respond to the reflection questions that follow.

Unit 10: Article: "21st Century Learners—and Their Approaches to Learning"

Participants read "21st Century Learners – and Their Approaches to Learning," an article that argues why and how 21st century learning environments need to change to help students achieve 21st century skills. They respond to the reflection questions that follow..

Unit 11: Article: "EduGames—Video Games, Virtual Worlds and Education—An Overview"

Participants read "EduGames—Video Games, Virtual Worlds and Education—An Overview," which explores types of technological games available to classroom teachers to expand students' skills. They respond to the reflection questions that follow.

Methods of Instruction

- Videos (presentations consisting of lecture, interviews, and classroom footage)
- Readings
- Reflection questions (open-ended questions at intervals throughout the video presentations where participants are asked to reflect on the course content, their own practice, and their intentions for their practice)
- Quizzes (selected-response quizzes to assess understanding of the video presentations)
- Discussion forum (prompts after each unit that engage participants in online dialogue with their cohorts)
- Midterm (a project intended to get teachers to begin to develop their practice by putting to work in the classroom what they have learned)
- Final (a project that enables educators to reflect on their practice and assess their students' work through the lens of what they have learned)

Plagiarism Policy

KDS recognizes plagiarism as a serious academic offense. Plagiarism is the passing off of someone else's work as one's own and includes failing to cite sources for others' ideas, copying material from books or the Internet (including lesson plans and rubrics), and handing in work written by someone other than the participant. Plagiarism will result in a failing grade and may have additional consequences. For more information about plagiarism and guidelines for appropriate citation, consult plagiarism.org.

Percentage of Course Credit

- Reflection questions   25%
- Quizzes   15%
- Midterm   25%
- Final   35%

In order to complete the requirements of the course, the participant must complete all course work (e.g., reflections, quizzes, and any midterm and/or final), including watching all videos and participating in all discussion forums. We do not award partial credit.

Grading Policy

A: 3.4 – 4.0
B: 2.7 – 3.3
C: 2.0 – 2.6
F: >2.0

Reflection/Quiz Rubric

Activity	Distinguished (4)	Proficient (3)	Basic (2)	Unsatisfactory (1)
Quizzes	90-100%	80-89%	70-79%	69% or below
Reflection Question	Participant has provided rich detail and supporting examples from the course content. Participant has made responses to prompts personally meaningful and relevant to his or her teaching practice.	Participant has included appropriate content from the course content. Participant has made thoughtful comments in direct response to the prompts.	Participant has included little that indicates consideration and comprehension of course content. Participant has answered most questions directly but some too briefly.	Participant has included little to no content indicating consideration and comprehension of course content. Participant has not addressed the specific questions posed. Participant has not responded to all reflection questions. Participant has copied from the course transcript without synthesis or analysis.

Midterm

Jukes asserts that much of what we do in education is informed by dated and paralyzing paradigms. Brainstorm a list of such paradigms that affect what you do with your students and when. Choose one of the paradigms to explore in depth. Then, propose how to dismantle that paradigm.
For example, if you feel the day's schedule of 45 minute instructional blocks confines you and your students and limits learning, what would you propose instead and why? Use to articles to summarize to support your assertions.
Please do the following:
1. Brainstorm a list of paradigms.
2. Choose one paradigm that particularly affects your work with students and explain why you choose this paradigm
3. Propose how to dismantle the paradigm you have chosen.
4. Do a web search and find two articles to support your opinions. Consider such options as the use of technological tools and virtual learning in your solutions. Cite and summarize these two articles to support your assertions.

Midterm Rubric

Step	Distinguished (4)	Proficient (3)	Basic (2)	Unsatisfactory (1)
Brainstorm a list of paradigms.	Participant has brainstormed a rich list of at least 8 relevant and pertinent paradigms.	Participant has brainstormed a list of 5-7 paradigms.	Participant has brainstormed a brief list of 3-5 paradigms not all of which are clearly relevant.	Participant has brainstormed 0-2 paradigms and/or a list of paradigms whose relevance is unclear.
Choose one paradigm that particularly affects your work with students. **Explain why you want to dismantle it.**	Participant has chosen a paradigm and clearly and effectively illustrated how it affects his or her work with students. Participant has explained why the paradigm needs to be dismantled, focusing on its effects on his or her teaching and/or his or her students' learning.	Participant has chosen a paradigm and tried to illustrate how it affects his or her work with students. Participant has effectively explained why the paradigm needs dismantling.	Participant has chosen a paradigm but not addressed how it affects his or her work with students. Participant has explained but not persuasively why the paradigm needs dismantling.	Participant has not chosen a paradigm. Participant has not explained why the paradigm needs dismantling.

