Pedagogical significance of wikis: Towards gaining effective learning outcomes

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Many researchers argue that pedagogies centred on typical face-to-face content delivery methods are not compatible with the learning preferences of the Net-Gens who grow up in constant contact with digital media. Further, "virtual" learning methods (i.e., Web 2.0-based methods such as wikis, weblogs, and social networks) should be integrated into the usual content delivery methods to achieve the desired learning outcomes of Net-Gens. In this paper we build on the arguments for the versatility of the Web 2.0-based methods in fostering a collaborative learning environment. To do this, we integrated student-generated wikis into an undergraduate International Marketing course and examined subsequent learning outcomes and other pedagogical implications.

A qualitative research methodology supported by the NVivo data analysis software was employed. An analysis of the student-generated wikis, the reflections of the students, as well as in-depth interviews with the teaching panel of the course informed the findings of the study. The findings are organised into six themes: (1) *Collaborative learning, (2) Independent thinking and shaping it (3) "Organic" discussions (4) Laggards and leaders in wikis (5) Repetitions causing stagnations and (6) Not everyone on board.* These findings are useful in guiding the future use of wikis in higher education and extending the existing theoretical frameworks of wiki pedagogies.

Key words: Wiki pedagogy, Learning outcomes, Net-Gens

Introduction

Students entering universities today have grown up in a digital culture. These students are commonly referred to as the Net Generation (Net-Gen) (Kennedy et al., 2009). They are individuals who have been in constant contact with digital media (Jones et al., 2010). Net-Gens are considered to have unique skills and approaches in undertaking higher education (Oblinger & Oblinger, 2005; Webb, 2009). Amongst other preferences, Net-Gens expect to be able to choose what, where, and how they learn (Oblinger & Oblinger, 2005; Pletka, 2007). This is a different learning approach from the conventional, teacher-centred approach, which is predominantly focused on lecture delivery methods in a classroom setting.

With their unique learning approach, Net-Gens tend to use widely available information and acquire knowledge from a variety of sources beyond the classroom. This tends to pose significant teaching and learning challenges in regards to fostering an effective learning environment (Oblinger & Oblinger, 2005; Pletka, 2007). For example, when learning about a particular subject matter, a Net-Gen student could be more interested in searching the web to find the latest information about it than engaging in a class activity. In this paper we build on recent findings in the literature showing that the usual content delivery mechanisms such as face-to-face delivery methods are not compatible with the learning approaches of the Net-Gens (e.g., Beyers, 2009; Conklin, 2012; Fang, 2009; Geist, 2011). We argue that the pedagogical approaches adopted in teaching Net-Gens should be modified.

Net Gen, Web 2.0 Technology and Wikis
Pedagogical modifications aiming at effectively engaging Net-Gens feature in the current literature. Some of the modifications include adding videos, video games and simulations (De Freitas, 2006; Fu et al., 2009) and adding search engines and animated library databases that are image-based and interactive (Webb, 2009). Wireless devices (cell phones as clickers, laptops and ipads) have also been incorporated as part of instruction (Fang, 2009; Geist, 2011). It is argued that these modifications produce positive learning outcomes through enhancing the level of engagement of Net-Gens (Pletka, 2007; Webb, 2009).

According to some researchers, incorporating Web 2.0-based methods into pedagogy seems to yield the most convincing results (Dawley, 2009; McLoughlin & Lee, 2010; Oblinger & Oblinger, 2005; Thogersen, 2008; Windham, 2005). Incorporating interactive media, especially weblogs, social networks, podcasts and wikis into pedagogy has been a slow but inexorable trend in higher education. However, despite the arguments for the application of Web 2.0 in enhancing Net-Gens' engagement interaction and collaboration in the classroom, the novelty of using this technology seems to prevent widespread use.

Comprehensive reviews of how effectively wikis enhance teaching and learning experience appear in the literature (e.g., Butcher & Taylor, 2008; Choy & Ng, 2007; Parker & Chao, 2007; Ruth & Houghton, 2009). Several researchers, however, claim that there is a lack of research that investigates the pedagogical implications of the interactive media such as wikis (e.g., Baltzersen, 2010; Elgort et al., 2008; Ruth & Houghton, 2009; Slotter, 2010). Further, whilst some researchers claim that the pedagogical implications of wikis tend to be

ignored in teaching research (Ruth & Houghton, 2009), others claim that existing research focuses more on technical aspects of wikis rather than their pedagogical implications (Oren et al., 2006; Tazzoli et al., 2004). A focus on the latter is therefore timely.

Ruth and Houghton (2009) argue that the incorporation of wikis into the learning environment requires a different way of thinking, learning and knowing than conventional learning and teaching approaches. As such, the researchers call for more research on better understanding how to incorporate "wiki thinking" into conventional curricula. This is because wikis challenge the core assumptions of curricula design. Further, although more recent research focuses on the use and functionality of wikis in curricula design (i.e., Craig et al., 2010; Popescu & Manafu, 2011), there is a paucity of research on the pedagogical implications of wikis. This study focuses on this issue.

With the support of a Learning and Teaching Innovation Grant 2011 from the Faculty of Business and Enterprises, Swinburne University of Technology, we integrated wikis into an existing course of International Marketing. The current study explores the effectiveness and pedagogical implications of integrating wikis into the curriculum and the subsequent learning outcomes of the group of Net-Gens who enrolled in the course. The research problem of the study is: "What are the learning outcomes and pedagogical implications arising from the use of wikis?" This paper is organised into six sections. The next section includes four sub-sections, and provides a review of existing research on wikis. The third and the fourth sections explain the study design and the methods employed respectively. The findings of the study are presented in the fifth section. The final section provides a discussion of the findings, and concluding comments.

Literature review

Wiki pedagogy

Wikis are described by Wheeler et al., (2008, p.989) as an 'architecture of participation'. A wiki is a website which enables its users to collaboratively add new information into or edit its existing information (Buffa & Gandon, 2006; Buffa et al., 2011; Chao, 2007; O'Neill, 2005; Parker & Chao, 2007). Ward Cunningham, who started the world's first wiki in 1995, is considered the father of wikis. Leuf and Cunningham (2001) defined wikis as a freely expandable collection of interlinked web pages that are subject to the editing of their users. Probably the simplest and hence commonly-used description of wikis in the literature is based on the word "wiki" which means "quick" in the Hawaiian language—i.e., a quick and easy ways to create and edit websites (Buffa et al., 2011).

According to Bartolomé (2008, p.4), the key features of wikis are collaborative productions, process logs and pages under construction. Buffa and Gandon (2006) claim that since wikis function as social-oriented websites, they are different from usual IT-enabled learning platforms such as Blackboard. Although the usual platforms such as Blackboard facilitates student interactions to a limited extent (e.g., discussion boards), they largely act as a content delivery platform using one-way communication rather than as a participatory platform (Chao, 2007; Ruth, 2002).

