Using multimedia technology to build a community of practice: Pre-service teachers' and digital storytelling in South Africa

Agnes Chigona
Cape Peninsula University of Technology, South Africa

ABSTRACT

Employing the theory of Community of Practice (CoP), this paper shows how the use of multimedia led a group of pre-service teachers to build a community of practice in the process of completing their individual digital stories for assessment. The paper is focused on a group of diverse pre-service teachers doing their final year at a teacher education institution in Cape Town. The study used a qualitative research approach to collect and analyse data to answer the question: How can the use of multimedia in a diverse classroom lead to building a community of practice. The data were gathered using focus group interviews with the pre-service teachers and also their written reflections on their experience on using multimedia tools to produce digital stories. Analysis of the data collected shows that the use of the multimedia tools in the diverse classroom to develop digital stories and the stories themselves led to the building of a community. The pre-service teachers were able to understand one another hence building the respect and understanding one another's culture. The pre-service teachers stated that the exposure to the project skilled them somehow to be able to handle multicultural classrooms which they are most likely to be teaching.

Keywords: *multimedia technology, digital storytelling, community of practice, teacher education*

INTRODUCTION

The adoption and use of multimedia tools for curriculum delivery is one of the most exciting innovations in the 21st Century. Literature shows that the belief that the new technologies have the potential to enhance teaching and learning is so strong (Fu, 2013). According to Sharma, Gandhar & Sharma (2011: 3) "there is considerable hope that technology can expand and improve education in all levels with special reference to design and content of instructional materials, delivery, and assessment and feedback". In addition, other researchers have shown that new technologies have played a major role in transforming the way we teach and learn in this digital age (Shana 2009; Karami, Karami, Attaran, 2013); others like Robin (2008) and Pineteh (2012) have shown that the same new technologies have the potential to break social-cultural barriers among diverse students and, hence enhancing the acceptance and understanding of one another. The utilization of digital storytelling as a teaching and learning technique is an example of such new technologies that is offering opportunities for breaking social-cultural barriers among diverse students. This is echoed by Robin (2008) who showed that digital storytelling "can be used to facilitate discussions about current issues such as race, multiculturalism and the globalization that is taking place in today's world."

At a teacher education institution in Cape Town, South Africa, a group of final year pre-service teachers took part in the digital storytelling project; through which they had been exposed to the experience of producing and using digital stories for classroom use. The rationale was to equip the pre-service teachers with skills which they can use for teaching as well as managing diverse classrooms which they are most likely to find themselves in when they start their teaching career. Another reason was to get the pre-service teachers develop confidence using multimedia tools

which they may be required to integrate in their curriculum delivery at school.   Nonetheless, during the four years of preparation to be a teacher, the pre-service teachers acquired pedagogical content knowledge to be able to teach professionally.   They have been exposed to both theory and practice.

However, it should be noted that this group of pre-service teachers was itself diverse. The pre-service teachers were each asked to develop a digital story about their road to becoming a teacher. The production of the digital stories was accomplished through situated practice in a computer laboratory at their institution. The pre-service teachers shared resources (for example experiences, problems and solutions, tools, methodologies) and collaborated. The sharing and collaboration resulted in the enhancement of the knowledge of each of the pre-service teachers in the class. They also, through the process and product of the digital stories negotiated their identities and meanings (Vinogradova, 2011, Wenger, 1998). Nonetheless, the sharing and communication contributed to the acquisition of both tacit (knowing how) and explicit (knowing what) knowledge(s). According to Duguid (2005) optimal performance in a given task may depend on how well one can put theory into practice; however, an individual's gaps which may exist between the explicit and the tacit knowledge(s) may be rectified if working within a group where individuals have similar interests and goals. That type of knowledge acquisition is what Lave and Wenger (1991) called situated learning.

On the completion of the production of the digital stories, it was observed that there was much respect and understanding between and among the pre-service teachers regardless of their racial or social economic backgrounds, or age. Again, during the development of the digital stories it was observed that the pre-service teachers developed a community of practice to help one another in the process. Fascinated by this observation, the author tries to understand how the use of multimedia did lead the group of pre-service teachers to build a community of practice in the process of completing their individual digital stories. The question giving focus to the study is:

>   How can the use of multimedia in a diverse classroom lead to building a community of practice?

