Διεθνές Συνέδριο για την Ανοικτή & εξ Αποστάσεως Εκπαίδευση

Τόμ. 5, Αρ. 2A (2009)

Open and Distance Education for Global Collaboration & Educational Development

The Use of Multiple Intelligence, Humor, and Technology in the College Composition Classroom: A Practical Approach

Katerina ANDRIOTIS

doi: 10.12681/icodl.449

The Use of Multiple Intelligence, Humor, and Technology in the College Composition Classroom: A Practical Approach

Katerina ANDRIOTIS

St. Joseph's College
Dean of Arts and Sciences
Kandriotis-baitinger@sjcny.edu

Abstract

Since learning environments in the college classroom are mostly instructor designed and directed, the drive to devise and implement instruction technologies, strategies, and materials that would address all students' learning needs, through the use of humor, utilizing Howard Gardner's paradigm appears exceedingly promising. Gardner's theory has aided in dispelling certain myths regarding the perception of learning and intelligences. The most significant point Gardner has made, however, deals with an individual's capacity to develop his/her intelligences well beyond biological abilities and regardless of cultural or environmental circumstances. As a result, through the use of both humor and Gardner's paradigm, heightened understanding in students' learning abilities and perceptions is noted. This type of instruction serves as a fertile ground that nurtures competent learners, in charge of their lives and education.

Introduction

The "One-Size-Fits-All" outdated instructional model does not apply to our students anymore. According to Walter McKenzie, in fact, many students' approach to learning requires tools that they do not possess. In other words, "If the only tool you have is a hammer, everything around you looks like a nail . . ."(McKenzie, 1996). Current learning theory confirms that students today have a wide range of intellectual abilities and competencies that cannot be measured or quantified on any standardized test. Clearly, testing measures students' problem-solving, linguistic, logical-thinking abilities, yet it (especially multiple choice) excludes a large number of students from being successful. That is to say, through current testing methods and procedures, primary, secondary, and higher education institutions practice an exclusive pedagogy that caters to a fairly small number of students whose primary intelligence is either logical/mathematical or verbal/linguistic. However, all-inclusive pedagogy ought to address and accommodate the various intelligences under which the majority of our students operate. Moreover, once this paradigm is coupled with online instruction and humor, the results can be very rewarding for students and faculty alike.

In fact, Howard Gardner, a Psychologist and Co-Director of Harvard University's "Project Zero," the mission of which is to "understand and enhance learning, thinking, and creativity in the arts, as well as humanistic and scientific disciplines, at the individual and institutional levels," through extensive research on human intelligence, discovered that human beings have "Multiple Intelligences" (See Project Zero). At first, Gardner

clearly documented seven multiple intelligences which learners may utilize to gain knowledge and then added two additional intelligences (Gardner, 2000; Wilson, 1998):

- Verbal/Linguistic (makes use of the spoken and written word)
- Logical/Mathematical (makes use of numbers, calculations, logic, classifications, and critical thinking)
- Spatial (makes use of visual aids, visualization, color, art, and metaphor)
- Bodily/Kinesthetic (makes use of the whole body and hands-on experience)
- Musical (makes use of music, environmental sounds, and sets key points in a rhythmic or melodic pattern)
- Interpersonal/Social (makes use of discussion, cooperative learning, and large group simulation)
- Intrapersonal/Self (makes use of one's ability for self-reflection, as expressed in journal writing, computer work, brainstorming sessions, and guided imagery tours)
- Naturalistic (makes use of students' love and understanding of nature as expressed in classifying and system building)
- Existential (makes use of students' ability to conceptualize and philosophize deeper questions regarding human existence) (Garner, 1983 & 2000)

McKenzie, in fact, following this paradigm, recognizes that

Gardner's multiple intelligences theory challenges us to look beyond our available technologies and stay focused on the fact that we are teaching people rather than teaching information. As we become even more aware of the paths to learning, we are even more in need of vehicles to accommodate all these different modalities in the classroom . . . in the Information Age, we have technologies evolving, even as we speak, that hold new promise to reach all learners. (2002)