Although there have been debates on the extent to which the Next-Gens use emerging technologies for learning (Kennedy et al., 2009), harnessing this emerging technology for

achieving better learning outcomes is not disputed (Pletka, 2007; Thogersen, 2008; Webb, 2009). Given the argument that curricula and pedagogies need to be reconfigured to engage Net-Gens, it is essential that educators blend Web 2.0 technology (on which interactive social networking media such as wikis and blogs operate) with actual teaching and learning methods. In terms of making sense of the pedagogical implications of these student-generated learning platforms, Parker and Chao (2007) suggest two learning paradigms that may govern wikis: the collaborative learning paradigm and the constructivist paradigm. These paradigms are discussed in the next section.

Learning paradigms of wiki pedagogy

According to Mezirow's (1996, 1997) writings on contemporary learning paradigms, pedagogies are originally governed by the assumptions of the objectivist paradigm that assumes a learning environment where what is to be learned is determined externally to the learner (knowledge is objective, not arbitrary and to be acquired logically). Later, pedagogies have been designed based on the interpretivist paradigm and then on the emancipatory paradigm. The interpretivist paradigm assumes a learning environment where the learner constructs what is to be learned through his or her mental images (knowledge is socially constructed and what is to be learned is not externally determined). The emancipatory paradigm seems to be a synthesis of the aforementioned two paradigms.

> ...the synthesis is accomplished by recognising the validity of two major complementary and interactive domains of learning; instrumental learning (learning to control the environment and others) and communicative learning (learning what one means when one communicates with others) (Mezirow, 1997, p.9).

Wikis facilitate student-student and student-teacher communications and collaborations in a free and flexible learning environment (Coley, 2008; Shovein et al., 2005; Wang & Turner, 2004). As such, it is logical to assume that wiki pedagogies are governed by the emancipatory paradigm. Further, contemporary pedagogies are changing from teacher-centred to learner-centred to group-centred approaches. Adams (2004) found that emerging wiki pedagogies are more effective in meeting the learning requirements of Net-Gens than conventional pedagogies.

Conducting a comprehensive review of wiki pedagogies, Parker and Chao (2007) stressed that wiki pedagogies are usually governed by two learning paradigms: the collaborative learning paradigm and the constructive learning paradigm. The former encourages learning through sharing knowledge whereas, the latter encourages learning through constructing knowledge. The two learning paradigms share the assumption of the emancipatory paradigm as they are all centred on interaction and communication among learning partners (student-student and student-teacher). However, the two learning paradigms may differ slightly in how they facilitate learning.

Under the collaborative learning paradigm, when students follow a curriculum which is designed on a wiki pedagogy, they work together to share knowledge (Parker & Chao, 2007). In this situation, a wiki can serve as a knowledge platform which facilitates students to share information and learn from each other (Boulos et al., 2006; Everett, 2011). For example, when a student makes a wiki contribution on a particular phenomenon (i.e., the effectiveness of per capita income as a macroeconomic indicator), the other students can edit, delete or add information related to the phenomenon.

Previous literature provides compelling evidence that wikis are an excellent way of supporting collaborative learning, peer interactions, group work, sharing, empowering and building a sense of community (Augar et al., 2012; Lipponen, 2002; Raitman et al., 2005). Specifically, Everett (2011) argued that collaborative workplace skills are a key business competency in the future. It was found that wikis contribute significantly in building such skills.

In line with the constructivist learning paradigm, when students follow a curriculum which is designed on wiki pedagogy they work together and construct knowledge (Ellis et al., 2008; Parker & Chao, 2007). For example, when a student makes a wiki contribution on a particular phenomenon (e.g., climate change), other students can edit, delete or add information related to the phenomenon. These actions are based on the students' understanding, perceptions and constructed meaning of the phenomenon.

A wiki pedagogy-based curriculum is built on an ideology of student empowerment and fosters an unstructured learning environment (Forte & Bruckman, 2007). The wiki pedagogy involves collaboration, construction/co-construction of knowledge, different approaches to learning, and different philosophical underpinnings where the authority of teachers is undermined. In line with the emancipatory paradigm, the wiki pedagogy is oriented towards constructionist and pragmatic modes of learning (Metcalfe, 2007; Ruth & Houghton, 2009).

Advantages and disadvantages of using wikis in the curriculum

Fostering a learning environment
The advantages of wikis in fostering an effective learning environment are widely debated (e.g., Cole, 2009; Elgort et al., 2008; Higdon & Topaz, 2009; Wheeler et al., 2008; Wright et al., 2011). Cole (2009) found that although wikis are used as an effective tool for information sharing among some members of the general public, they have not been developed effectively in the higher education sector. Parker and Chao (2007) also discuss several benefits of wiki pedagogy including presenting learning materials, storing them and designing collaborative learning. Facilitating collaborative learning, however, seems to be the most significant advantage of wiki pedagogy. As such, promoting collaboration, as opposed to competition, is considered one of the most important factors for the successful implementation of wiki pedagogy (Minocha & Roberts, 2008; Ruth & Houghton, 2009; Wheeler et al., 2008).

Collaborative learning
Although many studies found compelling evidence of the versatility of wiki pedagogies in facilitating collaborative learning, some researchers found little evidence of collaborative learning in higher education (Judd et al., 2010). They found that although the overall participation of students in wikis was high, only few students actively engaged in wiki learning activities and others simply made superficial wiki contributions. Several other researchers also claim that student–created content software such as wikis and blogs motivate students to engage deeply in learning as it gives them a sense of authorship (Jacobs, 2003; Williams & Jacobs, 2004). The researchers further explain that the consciousness of the existence of an audience motivates students' constructive writing, leading to collaborative learning. By contrast, it is also claimed that the student-created wikis as opposed to teacher-created wikis may not be the best source of information in a learning and teaching environment (Wheeler et al., 2008). A curriculum design that facilitates a smooth integration of wikis into regular learning activities is therefore recommended (Ebersbach et al., 2006).

Retention and learning outcomes

A comparative study on learning outcomes with and without wiki integrations found that the use of wikis enhances information retention and learning outcomes (Hughes & Narayan, 2009). A more recent empirical study also found that inclusion of wikis into learning activities enhances cooperative work, collaborative learning and hence students' learning outcomes (Slotter, 2010). Furthermore, positive dynamics, sharing, cooperation, and increased confidence have also been found to be significant benefits of wikis (Varga-Atkins et al., 2010). Wright, Park, and Cole (2011) found that the use of digital and web tools encourages students to be active participants in online educational communities. More recent studies report compelling evidence of the versatility of wikis in fostering an effective learning environment. Nevertheless, concerns remain in regards to integrating wikis into an existing curriculum. These will be discussed in the next section.