The study used a qualitative research approach while embracing Community of Practice (CoP) as theoretical framework to guide the study. Data was gathered using focus group interviews with purposively selected pre-service teachers. The teachers' written reflections on their experience on using multimedia tools to produce digital stories were also used as data in the study. The data collected was analysed deductively by making use of the CoP constructs. Results of the study show that the use of the multimedia tools in the diverse pre-service teachers' classroom to develop digital stories led to the building of a community of practice. Again, the listening and watching of the stories helped in the understanding of one another hence building the respect and understanding one another's culture. The pre-service teachers felt the exposure to the project skilled them somehow to be able to handle multicultural classrooms which they are most likely to be teaching.

The paper is organized as follows: firstly, the paper has introduced and provided a brief background of the study; secondly, using literature, it provides a discussion on multimedia technology, digital storytelling; and situated learning which characterizes the community of practice; thirdly, the Community of Practice as a framework is explained; fourthly, the paper outlines the research designs for the study; fifthly, it presents the findings and discussions, and finally, is the conclusion and recommendations drawn from the study.

MULTIMEDIA TECHNOLOGY

Multimedia technology has been defined by Eskicioglu & Kopec (2003:199) as multiple forms of media (text, graphics, images, animation, audio and video) that work together. Multimedia technology is believed to be one of the most exciting innovations in man has ever had. Humankind has experienced a rapid growth of multimedia technology over the past two decades (Norhayati & Siew 2004). The researchers are of the opinion that fundamental changes to computing, entertainment and education are due to the rapid growth of multimedia technology (ibid). Despite the well documented challenges associated with the integration of new technologies in education (Fu, 2013), research on "learning and technology contains evidence that multimedia has the potential to transform every aspect of academic endeavor from instruction and learning to research and dissemination of knowledge" (Eskicioglu & Kopec, 2003:199).

Digital Storytelling

One such multimedia which is loaded with opportunities for the attainment of higher levels of cognition within specific learning contexts is digital storytelling (Fu, 2013). Digital Storytelling is defined as the practice of using computer-based tools to tell stories. According to Robin (2008: 222) "digital storytelling is a technology application that is well-positioned to take advantage of user-contributed content and to help teachers overcome some of the obstacles to productively using technology in their classrooms". In this paper, the pre-service teachers were involved in the interactive digital story. Lee et al (2008) define interactive digital story as "an integrated environment with multimedia display of story contents as well as interaction with the users". Nevertheless, it is noted that interactive digital story can be an excellent example for situated learning (Lee et al, 2008).

The creation of a digital story invites the storyteller to employ both old and new literacies (Sylvester & Greenidge 2009). The process of creating a digital story enables the storyteller to construct, examine, and manifest digital literacies (Sylvester & Greenidge 2010:287). The pre-service teachers in this study will be expected to integrate digital technologies in their teaching once they have their own classrooms. Their involvement in the digital storytelling project has horned some of the digital skills they will have to use in their teaching. Again, it should be noted that through the process of combining modes, the storyteller is able to express a deeper meaning of what he/she want other people to hear (Warschauer 2009:125). This confirmed by Kompar (2007) who is of the opinion that teachers can integrate digital storytelling into their curriculum delivery for several reasons. For instance, digital storytelling teaching technique could be used in order to incorporate multimedia into their curriculum; again, storytelling can be introduced in combination with social networking so as to enhance collaboration, and communication skills. Karami et al (2013:37) citing Jimoyiannis (2010) shows that "true learning in the 21st century requires students being able to use ICT, not only for enhancing the memorization of facts, but also for problem solving in real world settings". Other researchers in trying to be specific with technology argued that digital storytelling is a way introduce the twenty-first century learner the twenty-first century technology skills such as information literacy, visual literacy, communication and technology literacy (Kompar, 2007, Lee et al, 2008)

According to Sylvester and Greenidge (2010) when developing digital stories in a classroom setting, students go through the process of writing a story by traditional methods: using pencil and paper or the word-processing functions of a computer. This becomes the digitized voice-over narration. The story is recorded and preferably as a performance, allowing the audience to hear the personal emotion inflected in the voice. Once the story has been written and read, personal photographs, pictures, scenes or image frames that complement the narration are included. Music or sound effects are added to enhance the narration. Finally a title frame is included as well as rolling credits to cite sources, and add acknowledgements. If students used media from

the internet to enhance their stories, we insisted they cited where they obtained the files and any other copyright information. The final phase of the digital story creation is called publishing; this is when the movies created are shown to the class and other people