Additionally, Gardner (1983) explains that multiple intelligences in context can yield true, authentic learning. Transforming the curriculum, through hands-on, all inclusive pedagogy, can only produce positive results even for those students who have been left behind, have been ignored, or simply have been labeled learning disabled. The only option for educators is either to nurture and strengthen their students' intelligences or ignore them and allow them to deteriorate. As a result, Gardner does not ask, "How smart am I?" But rather, he asks, "How am I smart?" As far as he is concerned, there are no more or less intelligent students. There are simply differently able students. That is to say, all students are intelligent, each in a different way. Absorbing course material can be different and unique for students based on this model. Hence the reason multiple intelligences and distance learning go hand-in-hand. For example, desktop and web-based publishing can be very effective learning tools for the verbal/linguistic learner. Furthermore, email can be another tool that verbal/linguistic learners can use to further develop their learning style. For the logical/mathematical learner, analyzing data, using search engines to run queries or use various online platforms to problem solve can be very effective as well. The visual/spatial learner can benefit from various technological tools, such as PowerPoint slide shows, charting and graphing, utilizing online platforms and editors, and even digital animation. Stimulating the bodily/kinesthetic learner through technology and web-based application is quite easy. Diagramming, videoconferencing, sorting various materials by attributes, and participating in virtual group simulations can be some of the activities available to the bodily/kinesthetic intelligence.

Incorporating digital sounds into PowerPoint/multimedia presentations can easily accommodate the musical intelligence. The intrapersonal learner can work with answers to guided questions posted on the discussion section of the course (Blackboard, WebCT), whereas the interpersonal intelligence can be stimulated by group discussion either synchronous (chat-rooms) or asynchronous (email, discussion boards), and various collaborative projects. The naturalist learner works well with organization. As a result, organizing and making sense of information, through the creation of databases or semantic mapping, benefits this intelligence. Finally, the existential intelligence can be stimulated through learning experiences that examine the "big picture" of learning. In this case, virtual communities can help the existential learner feel like he/she belongs to something larger than family, community or classroom. Virtual art exhibits and virtual field trips can also help in experiencing the beauty that surrounds the existential learner (see McKenzie, 2002).

In other words,

Designing instruction for learner populations who choose to learn at some distance from a traditional classroom presents an opportunity to effectively apply Howard Gardner's Theory of Multiple Intelligences through the general design of course content, the use of specific instructional activities, general communication, and improved participant interaction. The appropriate use of these eight intelligences will also increase the likelihood that the learner will retain new knowledge and remain an active learner during the entire instructional process. Finally, incorporating multiple intelligence theory into the design of instruction can provide multiple avenues for learning based on an individual's preferred style regardless of the discipline or the geographic dispersion of the intended learners. (S. Y. Osciak & W. D. Milheim, 2001)

Dr. Sheryl Asen (1992) has identified ten criteria for the use of technology in traditional as well as online instruction. The benefit of using these criteria in conjunction with the Multiple Intelligences paradigm to create and organize instruction is clear.

- Students are involved in tasks that are broad in scope and challenging. Activities should span a range of related, intellectually demanding experiences that are not divided into fragmented talks. (Existentialist)
- Students, rather than the teacher, have control over the learning. The teacher serves as more of a guide, coach, and resource rather than a superior or administrator. (Intrapersonal)
- Students work collaboratively and cooperatively. Learning tasks should not be accomplished in social isolation (Interpersonal)
- Students practice and apply communication skills during learning. Learning tasks should promote questioning, discussion, and interaction. (Verbal/linguistic)
- Students participate in varied learning tasks. This includes both variations in the format of the activities and their objectives. (Musical, kinesthetic)
- Students have opportunities to address learning tasks in different ways. Different approaches to a presented activity can be explored. (Naturalistic)
- Students learn and apply higher order thinking skills through problem solving tasks and reflection. Activities do more than ask students to recall rote facts, terms and definitions. (Logical/mathematical)

ϖ Students are encouraged to offer varied solutions to a given problem. Reasoned answers and appropriate products are not limited to pre-set responses. All justifiable and fitting answers and products are accepted. (Visual/spatial)
ϖ Students are encouraged to contribute personal ideas and experience to the learning task. Students' input into the learning process is valid and valued. (Intrapersonal)
ϖ Students are intrinsically motivated by the prescribed learning tasks. Accomplishing the task is rewarding on its own merits regardless of the technologies being used. (Existential)