Integrating wikis into the curriculum

Redesigning a curriculum to include a wiki pedagogy poses a considerable number of challenges (Gray et al., 2010; Lazda-Cazers, 2010). Some of these challenges emanate from the students' end of the teaching-learning relationship. Kennedy et al., (2007) conducted a survey on 2588 first year students across several universities found that the frequency of using Web 2.0 technology among students is very low. Some researchers found that students have more favourable attitudes towards wiki pedagogies than teachers (Fang, 2009; Pletka, 2007). By contrast, a survey of 2000 students found that although many students are highly tech-savvy, they find it difficult to transfer this competence beyond the use of mobile telephones and emails (Kennedy et al., 2008). This survey further highlights that while some students share the Net- Gen learning preferences specifically in terms of using some hi-tech devices, this is not common among all students.

Moreover, many students find it difficult to deal with wikis as they are not familiar with these new, technology-aided learning activities, and are ambivalent regarding the potential learning outcomes (Wheeler et al., 2008). More recent studies found that the use of Web 2.0-based media such as blogs and wikis is diverse among students. They can be categorised into frequency of access to, and the use of, Web 2.0-based media. This includes: power users, ordinary users, irregular users and basic users (Kennedy et al., 2010). Whilst we agree that the use of hi-tech devices and Web 2.0-based media do vary among students, we also argue that careful integration of wiki pedagogy into the curriculum could assist in addressing these challenges.

An increasing number of studies present compelling evidence of the favourable learning outcomes of wiki pedagogies. To this end, based on the successful implementation of a wiki pedagogy, a series of actions have been recommended. These should be implemented by teachers as well as students (Lazda-Cazers, 2010, pp.193-194). It is expected that teachers: (1) learn how to use a wiki, (2) grapple with an initial feeling of loss of power over content and course, (3) establish guidelines for the creation of learning content, and (4) come up with a system for the assessment of the diverse wiki entries, as well as for the evaluation of individual wiki contributions (i.e., discussion threads, editing and proofreading). It is also expected that students: (1) use a wiki, (2) find, paraphrase, and reference appropriate sources, (3) collaborate with peers by communicating ideas and building consensus where needed, and (4) accept the openness and fluidity of wiki content by giving up ownership of individual pages. The key to successful adoption of wiki pedagogy

means being familiar with wiki technology and establishing proper checks and balances for monitoring learning when using a wiki.

Minocha and Roberts (2008) stress the importance of aligning curriculum objectives and wiki-based activities. When done well, this assists in achieving the desired learning outcomes of incorporating wikis into learning pedagogies. Further, consistent with previous research, they also stress that teachers and students should be familiar with the requirements of wiki-based activities before implementing them. This can be achieved via techniques such as early socialisation of collaborative activities, face-to-face communication and making supportive documents freely available. Choy and Ng (2007) stress that if a curriculum does not require students to work collaboratively, then the use of wikis may be problematic. The researchers also found that the extent of training provided, the organisation of the wiki pedagogy and participants' readiness for and awareness of their roles in a collaborative online learning environment are major factors that have an impact on the effective use of wikis. In a recent study reviewing key features of good practices of integrating web 2.0-based pedagogy into curricula, Gray et al., (2010) found that failure to implement well-articulated assessment strategies is one of the major weaknesses in previous applications. The alignment of learning objectives, assessment tasks and marking criteria is essential in successfully integrating Web 2.0-based-pedagogy into the curriculum.

Several considerations are important when integrating wikis into an existing curriculum. Wiki pedagogies are more suited to the emancipatory paradigm, not the objectivist-learning paradigm. Teachers should be ready to loosen the controls of the conventional teacher-centred learning environment (Lamb, 2004) and welcome the group-centred learning environment. Moreover, the successful integration of wiki pedagogy into an existing curriculum should be based on well-aligned curriculum design giving additional focus to the assessment requirements of wiki-based learning activities.

The previous sections reviewed the learning paradigms governing wiki pedagogies, the advantages and disadvantages of using wikis, and the practicalities of integrating wikis into the curriculum. In conclusion, a wiki-based curriculum tends to undermine the authority of teachers and uses a constructivist learning paradigm. The present study aims to investigate the pedagogical implications of wikis in an International Marketing subject. The next sections explain the design of the study and the method of data analysis.

Study Design: Integrating wikis into an International Marketing curriculum

The main learning objective of the curriculum is:
> ...to provide students with the knowledge to enable them to critically assess the concept of International Marketing and to evaluate how it fits within the overall corporate structure and strategy, enabling students to realise offshore opportunities for international organisations (Unit of Study Outline, 2012).

The assessment structure of the course was as follows. The total marks of 100% were allocated as 30% individual assignment (due by week 6), 30% group assignment (due by week 11) and 40% final examination (due by the end of the semester). Generally, a teaching semester consists of 13 weeks including one non-teaching week.

The individual assignment was designed with the purpose of achieving two of the learning objectives: (1) Explain how International Marketing fits within overall corporate structure and strategy, and (2) Explain how International Marketing enables organisations to realise offshore opportunities. According to Bloom's taxonomy of educational objectives (Bloom et al., 1956; Krathwohl, 2002), the above objectives belong to "simple categories" that measure knowledge and comprehension of a study phenomenon. Nevertheless, as found in previous studies, since students tend to use wikis for arranging information, sharing knowledge and more importantly collaborative learning (Elgort et al., 2008; Everett, 2011; Slotter, 2010), it was also expected that the incorporation of wikis would facilitate students in achieving the learning objectives of "complex categories" such as synthesis and evaluation (Bloom et al., 1956; Krathwohl, 2002).

The main task of the individual assignment for the subject was writing a reflective essay entitled: "The impact of a selected macro environmental incident on the international marketing practice of a selected international firm/practice". Before submitting the essay, students were required to engage in one of three wiki groups from weeks 1 to 5. The total number of students in the course was 80 and they were assigned to three wiki groups, each consisting of 20-30 students. Each wiki group was assigned a topic/scenario combining reading news items on a macro environmental incident with discussion of an international marketing practice. The three topics/scenarios are presented in the Appendix. The students were given assessment guidelines and requirements on how to engage in the wikis and then how to write a reflective essay based on using the wiki. When writing the essay, students were required to reflect and incorporate important insights that they gathered from the wikis.

Method

We employed a qualitative approach that included multiple methods to explore learning outcomes when using the wiki pedagogy. This is a triangulated research method which usually involves two or more methods, data sources, investigators and data analysis methods and it negates the negative outcomes of relying on single research method (Creswell, 2009; Johnson & Onwuegbuzie, 2004; Teddlie & Tashakkori, 2003). In the current study, we employed three research methods together with two data sources. Firstly, the content of the three student-generated wikis and the written text of 30 student assignments were analysed by using Nvivo software to identify emerging themes pertaining to wiki-based learning outcomes. Secondly, a critical incident method was employed where students were asked to describe two positive experiences and two negative experiences related to the wiki pedagogy. Thirdly, in-depth interviews were conducted with six members of the teaching panel of the course to further understand the pedagogical implications of wikis. Empirical data gathered from these primary sources informed the findings of the study.