Propose how to dismantle the paradigm you have chosen.	Participant has developed a clear proposal of appropriate steps likely to be successful in dismantling the paradigm.	Participant has proposed how to dismantle the paradigm.	Participant has proposed how to dismantle the paradigm, but the proposal is not persuasive or is incomplete.	Participant has not proposed how to dismantle the paradigm.
Cite two articles to support your assertions. **Summarize how the articles support your assertions.**	Participant has incorporated and properly cited two highly relevant articles into his or her exam. Participant has indicated clearly how the two articles support his or her assertions. The articles strengthen the participant's argument.	Participant has included and properly cited two appropriate articles into his or her exam. Participant has indicated how the two articles support his or her assertions. The articles relate to the participant's argument.	Participant has either incorporated only 1 article into his or her exam or has not justified the inclusion of either or both articles. Participant has attempted to indicate how the two articles support his or her assertions. It is somewhat unclear how the articles relate to the participant's argument.	Participant has not cited any articles to support his or her assertions. Participant has not indicated how the articles support his or her assertions.
Formal issues	Participant has made no grammatical errors. Participant has organized paragraphs around clearly articulated main ideas. Participant has written in an effective and eloquent style—i.e., has varied his or her sentence structure and made careful word choice.	Participant has made a few grammatical errors. Participant has organized most paragraphs around clearly articulated main ideas. Participant has written in an effective and eloquent style—i.e., has varied his or her sentence structure though not always found the right word.	Participant has made some distracting grammatical errors. Participant has organized some paragraphs around main ideas but not others. Participant has written in a style that communicates his or her thoughts but with no marked eloquence and insufficient attention to word choice.	Participant has made multiple grammatical errors. Paragraphs are not organized around main ideas. Participant has written in a style that does not effectively communicate his or her thoughts.

Final

For this final you will choose a current project you have previously undertaken with students and revise it to incorporate the following:
1. two authentic learning tasks (i.e., to connect to the real world)

2. the use of the Internet as well as one other technological device

3. two 21st century skills (e.g., creativity, innovation, critical thinking, problem solving, collaboration or communication skills).

Please do the following:
1. Select and describe a current project as it now stands.
2. Incorporate two authentic tasks into the project. Authentic tasks are
   a. purposeful and engaging.
   b. model how people solve real problems in work and/or communities.
   c. put knowledge to work.
   d. support multiple representations and solution strategies.
   e. offer opportunities for meaningful learning and higher order cognitive thinking.
   f. result in some product, presentation or outcome as a result of the deliberations of the group and/or individual.
3. Incorporate use of the Internet into your project and justify your method of incorporation and how it enriches the project.
4. Require students to utilize another technological device in order to complete the project (e.g., a tool such as a cell phone or Web 2.0 application, like Skype or Wikipedia), and justify the value added
5. Incorporate two 21st century skills (e.g., creativity, innovation, critical thinking, and problem solving, collaboration or communication skills) into the project.
6. Implement the project with your students.
7. Whether or not you are able to implement the project, reflect on your final project in 2-3 paragraphs.
   Answer the following questions:
   a. Does the project prepare students for the world beyond school?
   b. What higher level thinking does the project promote?
   c. What would you change the next time around?