According to the Multiple Intelligences paradigm, models of teaching are really models of learning (Joyce & Weil, 1996). Furthermore, teaching and learning cannot be shaped through a fixed, rigid "modus operandi." For if that is the case, educators may find themselves in an uncertain predicament: learning may become programmed and inflexible with no possibility of change and growth. This may be achieved only if education is not entirely the teacher's responsibility, but rather it is an alliance between student and teacher. As a result, for both student and teacher, learning cannot be a passive activity, unless the student is able to become his/her own assessor, learner, and investigator. In other words, students must actively participate in their learning, for even the greatest teacher cannot individually generate or promote student success (O'Brien, 1998), but collaboratively, "a good teacher can provide a rewarding educational experience" (M. Riha & R. Robles-Pina, 2009). Interestingly, Gardner maintains that learning is both a social and a psychological process. As a result, when students understand the balance of their own multiple intelligences, they begin to manage their own learning and value their individual strengths (Gardner, 1989).

Discussion

I have been teaching writing and literature for the past thirteen years both online and in the traditional setting. When it came to composition, however, until a few years ago, I thought that my extensive training and experience in teaching composition had prepared and qualified me to be an effective teacher. Like many of my colleagues who were schooled in traditional composition theory, I called attention to errors in content, spelling, sentence structure, syntax, and punctuation. That is to say, I placed heavy emphasis on grammar, mechanics, and usage. Never once did I question the focus on error that although quantifiable and measurable, is nevertheless, "A mechanistic paradigm" (Rose, 1995). This practice defines "language growth as the accretion of these particulars" (Rose, 1995). Furthermore, my approach to teaching writing as a skill, even though I emphasized the writing process rather than the product, only added to boring, stress-laden, resented writing classes.

Teaching writing as a "technique" rather than "an integrated body of knowledge," clearly, does not work (Rose, 1995). When I realized the depth of a favorite phrase I often used in my writing classes, "Practice makes perfect," I was shocked. I found myself viewing writing as a skill, which essentially "reduces the possibility of perceiving it as a complex ability that is continually developing as one engages in new tasks with new materials for new audiences" (Rose, 1995). That certainly is not to say that there are no skills involved in the teaching of writing. Rather, the skills approach cannot be the

solitary driving force in the writing classroom. Since then, I have learned that even the most error-laden student papers express a profound wisdom, an insight illuminating, among other things, personal style, cultural experience, personality, and intellectual development. Moreover, additional research on learning styles and Howard Gardner's Multiple Intelligence paradigm produced a great deal of information on the importance of flexibility in teaching, accommodating students' learning styles, providing a fertile ground for writing by espousing personal styles, in other words approaching writing as an integrated body of knowledge that includes, but is not limited to, skills acquisition.

Adjusting and applying my research to suit my students' needs created yet another challenge. Beginning with the inclusion of technology for both online and traditional classes (colorful, multimedia PowerPoint presentations, Internet and database research, email, chat-rooms, video, audio, and student presentations), followed by extensive discussions both online and in the classroom to hone critical thinking skills (assigned and otherwise points of view for certain controversial/persuasive issues), seemed to unveil an enthusiastic student body. Additionally, ample use of clearly defined hand-outs, group work, writing workshops and labs, including peer-editing, various student presentations on particularly difficult points, guided journal writing, production of multiple ungraded drafts, and electronic portfolio submissions enabled students to take charge of their learning and directly contribute to positive learning outcomes.

Today, whether online or in the traditional setting, my students are encouraged to find their strengths, by taking a Multiple Intelligence assessment. There are several assessments that can be located in numerous books and on the Internet. I have found that the assessment offered through the Literacy Works website is one of the best. Computerized scoring is available at the conclusion of the 56-question assessment, and the students' top three Multiple Intelligences are listed with ample explanation and practical studying tips.

In addition, I have found that incorporating humor whether online or in the traditional classroom, puts even the most reluctant of students at ease. Clearly, when dealing with students who are relaxed and willing to learn, the teacher's job becomes much easier. Research has shown that teachers who "use written language that includes humor and metaphor," deal with better learning outcomes in the traditional classroom and online (Gibbs & Fewell, 1996). However, it is very important to be as clear as possible when using humor, especially online. In fact, Gibbs and Fewell suggest, "If the instructor must interject humor and wants the students to know that the communication was an instance of humor, the use of an emoticon, such as a smiley or frowning face, would be in order" (1996). Humor, in fact, creates a sense of community among online students.