There were 80 students enrolled in the course. They were aged between 18-27 years, 45% male and 55% female. Whilst 60% of them were international students, 40% were local students. The purpose of the content analysis of the assignments was to uncover the pedagogical implications of wiki integration as opposed to how the students performed on the assignments. From the 80 student assignments, 30 assignments were selected representing 10 assignments from each wiki group. In order to gain an in-depth understanding of the study phenomenon under investigation, the critical incident method was adopted. Student participation in this stage of the investigation was voluntary. All 80 students were asked to write their most positive and negative experiences with wikis on the submission day of the first assignment at the tutorial classes.

The content analysis was carried out as follows. Using Nvivo software, a line-by-line analysis or microanalysis was performed on the content of the three student-generated wikis and written text of the 30 student assignments. Open, axial and selective codings were assigned. Based on the similarities and differences of the codes, categories and subcategories were formed. Properties, dimensions, and the relationships among the categories were noted. Completing the analysis, six thematic categories were derived (Strauss & Corbin, 1990).

Findings

The key findings of the study are organised into six themes: (1) *Collaborative learning, (2) Independent thinking and shaping it (3) "Organic" discussions (4) Laggards and leaders in wikis (5) Repetitions causing stagnations* and *(6) Not everyone on board.* They are useful in guiding the future pedagogical use of wikis and extending the existing theoretical frameworks of wiki pedagogies.

Collaborative learning

Consistent with previous studies (e.g., Everett, 2011; Slotter, 2010), the wiki pedagogy that we applied resulted in productive collaborative learning among the students. It is evident that individual student thinking was influenced by the collective thinking that evolved through the wiki discussion. Table 1 shows excerpts from the students and illustrate evidence of collaborative learning. As explained in the previous two sections, the study design consisted of three wiki groups. Complying with the ethical research protocols of the Swinburne University of Technology, numbers were allocated to the wikis as opposed to wiki group titles. Moreover, to prevent identification, numbers were allocated to students who otherwise could be identified in respective wiki groups. The same procedure was carried out in reporting the findings derived from the student assignments and the critical incident method. For example, a quotation from W1/S6/E6 means: student number 6 from the 1st wiki group made a comment on his/her assignment/essay number 6.

Table 1: Evidence of collaborative learning

Wiki group no./ student no./ essay no.	Excerpts from the wikis and reflective essays
W1/S6/E6	'Through the collective discussion, members of the group reached….'
W1/S15/E15	'Reflecting the discussion on wiki…'
W1/S16/E16	'As mentioned in classmates' comments…'
W1/S19	'Our group formed a better opinion…'
W1/S22/E22	'Reflecting back on everyone's responses to the topic…'
W1/S24	'The wiki posts have shifted their view…'
W2/S2	'The majority of the class agreed…'
W2/S5/E5	'Progression from my wiki group suggests…'
W2/S12	'Students discussed their opinions and ideas…'
W2/S13/E13	'Looking at the situation from different perspectives presented by the classmates…'
W2/S21	'...but the class was able to continue discussion and consider each other's arguments to form a better opinion by looking at the situation from different perspectives….'
W2/S23/E23	'However, another forum member did relate these changes…'
W2/S26/E26	'After the basic research was done, the group developed major implications…'
W2/S30	'Since we start (sic) Wiki page, I observed other student's opinions and [the

	students] providing information…"
W3/S2/E2	"Based on the Wiki pages and [in] my opinion the biggest threat was…"
W3/S5	"Trying to understand the different points of view from my fellow students about…"
W3/S15/E15	"It was stated consistently throughout the wiki discussion that…"
W3/S17/E17	"What I found interesting from reading the wiki page was…"
W3/S22/E22	"It is shown by the fact[s] given in Wiki discussion…"
W3/S25/E25	"Reflecting on everyone's responses…"

As shown above, the students gained collaborative learning through wiki discussions. This can be seen from the comments in response to the critical incident questions describing the overall experience of wiki engagement. For example, student no. 19 (wiki 1) further noted that:

> Overall, despite all the different views expressed throughout the wiki page, most of the points found relevant on the topic were very convincing in argument and the class was able to continue discussion and initiate new ideas in regards to the slowing of China's economy and implications on[for] exporting firms (An excerpt from the critical incident report/ student no 19/wiki 1.)

Student no. 20 (wiki 2) commented on the collective research effort:

> As a result of our wiki discussion, I feel that our class did a good job of an (sic) initial research and data collection. This basic research seemed to continue throughout the whole 6 week period (An excerpt from the critical incident report/ student no. 20/wiki 2.)

It should be noted that, although students were advised to stop making new wiki contributions after week 5 and focus on the reflective essay writing, some students (deep learners) (e.g., student no 20 from wiki 2) continued to engage in wikis and they tended to share their views in face-to-face class interactions as well. Facilitating collaborative learning, the wikis also accommodated different opinions in one learning space. Agreeing with student no. 21 from wiki 2, (refer to table 1), student no. 23 (wiki 3) commented:

> For the past few weeks, our group has contributed different thoughts on such issues in the online wiki page. Through the collective discussion, members of the group will be able to gain specific insights and understand how business theory can be applied onto [in] practice (An excerpt from the critical incident report/ student no. 23/wiki 3.)

The majority of student responses (70%) to critical incident questions (most important positive experiences) related to the collaborative learning outcomes. They explained how wiki discussions enriched collaborative learning. Important other findings in this regard are:

> 1. Effectively communicating with students having different language and cultural backgrounds. For example, a student commented, "International students who are shy to say out their opinions can get chances to speak out" (student no. 17/wiki 2). Another student added, "[it was] a more productive group interaction due to open discussion nature of wikis" (student no. 7/wiki 2).
>
> 2. Expanding the time and space of collaboration. For example, one student commented: "Students do not have to arrange a time for meeting and have the convenience as discussion can be done at home" (student no. 3/wiki 2). Another

added: ''people [students] who miss things can easily catch up" (student no. 13/wiki 2).

Independent thinking and shaping it

Wiki pedagogies can provide adequate space to express one's opinion. For example, student no.13 (wiki 1) noted:

I learned many things and it gives me a chance to give my opinion too and it does not matter whether the comments that we are sharing is (sic) right or wrong. I would say it is a good way of learning tool. (An excerpt from the critical incident report/ student no 13./wiki 1.)

It was also clear from the data that wikis provide an opportunity for students to weigh the pros and cons of an argument and develop their own opinion. For example, another student claimed:

What the author [the student] appreciated the most is perhaps the constructive argument he found in the wiki page. For instance, while some of the contributors advocated that the Euro zone financial crisis would badly hit the economy of China, others claimed that it might not be the case, as the decrease in exports was offset by increased domestic consumption and sales in other emerging economies (An excerpt from the critical incident report/ student no.18/wiki 1.)