SITUATED LEARNING

Lee et al (2008) insist that interactive digital stories can be a good example for situated learning. According to Lave and Wenger (1991) situated learning is a type of knowledge acquisition that usually happens unintentional rather than deliberate; the learning takes place in the same environment in which it is put to practical use. Lave and Wenger (1991) call this a process of "legitimate peripheral participation." There is acquisition of both tacit and explicit knowledge(s). The tacit knowledge is defined as "knowledge which experts have developed over a long period of time, but which they may not be able to articulate to a novice. While tacit knowledge can be difficult to define and communicate, it is often an integral part of the culture or community of practice" (Lunce, 2006: 39).

It is argued that social interaction and collaboration are also critical components of this type of knowledge acquisition since the learning is afforded within a community of practice (Lunce, 2006). As a community participant acquires and master the skills and knowledge he/she becomes more involved within the community and slowly changes the position from the periphery of a community to its center hence assuming the role of expert (Lave and Wenger, 1991). According to Lunce (2006: 39) "part of the learning process is observing the actions and attending to the spoken communications of expert practitioners at work. As a member of a community, the student participates in learning tasks throughout the interval of instruction. Situated learning may also involve role-playing or scenario-based learning activities".

THEORETICAL FRAMEWORK: Community of practice

Community of Practice which encompasses situated learning was used in this paper as a framework to examine the manifestation and benefits of community of practice within the pre-service teachers' classroom as they were engaged in the production of digital stories. According to Bozarth (2008) CoP is a self managed group of people who through intentional mutual engagement work to create shared learning. The learning happens unintentional rather than deliberate (Lunce, 2006). As discussed above, situated learning takes place in CoP whereby the community members interested in the "knowing how to be in practice', rather than 'knowing about practice"' (Brown and Duguid 2002:138). Wenger (2006) defines CoP as "groups of people who share a passion for something they do and learn how to do it better as they interact regularly." Wenger cautions that "this definition allows for, but does not assume, intentionality: learning can be the reason the community comes together or an incidental outcome of member's interactions".

Wenger (1998: 72-3) showed that a CoP structure could be made up of three interrelated terms namely: (i) mutual engagement which is achieved through member participation in the group hence establishing norms and developing collaborations among the participants. (ii)Joint enterprise which is established as participants interact among themselves in the community, they create a shared understanding which binds them together. (iii) Shared repertoire- as the participants interact in the community, they are engaged in the meaning making and/or production of a set of communal resources which are used to the benefit of the community.

In addition, according to Brown and Duguid (2002) the learning in a CoP involves constructing identities of a novice in relation to the community through active participation in the social practice

of the community. In other words, the individual is learning as he/she is becoming as well as belonging to the community. It is argued that "the practice exists because people are engaged in actions whose meanings they negotiate with one another" (Wenger, 1998:73). Thus, as argued by Wenger et al (2002) the community members have a shared understanding within a given knowledge domain. From this we see that learning is taking place by doing as the people are engaged in actions; and there is also learning through meaning making as the members share the understanding (Moule, 2006). Wenger (1998) insists that CoP provides a platform for negotiation of meaning among members within the community.

RESEARCH DESIGN

This qualitative study has used CoP as a framework to conduct and analyze data from focus group interviews and reflections by pre-service teachers in the study after the production of their digital stories. Seven pre-service teachers from a class of 60 student teachers, at a teacher education institution in Cape Town, volunteered to take part in the focus group interviews which lasted for 45 minutes. Written reflections by all sixty pre-service teachers were used to triangulate the focus group interview data. The class was composed of different students from very diverse backgrounds and races namely: White, Black Coloured and Indian. The 60 students were given a period of eight weeks to produce their digital stories.

Focus group interviews were used to engage in a flexible dialogue with the pre-service teachers in order to understand how digital story production made it possible for the pre-service teachers to create a shared understanding that bound the classmates together. Interviews were audio-recorded with the consent from the participants. The interviews were conducted in English which is the medium of instruction at this particular institution. All the sixty students in the study could speak English fluently and so the reflections were also written in English. In the process of analyzing the collected data, the audio-recorded interviews were transcribed verbatim. The transcripts of the interviews and the written reflections were put together and then I did a detailed systematic qualitative analysis as explained by Milies and Huberman (1994). The analysis followed the three processes as suggested by Milies and Huberman (1994) namely reducing data, displaying data, and drawing and verifying conclusions.