Conclusion

Ian J. McCoog, in his essay, "Integrated Instruction: Multiple Intelligences and Technology," affirms "Multiple Intelligence and technology blend in the modern, changing environment of education. To compete in the world marketplace, today's students must acquire twenty-first century skills, such as global awareness and social responsibility. Technology allows these skills to be presented" (2007). Furthermore, Joel Goodman, in Laffirmations, declares that nothing relieves stress better than a good hearty

laugh. Laughing at ourselves and not take ourselves so seriously benefits us, and everyone around us. Goodman suggests,

Take a humor break. Find and tell some good jokes. Ask someone to help you laugh. Supply funny noses, glasses, noisemakers, etc. Read a cartoon or joke book. Watch a comedy; ask a friend to join you. Just enjoy all the stuff that comes your way. If you are facing deadlines at work and don't want to be interrupted, post a sign on your door (or on your back if you don't have a door) that reads: "Don't disturb me—I'm disturbed enough already!" (Goodman, 1995)

It must be emphasized that this is not about simply changing teaching methods; it is not an exercise in methods. It is about caring for our students as individuals and about our willingness to lend a helping hand; perhaps it is about becoming the guiding light in their journey. Being conscious of teaching methods, flexible in the use of teaching materials, and understanding and accommodating to students are the key components in fostering student learning in a productive culturally diverse and all inclusive writing classroom. Encouraging students to take control of their learning by making them aware of their primary intelligences can make a great deal of difference in their educational experience. At the same time, exposing students to Gardner's Multiple Intelligence paradigm can only benefit the college classroom and higher education in general. Perhaps then, those students who never anticipated to be college graduates because of their inability to conform to traditional logical/mathematical and linguistic models will achieve success and look forward to a bright future as college graduates. At the least, educators must give Gardner's Multiple Intelligence model a chance. For as Parker Palmer, in his book, The Courage To Teach, eloquently describes, teachers

. . . are truly present [whether] in the [traditional] classroom [or online], deeply engaged with their students and their subject. They are able to weave a complex web of connections among themselves, their subjects, and their students, so that students can learn to weave a world for themselves. The connections made by good teachers are held not in their methods but in their hearts--the place where intellect and emotion and spirit and will converge in the human self. (1998)

References

Books

Asen, S. (1992) 'Teaching and learning with technology', Alexandria, VA, Association for Supervision and Curriculum Development

Berk, R. (2003) 'Professors are from Mars, students are from snickers', Sterling, VA, Stylus

Berk, R. (2003) 'Humor as an instructional defibrillator: evidence-based Techniques in teaching and assessment', Sterling, VA, Stylus

Brown, G. (1988) 'Effective teaching in higher education', New York, Methuen

Brundage, D. (1980) 'Adult learning principles and their application to program planning', Toronto, Ontario Institute for Studies in Education

Dewey J. (1916) 'Education and democracy', New York, Macmillan

Dewey J. (1938) 'Experience and education', London, Collier, Macmillan

Gardner, H. (2000) 'Intelligence reframed: multiple intelligences for the 21st century', New York, Basic Books

Gardner, H. (1983) 'Frames of mind: the theory of multiple intelligence', New York, Harper Collins Publishers

Goodman, J. (1995) 'Laffirmations: 1,001 ways to add humor to your life and work', New York, Health Communications
Joyce, B. (1996) 'Models of teaching', Needam Heights, MA, Allyn & Bacon
Knowles, M. S. (1975) 'Self-directed learning', New York, Association Press
Knowles, M. S. (1980) 'The modern practice of adult education', New York, Association Press
Lave, J. (1991) 'Situated learning: legitimate peripheral participation', New York, Cambridge University Press
O'Brian, G. D. (1998) 'All the essential half-truths about higher education', Chicago, The University of Chicago Press
Palmer, P. (1998) 'The courage to teach: exploring the inner landscape of a teacher's life', San Francisco, Jossey-Bass Publishers
Peyton, J. K. (1991) 'Writing our lives: reflections on dialogue journal writing with adults learning English', Englewood Cliffs, NJ, Prentice Hall
Rogers, J. (1989) 'Adults learning', Philadelphia, PA, Open University Press
Rose, M. (1995) 'Possible lives: the promise of public education in America', New York, Hughton Mifflin
Smith-Burke, T. (1987) 'Starting over: characteristics of adult literacy learners', New York, Literacy Assistance Center
Wright, W. A., ed. (1994) 'University teaching and learning: an instructional resource guide for teaching assistant at Dalhousie University', Canada, Dalhousie University
Zamel, V., ed. (1998) 'Negotiating academic literacies: teaching and learning across languages and cultures', New Jersey, Lawrence Erlbaum Associates