Collaborative thinking facilitated by the wiki also contributed to shaping independent thinking. Table 2 shows some excerpts from the students' essays that show how their independent thinking has been affected by the wiki group engagement.

Table 2: Shaping independent thinking

Wiki group no/ Student no/ Essay no	Excerpts from the reflective essays
W1/S7/E8	"What I understood from reading through the discussion was that the reason for the declining export numbers…"
W1/S17/E17	"Although I do agree with most of the points suggested and further discussed, I had different ideas that I felt further expanded…"
W1/S19/E19	"I used it as a summary of everyone's research, which helps to understand why there has been such a change…"
W1/S20/E20	"One topic that was not touched upon in the wiki was the alternative entry mode…"
W2/S24/E24	"The learning process via the wiki page is very fruitful. Sometimes there are no right or wrong answers, what matters the most is the development of independent thinking"
W2/S25/E25	"My analysis will be based upon the Group Wiki Page…"
W3/S3/E3	"At last, in this wiki page contribution, I have learned a lot and almost everything from it"
W3/S13/E13	"In week 5 of the Wiki contributions, I compiled everyone's arguments into a SWOT analysis, in order for us to see the costs and benefits of online marketing in the Middle East…"

As can be seen in the above table, some students analysed others' ideas with a view to synthesising the overall discussion (i.e., student no.13 from wiki 3). According to other students, wiki discussions changed their views relating to "one right answer" resulting in them embracing "multiple possibilities". For example, one student noted that:

> ...through the collective discussion, it contradicts the author's conservative concept of emphasising the "right" answers in learning (An excerpt from the critical incident report/ student no. 22/wiki 2.)

"Organic" discussions

The instructions given in the assignment details and the teaching panel's interventions in the wikis, both aimed at having wiki discussions unfold in a specific order. For example, it was expected that the students' initial wiki contributions would be simple in nature (definitions of relevant concepts) and then the students would move towards making contestable wiki contributions (evaluations of the concepts). However, instead of being hierarchically arranged, the wiki discussions evolved organically where the students jumped into critical assessment of the emerging issues relevant to the wiki topics. The teaching panel members observed:

> After sharing and discussing basic findings about China and its economy as well as the links to international businesses, the wiki page developed into a discussion about the best way to compensate the declining numbers of exports caused by the poor demand from the western countries in week three! (An excerpt from an in-depth interview/tutor 2.)

> Overall, despite all the different views expressed throughout the wiki page, most of the points found relevant on the topic were very convincing in argument and the class was able to continue discussion and initiate new ideas in regards to the slowing of China's economy and implications for exporting firms (An excerpt from an in-depth interview/tutor 3.)

This positive learning outcome was not expected from the wiki integration. It shows the versatility of wikis in facilitating collaborative and constructive learning.

Laggards and leaders in wikis

Results from this study confirm previous research on the diverse levels of engagement in technology aided learning activities such as wikis and blogs (e.g., Kennedy et al., 2010). In our study, whilst some students (64%) were slow to start engaging in the wiki discussions others (36%) quickly started to lead the wiki discussion. It was noted that the novelty of using wikis in a learning environment inhibited early engagement. One student noted:

> Initially when the task was presented to us, I was hesitant to contribute, as I did not fully understand what was required (An excerpt from the critical incident report/ student no. 15/wiki 1.)

> Other students waited to see the wiki contributions from multiple students and hence claimed: "when few students initially contributed, [it was] very difficult to engage" (student no. 12/wiki 2). Another student confirmed that the "initial stage of the discussion involved only few contributors" (student no. 19 wiki 1.)

In addition to the novelty of the activity and a slow wiki engagement rate, some students also found the wiki topic itself too broad:

> The first step is always the hardest. The initial stage of the discussion involved only few contributors. Partly due to the fact that the wiki page assessment is new to most of the members, the topic itself is quite broad, and for most people, including myself, it was difficult to identify the relevant topic to begin with (An excerpt from the critical incident report/ student no. 21/wiki 3.)

Despite being slow to contribute, a few students began to lead the wiki discussions and direct others' contributions appropriately. For example, student no. 7 from wiki 3 wrote: "Hey guys, this is [referring to the wiki content] not what the tutor told us to do..." Some students explained the beneficial nature of the leadership role played by spontaneous leaders. For example, one student noted:

> Initially when the task was presented to us, I was hesitant to contribute, as I did not fully understand what was required. However after Daniel [another student] stood up as the first initiator [sic], it spurred the rest of the class on to continue where he left off (An excerpt from the critical incident report/ student no. 4/wiki 3.)

Another student added:

> Despite the slow start of our discussion people got inspired to participate after I posted some general information about the global usage of internet and mobile phones (An excerpt from the critical incident report/ student no. 16/wiki 2.)

Students eventually showed heightened enthusiasm to participate in wiki discussions later on. Several teaching panel members also noted this and commented as follows:

> The wide discussion and the good participation up to the closing date of the wiki page led to an amount of more than 13,200 words and it's still growing (An excerpt from an in-depth interview/tutor 1).

Repetitions causing stagnation

A considerable number of students reported that repetitions of comments and contributions slowed down the process of the wiki discussion. One student noted that:

> The wiki page was not contributing [developing] smoothly, because when the wiki page started every contributor was writing about the same thing (An excerpt from reflective easy no. 5/ student no. 5/wiki 3.)

Several other students added similar comments, for example: "When the wiki page started every contributor was writing about the same thing" (an excerpt from the critical incident report student no.7/wiki 2). Similarly, "the wiki page has duplicated information due to many participants" (An excerpt from the critical incident report student no 4/wiki 1.)

Not everyone on board

Confirming previous research, the wikis seemed to pose certain challenges to some students as well as the teaching panel. Organised into several sub-themes, those challenges can be outlined as follows.

1. *A feeling of not having adequate details and guided instructions*

Some students (25%) were not comfortable with the emancipated structure of the wikis groups. Referring to the tutors' interventions, a student commented, "Perhaps these headings [predetermined structure] can be defined in class on day one" (An excerpt from the critical incident report student no 17/wiki 2). A tutor confirmed this: "As the topic did not have a specific question to answer, I think students found it difficult to engage in a discussion" (an excerpt from an in-depth interview/tutor 2).

This was confirmed by another student who commented:

However, it would make the learning activity [sic], Wiki discussion better supportive, if the expectations such as contexts and major topic of discussion [were] provided to us (An excerpt from the critical incident report student no 8./wiki 2.)

Several students added:

After trying to participate in the wiki this year I think for future years more strict guidelines need to be adopted on these points, and headings need to be included on the page for easier sorting of the information (An excerpt from the critical incident report student no. 11/wiki 3.)