Using CoP, as a framework to analyse the data, I checked in the raw data on the manifestation and benefits of community of practice among the pre-service teachers as they were engaged in the production of digital stories. Constructs from the CoP framework were mapped on the data, first to see how pre-service teachers created a shared understanding that bound the classmates together, and secondly, to see benefits the students derived from the community.

Before we embarked on this study, I obtained permission from the institution and the final year pre-service teachers involved in the Digital Storytelling Project at the teacher education institution in Cape Town. Permission to use the students written reflections and to interview them was obtained orally as well as in written form at the beginning of the project. I also obtained consent to record the conversations from the volunteers who participated in the focus group interviews. Privacy and confidentiality were adhered to throughout the research process (Cohen, Manion & Morrison, 2008). The pre-service teachers were assured that participation was voluntary and so could withdraw from participating at any point without consequences on their part.

FINDINGS

Embracing Wenger's (1998) community of practice which encompasses situated learning as a framework I analysed the qualitative data collected through focus group interviews and the pre-service teachers' written reflections on the process and production of their digital stories. The following constructs from the theory were used in the data analysis as themes and sub-themes.

> **i. CoP in the digital storytelling classroom:** - mutual engagement
> - Joint enterprise
> - shared repertoire
>
> **ii. Benefits of community of practice: -** Celebrating diversity
> - Enhancement of technological skill/knowledge

CoP in the digital storytelling classroom

According to Lave and Wenger (1991), it is the sharing of information and experiences with the other members of the community that enables members to learn from each other; and hence develop themselves personally and professionally. In the digital storytelling class the pre-service teachers helped one another and they also claim to have learnt a lot from each other. On the point of rendering assistance to other people in the group, one focus group interview participant said:

> *I helped two or three people and then I know lots other people who helped a few people to set up their stories with this programme.*

From the reflections, it was also reported by a number of students that through rendering help to others, they also learnt a lot. One of the students wrote:

> *I really enjoyed the process… I also enjoyed helping my friends; I think by doing that I learnt to know them on a different level.*

Looking at the data we clearly see how the CoP was manifested itself in this class of pre-service teachers who had a common goal of producing individual digital stories. The following sub-themes derived from the framework show how the structure of CoP was realized as the pre-service teachers were busy with their story productions.

Mutual engagement
The analysis of the data shows that other members of the community were able to learn, from their colleagues who had the expertise in the some areas of the technical production of digital stories, through practice and participation. Nevertheless, the members had to have a sense of accepting themselves and trust of the others to open up and ask for help for their own stories. Two participants in the interviews said

> when I'm stuck again then I will ask them again listen I'm struggling with this then you know, what do you think? How many words? Ja all those things.

> Where you accepted yourself and then also being able to speak to someone about the story asking them do you think this incident is important enough or like editing your story if I can say it like that.

Data from the pre-service teachers' reflection also show that there was mutual engagement among the students in their class in the process of completing the digital story production assignment. Some of the members in the classroom had the following to write:

> Seen other peoples examples as well as the completion of 'the river of life', everything had fell into place. What had also made this better was the help and comfort we had received and gave each other during the processing of our stories

> We have been supporting each other without realizing it. All of us have been going through some sort of crisis… it has been a worthwhile experience

The pre-service teachers participating in the groups were assimilated into the culture of the formed groups hence were able to gain knowledge from those community members positioned as masters on a different small tasks needed to complete their digital stories (Lave & Wenger 1991). According to Gannon-Leary & Fontainha (2007) this type of behavior confirms the model of learning in social and situated contexts.

Joint enterprise
In their groupings the pre-service teachers, had a shared understanding that bound them together as they had a common interest to develop digital stories for their assessment. Everybody therefore, was determined to do a good job though could not necessarily have all the necessary expertise to complete the assignment. They were determined to learn from one another in the process of producing the digital stories. They were open to one another. Informal learning as opposed to formal learning was the order of the day. Once one acquired a skill or knowledge was eager to pass it on to those still lacking the skill hence, the shared knowledge/skill got enhanced.