ESSAYS AND ARTICLES

Eisenhart, M., Behm, L., Romagnano, L., (1991). 'Learning to teach: developing expertise or rite of passage'? Journal of Education for Teaching, 17, pp. 51-71
Fagan, W. T., (1988). 'Concepts of reading and writing among low-literate adults'. Reading Research and Instruction, 27, pp. 47-50
Feiman-Nemser, S., Buchmann, M., (1987). 'When is student teaching teacher education'? Teaching and Teacher Education, 3, pp. 255-273
Gambrell, L. B., Heathington, B., (1981). 'Adult disabled readers' metacognitive awareness about reading tasks and strategies'. Journal of Reading Behavior, XIII, pp. 215-221
Gardner, H., (1995). 'Multiple intelligences as a catalyst'. English Journal, 84, pp. 16-18
Griffin, P., Cole, M., (1982). 'Locating tasks in psychology and education'. Discourse Processes, 15, pp. 115-126
Henschke, J. A., (1998). 'Modeling the preparation of adult educators'. Adult Learning, 9, pp. 11-14
Hughes, H., (1997). 'Dialogic reflection and journaling'. Clearing House, 70, pp. 187-191
Imel, S., (1994.) 'Guidelines for working with adult learners'. ERIC Digest, 154, pp. 1-5
Kennedy, M., (1987). 'Inexact sciences: professional education and the development of expertise'. Review of Research in Education, 14, pp. 133-167
Knowles, M. S., (1991), 'Introduction: the art and science of helping adults learn', in Andragogy in Action: Applying Modern Principles of Adult Learning, Editor: M. S. Knowles, San Francisco, Jossey-Bass
McCoog, I. J., (2002). 'Integrated instruction: multiple intelligences and technology'. Heldref Publications: The Clearing House (September/October), pp. 25-28
McKenzie, W., (2002). 'Media selection: mapping technologies to intelligences', Virginia Society for Technology in Education, Retrieved on 24 July, 2009 from http://www.vste.org
Mertz, N., McNeely, S., (1990). 'How to teach: teacher cognitions, teaching paradigms and higher education'. Paper presented at the Annual Meeting of the American Education Research Association, Boston, MA
Osciak, S. Y., Milheim, W. D., (2001). 'Multiple intelligence and the design of web-based instruction'. International Journal of Instructional Media, 28, pp. 355-361
Peyton, J. K., (1993), 'Listening to student voices: publishing student writing for other students to read', in Approaches to ESL Literacy Instruction, Editors: J. Crandall and Associates, Washington, DC, CAL and Delta Systems

Riha, M., Robles-Pina, R. A., (2009). 'The influence of multiple intelligence theory on web-based learning'. MERLOT Journal of Online Learning and Teaching, March, pp. 97-103
Roskos, K., Walker, B. J., (1994). 'Learning to teach problem readers: instructional influences on pre-service teachers' practical knowledge'. Journal of Teacher Education, 45, pp. 279-289
Shaughnessy, M., (1987), 'Basic writing', In Teaching Composition: Twelve Bibliographical Essays, Editor: Gary Tate, Fort Worth, TX, Texas Christian University Press
Sweet, R., (1994). 'Distance education for adult learners'. Canadian Journal for the Study of Adult Education, 14, pp. 1-26
Wilcox, S., (1996). 'Fostering self-directed learning in the university setting'. Studies in Higher Education, 21, pp. 165-177
Zeichner, K., Tabachnick, R., (1985). 'The development of teacher perspectives: social strategies and institutional control in the socialization of beginning teachers'. Journal of Education for Teaching, 11, pp. 1-25