I found it very difficult to go through all the writing and find the information I need. When I look at Wikipedia, the pages there have structure, headings and a table of contents where people can add to those existing headings or create their own and the font style and size is standard. (An excerpt from the critical incident report student no. 21/wiki 1.)

Although there were clear instructions given, a few students also found that the wikis were crowded and more specific instructions were needed:

Twenty-five students discussing a topic is a huge amount of writing, and a more defined and clear structure for the wiki page is desperately needed (An excerpt from the critical incident report student no. 12/wiki 3.)

This was confirmed by several members of the teaching panel. They noted that while some enthusiastic and deep learners seemed to make lengthy contributions, some surface learners found it difficult to contribute as it took considerable time to read previous contributions. One teaching panel member made the following point:

More interventions are definitely needed in achieving the learning outcomes as well as enhancing generic skills (An excerpt from an in-depth interview/tutor 1).

Further, despite having attended a couple of informative discussions on the wikis, some members of the teaching panel were late to intervene in the wiki discussions. The interventions were essential, especially since the wikis had a slow start because some students desperately needed more specific instructions to follow.

2. Asymmetry of knowledge and understanding about a topic among the wiki group

We found that when a large number of students are not familiar with the topic or the wiki discussion format, the effectiveness of the wiki learning outcomes is jeopardised. For example, a student commented:

The discussion on the mall versus the internet and the specific discussion on marketing practices of service providers was a topic that many of my classmates, myself included, were not familiar with and I believe that the wiki page was somewhat limited due to our lack of

cultural understanding (An excerpt from the critical incident report student no. 18/wiki 3.)

Further, according to some of the teaching panel members, managing wiki contributions from the over-enthusiastic students was difficult. Some of those students became passionate about certain wiki topics and began to dominate the wiki discussion.

3. Plagiarised material

A few students and the majority of the teaching panel members noted their dissatisfaction with having to respond to plagiarised material submitted by some students. For example, a student noted that:

> Students easily copy and paste from websites without any personal experience when doing questions in the wiki (An excerpt from the critical incident report student no. 23/wiki 3.)

From the beginning of this intervention, the teaching panel members had to trace plagiarised materials used in the wikis, remove them and correct the unwelcome behaviour of some students. This took considerable time that the panel members could have instead used more profitably in making more effective wiki contributions. One teaching panel member commented:

> Since wikis are online activities, students found it easy to read other online materials and directly quote them without giving due credit to the original authors. Not only is this highly non-academic behaviour but also I had to spend extra time to trace it down. I should have done more productive interventions than that (An excerpt from an in-depth interview/tutor 2.)

In summary, several key pedagogical implications arise from the use of wiki integrations in the curriculum. Whilst wikis largely facilitate collaborative learning they also promote independent thinking. Given that the authority of the teachers is marginalised and the authorship of students is empowered, students tended to freely express their independent opinions as well as modify their opinions as appropriate via wiki interactions. Nevertheless, wiki integrations into curricula are not without several, unique drawbacks. Although the sense of existence of an audience made some students lead wiki groups, others lagged far behind the group. Further, in the absence of timely interference by the teaching panel, wiki groups tended to engage in unprofitable and pointless discussions. These findings will be further discussed in the next section.

Discussion and concluding comments

This study explored the pedagogical implications arising from the integration of wikis into an existing curriculum of a subject in International Marketing. The research problem of the study was: "What are the learning outcomes pedagogical implications arising from the use of wikis?" This section discusses the findings of the study.

Consistent with previous research (e.g., Slotter, 2010), this study found compelling evidence that wikis facilitate collaborative learning and, moreover, students seem to enjoy it (see table 1). One of the key implications of the study is that, in addition to collaborative learning, the "organic discussions" that emerged in the wikis fostered constructive knowledge. Through collaboration, the students appeared to reach an advanced level of learning and thinking. They were able to construct new knowledge which none of them had when they first engaged in wiki discussions. In a conventional and structured classroom-setting with the close supervision of a teacher, these "organic discussions" may not have emerged due to several reasons (e.g., limited time inhibiting reflective thinking, lack of

opportunities to express one's opinion, anxiety over expressing independent views in front of an audience). We found that the wikis provide an adequate space to express one's opinion by expanding the boundaries of classroom-level engagement. As discussed in the Findings section, many international students from non-English speaking backgrounds found it easier to express their opinions through wiki discussions than in an actual classroom setting. This was a surprising finding.

Previous studies (Kennedy et al., 2007; Kennedy et al., 2008) claim that although the Net-Gens are highly tech-savvy, they find it difficult to transfer this preference beyond the use of mobile telephones and email. This could result in resistance towards new learning approaches that are technology-based. By contrast, we found that, except for a few surface-level learners, most of the students were motivated to engage in the wikis as they knew that wiki contributions and reflections on them were going to be useful in the next piece of assessment (the reflective essay). Throughout the assessment period (weeks 1-6), the students were repeatedly given specific instructions on how their wiki contributions were assessed. More importantly, it should be noted that we designed the wiki-based activities in alignment with other elements of the unit (overall aim, learning outcomes and assessment). This was done based on the recommendations of previous studies (e.g., Gray et al., 2010).

The wiki contributions made the students pre-test their ideas with fellow students before writing them in the essay (the final submission format of the assignment). This was largely a result of clear curriculum alignment. Some students began to draw conclusions by analysing the main points of the wiki pages. According to the teaching panel, the overall quality of the individual assignments was enhanced by the wiki discussions. Further, the wiki engagement enhanced the students' interactions in the classrooms as well. Overall, many students found that the wikis positively influenced their learning outcomes. Accordingly, another key implication of the study is that, in order to keep students enthusiastically engaged in wiki discussions, it is important to embed wiki-based activities into other learning activities. Understanding that there is a "spill over" effect from one learning activity to another is important.

Confirming previous research on the diverse levels of engagement in technology-aided learning (Kennedy et al., 2010), we found different levels of engagement in the wiki pages. Whilst some students eagerly initiated the wiki discussions soon after they received the instructions from the teaching panel, a few students needed to be frequently reminded to make contributions before the wiki pages were closed. It is therefore recommended for future practice, that it is important to set conditions or guidelines for wiki contributions (i.e., two wiki contributions per week).

There were a considerable number of repetitive wiki contributions made by students. These repetitions led to "stagnated" discussions. Although some members of the teaching panel frequently moderated and modified the direction of these unprofitable discussions, it was difficult to resolve heated wiki debates. However, this also signalled the high level of engagement in the activities. Another point to note is that the unfamiliarity and "newness" of wikis as a teaching tool tends to inhibit active wiki engagement by members of the teaching panel as well as students.