> we went in our different groups and shared The River of Life stories you know because that is when I got my first shot of like ja we're dealing with this and now I had to hear the difference – there was like two stories or three stories in the group that I was

> I think we did get a shared understanding of being in a classroom and of you know – of being with each other … knowing you know some people's motivations some people's problems that they've had over the last four years. You know some of the really personal aspects of these people … the digital stories allowed you to really get to know them on a very, very personal level

> This project allows all learners [participant] to be involved in the learning process. It pushes them to want to learn more in their lives …. Student's communication skills can be improved and give them a sense of accountability and retain knowledge longer.

The pre-service teachers had to communicate with one another to be able to be helped or to help. Communication is important in building up trust among the community participants, hence allowing the CoP to develop, and the members to achieve their goals. Literature shows that through continued social engagement of the group, trust is likely to develop, consequently, enabling the members to develop common values and a shared understanding (Gibson & Manuel, 2003).

Shared repertoire
The pre-service teachers had to share the computer lab where they had to use the same software to complete their stories. Some knew how to use the software others did not. They had to open up to work in harmony as they had to share the technical resources. Being able to open up and the trust they built to share their experiences allowed the CoP to develop; hence the pre-service teachers were able to learn a lot about the production process but also about their colleagues

from different cultures on how some things are done and why they are done that way. From both the focus group interviews and the students' reflections, it was narrated like:

> I thought to myself wow I've spent virtually every single day with these people you know in different circumstances over four years and only now do you get down to the underlying, you know like I said their motivations or who they really are. But I mean that was a great feeling to share. That was a great experience to share

> The project made me appreciate the fact that these men and women were able to open up about themselves and let me learn from the mistakes they have made and the challenges they have faced and how they have actually overcame those challenges.

The pre-service teachers unknowingly established an environment where the necessary interactions that enhanced their knowledge and skills for digital story production had to occur (Wenger et al., 2002). The interactions in the digital story classroom were focused around knowledge sharing among the students, who ranged from experts through to novices in the digital storytelling production. In the end everybody benefited

Benefits of community of practice

The pre-service teachers involved in this study are from diverse backgrounds but were able to mobilize themselves to make complementary contributions towards one another. Mutual engagement among the classmates contributed to sharing of their understanding of the digital storytelling production process. There are benefits which the pre-service teachers released from the community as they were working together.

Celebrating diversity
As the pre-service teachers were working closely, they had a chance of knowing one another. During the whole process of the digital storytelling production, they learnt about many things including culture about their colleagues. This made them develop the understanding and respect of one another. Some of the participants indicated that:

> I have also realized the power in it as it immediately united the class by bringing us closer to one another. As a class we have learned things about each other that had never been a thought

> Students learn from each others' culture or communities and also help them to engage with one another

> We actually learned from each other, things that you never knew about that person, actually created a bond in sharing

> I liked that there were people to assist whenever we were stuck sometimes help relax and feel free to express exactly how we feel

The pre-service teachers' final products (the digital stories) and the creation of relationships among themselves to the benefit of the common goal the class had to achieve was a benefit derived from CoP. One would assume that such a group of people could not easily work together since the class was made up of very diverse students. From this one can see the power of CoP and also that of digital storytelling has in bringing different people together. The pre-service teachers in this classroom had a common goal which was each to produce a digital story. It may be concluded that it was through continued social interaction of the pre-service teachers during

the digital story production that trust developed among them as they become to know each other, hence developing common values and a shared understanding (Gibson & Manuel, 2003).

Enhancement of technological skill/knowledge
From the analysis of the data, enhancement of technological skill and/or knowledge was seen as a benefit for the pre-service teachers resulting from working in a CoP. Within the community, there were those who had adequate technical skills regarding the use of digital technology and those who felt lacking the skills. Those with the technological skill helped their fellow members who had difficulties using the technology. Both groups within the community benefited from the experience. One participant who received help said:

> The production process taught me to apply certain techniques on the computer programme. Initially I was intimidated as I knew little about computers, but the production assistance equipped me so appropriately that now I know I can apply the skill I acquired in the future.