Final Rubric

Step	Distinguished (4)	Proficient (3)	Basic (2)	Unsatisfactory (1)
Select and describe a current project as it now stands.	Participant has described in illuminating detail a current project.	Participant has described a current project.	Participant has described a current project, though not with enough detail to make its substance clear.	Participant has not described a current project.
Incorporate into that project two authentic tasks	Participant has convincingly incorporated clearly authentic tasks that do or are 2 of the following: • Purposeful and engaging • Model how people solve real problems in work and/or communities • Put knowledge to work • Support multiple representations and solution strategies • Offer opportunities for meaningful learning and higher order cognitive thinking • Result in some product, presentation or outcome as a result of the deliberations of the group and/or individual	Participant has incorporated authentic tasks that do or are 2 of the following: • Purposeful and engaging • Model how people solve real problems in work and/or communities • Put knowledge to work • Support multiple representations and solution strategies • Offer opportunities for meaningful learning and higher order cognitive thinking • Result in some product, presentation or outcome as a result of the deliberations of the group and/or individual	Participant has tried to incorporate 2 additional tasks though they are not clearly authentic, and/or do or are only one of the following: • Purposeful and engaging • Model how people solve real problems in work and/or communities • Put knowledge to work • Support multiple representations and solution strategies • Offer opportunities for meaningful learning and higher order cognitive thinking • Result in some product, presentation or outcome as a result of the deliberations of the group and/or individual	Participant has not incorporated any additional tasks or the tasks incorporated cannot be classified as authentic and do not do or are not any of the following: • Purposeful and engaging • Model how people solve real problems in work and/or communities • Put knowledge to work • Support multiple representations and solution strategies • Offer opportunities for meaningful learning and higher order cognitive thinking • Result in some product, presentation or outcome as a result of the deliberations of the group and/or individual

Incorporate use of the Internet Into your project and justify your method of incorporation and how it enriches the project.	Participant has convincingly incorporated use of the Internet and has justified clearly the purpose and necessity for the use of the internet. The use of internet enriches the project.	Participant has incorporated use of the Internet and has explained his or her reasoning behind its use.	Participant has tried to incorporate use of the Internet though the justification for inclusion is in question.	Participant has not incorporated use of the Internet and/or has not included an explanation or justification for its use.
Require students to utilize another technological device (e.g., a tool such as a cell phone or Web 2.0 application, like Skype or Wikipedia).	Participant has smoothly and convincingly required students to use an additional technological device and has justified clearly the purpose and added value of the technological device.	Participant has required students to use an additional technological device and has explained the added value.	Participant has required students to use an additional technological device though the justification for that inclusion is in question.	Participant has not required students to use an additional technological device.
Work in two 21st century skills (e.g., creativity, innovation, critical thinking, and problem solving, collaboration, or communication skills).	Participant has smoothly and convincingly worked in two relevant 21st century skills: • Creativity • Innovation • Critical thinking • Problem solving • Collaboration • Communication	Participant has worked in two appropriate 21st century skills: • Creativity • Innovation • Critical thinking • Problem solving • Collaboration • Communication	Participant has tried to work in one or two skills though not persuasively or they are not one of these 21st century skills: • Creativity • Innovation • Critical thinking • Problem solving • Collaboration • Communication	Participant has not worked in any new, 21st century skills.

Whether or not you are able to implement the project, reflect on it in a couple of paragraphs. **Does it prepare students for the world beyond school? What higher level thinking does it promote? What would you change the next time around?**	Participant has written 2-3 persuasively argued paragraphs addressing how the project: • Prepares students for the world beyond school • Promotes higher level thinking Participant has addressed future modifications that would clearly strengthen the project.	Participant has written 2-3 paragraphs addressing how the project: • Prepares students for the world beyond school • Promotes higher level thinking Participant has presented future modifications.	Participant has written 1-2 paragraphs addressing how the project does one the following: • Prepares students for the world beyond school • Promotes higher level thinking Participant has presented future modifications, but their power to improve the project is not evident.	Participant has not addressed how the project does either of the following: • Prepares students for the world beyond school • Promotes higher level thinking The participant has not proposed future modifications.
Formal issues	Participant has made no grammatical errors. Participant has organized paragraphs around clearly articulated main ideas. Participant has written in an effective and eloquent style—i.e., has varied his or her sentence structure and made careful word choice.	Participant has made a few grammatical errors. Participant has organized most paragraphs around clearly articulated main ideas. Participant has written in an effective and eloquent style—i.e., has varied his or her sentence structure though not always found the right word.	Participant has made some distracting grammatical errors. Participant has organized some paragraphs around main ideas but not others. Participant has written in a style that communicates his or her thoughts but with no marked eloquence and insufficient attention to word choice.	Participant has made multiple grammatical errors. Paragraphs are not organized around main ideas. Participant has written in a style that does not effectively communicate his or her thoughts.