This study explored the effectiveness and the pedagogical implications of integrating wikis into an International Marketing subject and the subsequent learning outcomes of a group of Net-Gens. Consistent with previous research, we found that wikis facilitate

collaborative learning. Further, they enhance independent thinking and provide students with a platform to pre-test their views and opinions. More importantly, reflective thinking and writing make wiki contributors construct new knowledge. We conclude that well thought-out alignment of wiki assessments with other learning activities has the potential to engage Net-Gens.

References

Adams, A. M. (2004). Pedagogical underpinnings of computer-based learning. *Journal of Advanced Nursing, 46*(1), 5-12.

Augar, N., Raitman, R., & Zhou, W. (2012). Teaching and learning online with wikis. Retrieved 22/12/2012, from Deakin Research Online Deakin University's institutional research repository http://dro.deakin.edu.au/eserv/DU:30005482/zhou-teachingandlearning-2004.pdf

Baltzersen, R. K. (2010). Radical transparency: Open access as a key concept in wiki pedagogy. *Australasian Journal of Educational Technology, 26*(6), 791-809.

Bartolomé, A. (2008). Web 2.0 and new learning paradigms. *Elearning Papers, 8*, 1-10.

Beyers, R. N. (2009). A Five Dimensional Model for Educating the Net Generation. *Journal of Educational Technology & Society, 12*(4).

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of educational objectives: Handbook I: Cognitive domain. *New York: David McKay, 19*, 56.

Boulos, M. N. K., Maramba, I., & Wheeler, S. (2006). Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC medical education, 6*(1), 41.

Buffa, M., & Gandon, F. (2006). *SweetWiki: semantic web enabled technologies in Wiki*. Paper presented at the Proceedings of the ACM Conference Wikisym, Odense, Denmark.

Buffa, M., Gandon, F., Sander, P., Faron, C., & Ereteo, G. (2011). SweetWiki: A semantic wiki. *Web Semantics: Science, Services and Agents on the World Wide Web, 6*(1).

Butcher, H. K., & Taylor, J. Y. (2008). Using a Wiki to Enhance Knowing Participation in Change in the Teaching-Learning Process. *Visions: The Journal of Rogerian Nursing Science, 15*(1), 30-44.

Chao, J. (2007). *Student project collaboration using Wikis*. Paper presented at the Proceedings of the 20th Conference on Software Engineering Education and Training (CSEE&T 2007) Dublin, Ireland.

Choy, S. O., & Ng, K. C. (2007). Implementing Wiki Software for Supplementing Online Learning. *Australasian Journal of Educational Technology, 23*(2), 18.

Cole, M. (2009). Using Wiki technology to support student engagement: Lessons from the trenches. *Computers & Education, 52*(1), 141-146.

Coley, T. F. (2008). *Wikis in the teaching of writing: Purposes for implementation.Unpublished M.A. Thesis*. North Carolina State University. Retrieved from http://www.lib.ncsu.edu/resolver/1840.16/2803

Conklin, T. A. (2012). Making It Personal: The Importance of Student Experience in Creating Autonomy-Supportive Classrooms for Millennial Learners. *Journal of Management Education published online 30 August 2012*. doi: 10.1177/1052562912456296

Craig, A., Coldwell, J. M., & Goold, A. (2010). *ETechnologies: A profile of tools for learning and teaching online*: School of Information Technology. Deakin University.

Creswell, J. W. (2009). *Research design: qualitative, quantitative, and mixed methods approaches*: Sage Publications, Inc.

Dawley, L. (2009). Social network knowledge construction: emerging virtual world pedagogy. *On the Horizon, 17*(2), 109-121.

De Freitas, S. I. (2006). Using games and simulations for supporting learning. *Learning, Media and Technology, 31*(4), 343-358.

Ebersbach, A., Glaser, M., & Heigl, R. (2006). Wiki: Web Collaboration: Springer, USA.

Elgort, I., Toland, J., & Smith, A. G. (2008). Is wiki an effective platform for group course work? *Australasian Journal of Educational Technology, 24*(2), 195-210.

Ellis, R. A., Goodyear, P., Brillant, M., & Prosser, M. (2008). Student experiences of problem-based learning in pharmacy: conceptions of learning, approaches to learning and the integration of face-to-face and on-line activities. *Advances in Health Sciences Education, 13*(5), 675-692.

Everett, D. R. (2011). *Wikis as a Student Collaborative Tool*. Paper presented at the the information systems educators conference Wilmington NC.

Fang, B. (2009). From Distraction to Engagement: Wireless Devices in the Classroom. *EDUCAUSE Quarterly Magazine, 32*(4). Retrieved from http://www.educause.edu/ero/article/distraction-engagement-wireless-devices-classroom

Forte, A., & Bruckman, A. (2007). *Constructing text: Wiki as a toolkit for(collaborative?) learning*. Paper presented at the International Symposium on Wikis (WikiSym), Montreal, Canada. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.105.5460&rep=rep1&type=pdf

Fu, F. L., Su, R. C., & Yu, S. C. (2009). EGameFlow: A scale to measure learners' enjoyment of e-learning games. *Computers & Education, 52*(1), 101-112.

Geist, E. (2011). The game changer: using iPads in college teacher education classes. *College Student Journal, 45*(4), 758-768.

Gray, K., Thompson, C., Sheard, J., Clerehan, R., & Hamilton, M. (2010). Students as Web 2.0 authors: Implications for assessment design and conduct. *Australasian Journal of Educational Technology, 26*(1), 105-122.

Higdon, J., & Topaz, C. (2009). Blogs and Wikis as Instructional Tools: A Social Software Adaptation of Just-in-Time Teaching. *College Teaching, 57*(2), 105-110.

Hughes, J. E., & Narayan, R. (2009). Collaboration and learning with wikis in postsecondary classrooms. *Journal of Interactive Online Learning, 8*(1), 63-62.

Jacobs, J. (2003). *Communication over exposure: The rise of blogs as a product of cybervoyeurism*. Paper presented at the Australian and New Zealand Communication Association Conference Brisbane. http://www.bgsb.qut.edu.au/conferences/ANZCA03/Proceedings/papers/jjacobs_full.pdf

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher, 33*(7), 14.

Jones, C., Ramanau, R., Cross, S., & Healing, G. (2010). Net generation or Digital Natives: Is there a distinct new generation entering university? *Computers & Education, 54*(3), 722-732.

Judd, T., Kennedy, G., & Cropper, S. (2010). Using wikis for collaborative learning: Assessing collaboration through contribution. *Australasian Journal of Educational Technology, 26*(3), 341-354.

Kennedy, G., Dalgarno, B., Bennett, S., Gray, K., Waycott, J., Judd, T., et al. (2009). Educating the Net Generation- A Handbook of Findings for Practice and Policy. Sydney: Australian Learning and Teaching Council,ALTC.

Kennedy, G., Dalgarno, B., Gray, K., Judd, T., Waycott, J., Bennett, S., et al. (2007). *The net generation are not big users of Web 2.0 technologies: Preliminary findings.* Paper presented at the Providing choices for learners and learning, Nanyang Technological University,Singapore.