Internet resources

Accelerated Learning Network. (2003). 'Exploring the theory of multiple intelligences', Retrieved on 18 October, 2004 from http://www.accelerated-learning.net/multiple.htm
Armstrong, T. (1998-2000). 'ADD/ADHD alternatives in the classroom', Retrieved on 20 October, 2004 from http://www.thomasarmstrong.com/multiple_intelligences.htm
Baran, D., Baran, P. (2003). 'Multiple intelligence information', Retrieved 18 October, 2004 from http://www.igs.net/~cmorris/smart-options.html
Barking Spider. (1998). 'Humor resources', Retrieved 20 October, 2004, from http://www.winn.com
CBS. (1990). 'Late show with David Letterman', Retrieved on 24 September, 2004 from http://www.cbs.com
Chen, J. (1997). 'American Educational Research Association', Retrieved on 20 November, 2004 from http://www.personal.kent.edu/~mi_sig/
Engrish.com. (2003). 'Humor resources', Retrieved on 10 November, 2004 from http://www.engrish.com
Gardner, H. (2003). 'Project Zero. Harvard University School of Education', Retrieved on 10 November, 2004 from http://pzweb.harvard.edu/PIs/HG.htm
Gardner, H. (1996). 'Cracking open the IQ box', The American Prospect Online, 7, Retrieved on 20 November, 2003 from http://www.prospect.org/authors/gardner-h.html
Harvey, F. (2004). 'NCSALL National Center for the study of adult learning and literacy', Retrieved on 20 November, 2003 from http://www.gse.harvard.edu/~ncsall/research/index.html
Goodman, J. (2003). 'The humor project, Inc., Retrieved on 10 April, 2004 from http://www.humorproject.com
McKenzie, W. (1996). Walter McKenzie's multiple intelligence pages, Retrieved on 20 November, 2004, from http://surfaqu arium.com/MI/
Morris, C. (2002). 'Best way to study', Retrieved on 20 November, 2003 from http://www.igs.net/%7Ecmorris/best_way_to_learn.html
Shearer, C. (1999-2004). 'Multiple intelligences developmental assessment scales, Retrieved on 18 November, 2003 from http://www.angelfire.com/oh/themidas/index.html
Shelton, L. (1991-92). 'Multiple intelligences for adult literacy and education, Retrieved on 20 November, 2003 from http://literacyworks.org/mi/home.html
Templeton, Brad. (1987). 'Rec.Humor.Funny', Humor resources, Retrieved on 10 April, 2004 from http://www.netfunny.com
Vancouver English Center. (2002). 'Language humor', Retrieved on 10 April, 2004 from http://www.english-usa.net/humor-jokes/
Weber, E. (1995). 'MITA's five phases for renewed higher education', New Horizons for Learning, Retrieved on 18 November, 2003 from http://newhorizons.org/lifelong/higher_ed/weber2.htm
Weber, E. (1995). 'Five phases to PBL: MITA (Multiple Intelligence Teaching Approach), model for redesigned higher education classes", Retrieved on 18 November, 2003 from http://newhorizons.org/lifelong/higher_ed/weber2.htm
Wilson, L. (1998). 'The eighth intelligence: naturalistic intelligence', Retrieved on 14 January, 2005 from http://www.newhorizons.org/strategies/environmental/wilson2.htm

Online assessment tools

Armstrong, T. (1994). Multiple intelligences test, Retrieved on 18 November, 2003 from http://www.spannj.org/BasicRights/appendix_b.htm#test

McKenzie, W. (1996). Multiple intelligences survey, Retrieved on 20 November, 2003 from http://surfaquarium.com/MI/MIinvent.htm

Morris. C. (2003). Smarter: a many intelligences indicator, Retrieved on 20 November, 2003 from http://www.igs.net/~cmorris/smarter-11-19-03.html

Multiple intelligence assessment. (1995). Find your strengths. Online assessment, Retrieved on 20 November, 2004 from http://literacyworks.org/mi/assessment

Multiple intelligence development assessment scales (MIDAS Information). (1996), Retrieved on 18 November, 2003 from http://www.angelfire.com/oh/themidas/themidas2.html

Multiple intelligence assessment. (2000). Accelerated learning, Retrieved on 18 November, 2003 from http://www.accelerated-learning.net/learning_test.html

Multiple intelligence assessment. (2005). Canada: Job Workers Training and Careers, Retrieved on 18 November, 2003 from http://www.jobsetc.ca/toolbox/quizzes/mi_quiz.do?lang=e

Multiple intelligence indicator. (2004). Smarter: a many intelligences indicator, Retrieved on 20 November, 2003 from http://www.igs.net/~cmorris/smarter-11-19-03.html

Multiple intelligences teacher inventory, Retrieved 20 November, 2003 from http://jeffcoweb.jeffco.k12.co.us/high/wotc/confli3.htm

Seven intelligences checklist. (1997), Retrieved on 20 November, 2003 from http://www.mitest.com/o7inte~1.htm