Kennedy, G., Judd, T., Dalgarno, B., & Waycott, J. (2010). Beyond natives and immigrants: exploring types of net generation students. *Journal of Computer Assisted Learning, 26*(5), 332-343.

Kennedy, G., Judd, T. S., Churchward, A., Gray, K., & Krause, K. (2008). First year students' experiences with technology: Are they really digital natives. *Australasian Journal of Educational Technology, 24*(1), 108-122.

Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into practice, 41*(4), 212-218.

Lamb, B. (2004). Wide open spaces: Wikis, ready or not. *EDUCAUSE review, 39*, 36-49.

Lazda-Cazers, R. (2010). A Course Wiki: Challenges in Facilitating and Assessing Student-Generated Learning Content for the Humanities Classroom. *JGE: The Journal of General Education, 59*(4), 193-222.

Leuf, B., & Cunningham, W. (2001). *The Wiki way: quick collaboration on the Web*: Upper Saddle River, Addison Wesley.

Lipponen, L. (2002). *Exploring foundations for computer-supported collaborative learning*. Paper presented at the The Computer-supported Collaborative Learning Conference Boulder, CO. http://newmedia.colorado.edu/cscl/31.pdf

McLoughlin, C., & Lee, M. J. W. (2010). Personalised and self regulated learning in the Web 2.0 era: International exemplars of innovative pedagogy using social software. *Australasian Journal of Educational Technology, 26*(1), 28-43.

Metcalfe, M. (2007). Pragmatic inquiry. *Journal of the Operational Research Society, 59*(8), 1091-1099.

Mezirow, J. (1996). Contemporary paradigms of learning. *Adult education quarterly, 46*(3), 158-172.

Mezirow, J. (1997). *Cognitive processes: contemporary paradigms of learning*: Kogan Page, London/Stirling, Vermont.

Minocha, S., & Roberts, D. (2008). Social, Usability, and Pedagogical Factors Influencing Students' Learning Experiences with Wikis and Blogs. *Pragmatics and Cognition, 16*(2), 272-306.

O'Neill, M. E. (2005). Automated use of a wiki for collaborative lecture notes. *ACM SIGCSE Bulletin, 37*(1), 267-271.

Oblinger, D., & Oblinger, J. (2005). Is It Age or IT: First Steps Toward Understanding the Net Generation D. G. Oblinger & J. L. Oblinger (Eds.), *Educating the Net Generation* Retrieved from www.educause.edu/educatingthenetgen/

Oren, E., Breslin, J. G., & Decker, S. (2006). *How semantics make better wikis.* Paper presented at the Proceedings of the 15th international conference on World Wide Web.

Parker, K. R., & Chao, J. T. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of Knowledge and Learning Objects, 3*(1), 57-72.

Pletka, B. (2007). *Educating the Net Generation: How to Engage Students in the 21st Century* (2 ed.): Santa Monica Press.

Popescu, E., & Manafu, L. (2011). *Repurposing a wiki for collaborative learning-pedagogical and technical view.* Paper presented at the 15th International Conference on System Theory, Control, and Computing (ICSTCC).

Raitman, R., Augar, N., & Zhou, W. (2005). *Employing wikis for online collaboration in the e-learning environment: Case study.* Paper presented at the 3rd International Conference on Information Technology and Applications.

Ruth, A. (2002). *Paradigms and models of online learning–a review of the literature.* Paper presented at the IT in Regional Areas Conference, Rockhampton.

Ruth, A., & Houghton, L. (2009). The wiki way of learning. *Australasian Journal of Educational Technology, 25*(2), 135-152.

Shovein, J., Huston, C., Fox, S., & Damazo, B. (2005). Challenging traditional teaching and learning paradigms: Online learning and emancipatory teaching. *Nursing Education Perspectives, 26*(6), 340-343.

Slotter, E. B. (2010). Using Wiki Contributions to Induce Collaborative Learning in a Psychology Course. *International Journal of Technology in Teaching & Learning, 6*(1), 33-42.

Strauss, A. L., & Corbin, J. (1990). *Basics of qualitative research*: Sage Newbury Park, CA.

Tazzoli, R., Castagna, P., & Campanini, S. E. (2004). Towards a semantic wiki wiki web. *In Demo Session at ISWC2004*.

Teddlie, C., & Tashakkori, A. (2003). *Major issues and controveries inthe use of mixed methods in the social and behvioral sciences*. Thousand Oaks, CA: Sage.

Thogersen, K. (2008). Educating the Net Generation: How to Engage Students in the 21st Century. [Book Review]. *Young Adult Library Services, 6*(4), 44-44.

Varga-Atkins, T., Dangerfield, P., & Brigden, D. (2010). Developing professionalism through the use of wikis: A study with first-year undergraduate medical students. *Medical teacher, 32*(10), 824-829.

Wang, C., & Turner, D. (2004). *Extending the wiki paradigm for use in the classroom.* Paper presented at the the International Conference on Information Technology (ITCC 2004), Las Vegas, Nevada, USA. http://ieeexplore.ieee.org/iel5/9035/28682/01286462.pdf

Webb, E. (2009). Engaging Students with Engaging Tools. *EDUCAUSE Quarterly Magazine, 32*(4). Retrieved from http://www.educause.edu/EDUCAUSE+Quarterly/EQVolume322009/EDUCAUSEQuarterlyMagazineVolum/192952

Wheeler, S., YeoMans, P., & Wheeler, D. (2008). The good, the bad and the wiki: Evaluating student-generated content for collaborative learning. *British Journal of Educational Technology, 39*(6), 987-995.

Williams, J. B., & Jacobs, J. (2004). Exploring the use of blogs as learning spaces in the higher education sector. *Australasian Journal of Educational Technology, 20*(2), 232-247.

Windham, C. (2005). The Student's Perspective D. Oblinger & J. Oblinger (Eds.), *Educating the Net Generation* Retrieved from www.educause.edu/educatingthenetgen/

Wright, T., Park, E. G., & Cole, C. (2011). Collaboration Tools in Virtual Educational Communities : A Case of the Paulo Freire Project for Critical Pedagogy. *New Educational Review, 24*(2), 271-280.

Appendices

Wiki 1 Topic/Scenario
It is reported that China's economy is slowing down. Explain the possible implications of this on the international marketing practices of exporting firms in China

Wiki 2 Topic/Scenario
"Mall vs. Internet: Middle East goes online", was on headline news. What are the possible implications of this trend on the marketing practices of service marketers (mechanics, beauty salons) in the Middle East?

Wiki 3 Topic/Scenario
Foster's, an iconic Australian beer brand, was taken over by a British-based brewing firm. Discuss the implications of this takeover on Foster's beer sales in Australia.

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