One of those who render technological assistance to the less skilled said:

> I really enjoyed the process… I also enjoyed helping my friends; I think by doing that I learnt to know them on a different level, but also through helping I enhanced my computer skills

By organizing themselves into groups (communities) to help one another, the pre-service teachers learning environment was enhanced. This echoes Johnson (2001:34) who claims that "the learning that evolved from these communities is collaborative, in which the collaborative knowledge of the community is greater than any individual knowledge". The pre-service teachers acquired both tacit and explicit knowledge through interacting with classmates.

CONCLUSIONS

The pre-service teachers' openness to interact and communicate with each other resulted in the shared understanding. Unknowingly, the pre-service teachers formed a CoP through which each one of them benefited and claimed to have learned a lot from the interactions. The paper has shown how digital storytelling production helped the pre-service teachers to create the shared understanding that bound the classmates together hence developing the community of practice.

Through collaborations and interactions in the community the pre-service teachers enhanced their knowledge and skills they needed to successfully complete their digital stories. This confirms Vygotsky's (1978) argument which says an individual learning could be enhanced through engagement with others making it possible for the individual's capabilities to extend to higher level. Again, Lave and Wenger (1991) shows that individuals learn better in through engagement with others in social settings

Meta analysis of the study shows that while some of the pre-service teachers did not have adequate skill on the technology used to produce the digital stories nevertheless, the participant perceived the technological skill as one of the most important factor for the successful completion of the stories. However, the fact that the pre-service teachers developed a community of practice, those who did not have the skill were able to learn the skill and also to get help from their colleagues in the community. Some pre-service teachers stated in both the interviews and reflections that they learned more about the tacit knowledge from their peers than they did from their instructors during formal learning. Both the helper and the helped benefited from the community.

Since pre-service teachers were able to understand one another hence building the respect and understanding one another's culture, it is therefore recommended that teachers and instructors teaching diverse classrooms introduce and let the students develop their own digital stories in order to bring real understand of one another among the student from diverse backgrounds. There are a lot of benefits from such an exercise for students.

ACKNOWLEDGEMENT

REFERENCES

Bozarth, J.2008. The usefulness of Wenger framework in understanding a community of practice. Dissertation submitted to North Carolina State University

Brown, J.S. & Duguid, P. 2002. *The social life of information*. Boston: Harvard Business School Press

Cohen, L., Manion, I. & Morrison, K. 2008. *Research Methods in Education.* 7th edition. London: Routledge Falmer

Duguid, P. 2005. The Art of Knowing: Social and Tacit Dimensions of Knowledge and the Limits of the Community of Practice. *The Information Society* pp109–118

Eskicioglu, A.M. & Kopec, D. 2003. The Ideal Multimedia-Enabled Classroom: Perspectives from Psychology, Education, and Information Science. *Journal of Educational Multimedia and Hypermedia, 12*(2), 199-221. Norfolk, VA: AACE

Fu, J.S. 2013. ICT in Education: A Critical Literature Review and Its Implications *International Journal of Education and Development using Information and Communication Technology (IJEDICT),* 2013, Vol. 9(1) 112-125

Gannon-Leary, P. & Fontainha, E. 2007. Communities of Practice and virtual learning communities: benefits, barriers and success factors eLearning Papers • www.elearningpapers.eu • 1 Nº 5 • September 2007

Gibson, C.B. & Manuel, J.A. 2003. Building trust: effective multicultural communication processes in virtual teams, In Gibson, C.B. & Cohen, S.G. (Eds.), *Virtual Teams that Work*. San Francisco. CA: Wiley & Sons, 59-86.

Johnson, C. M. 2001. A survey of current research on online communities of practice. *The Internet and Higher Education*, 4(1), 45-60.

Karami, M. Karami, Z. Attaran, M. 2013. Integrating problem-based learning with ICT for developing trainee teachers' content knowledge and teaching skill *International Journal of Education and Development using Information and Communication Technology (IJEDICT),* 2013, Vol. 9 (1) 36-49

Kompar. F. 2007. Greenwich Public Schools Library Media and Technology Program Curriculum Framework. http://www.greenwichschools.org/uploaded/district/Board_of_Education/meeting_materials/2008-09_meetings/1-22-09_meeting/1-22-09_MediaCurrRevwII.pdf

Lave, J. & Wenger, E. 1991. *Situated Learning. Legitimate peripheral participation*, Cambridge: University of Cambridge Press.

Lee, C.W., Huang, J.K., Wang, C.M., Chen, H.C., Lee, P.C., Huang, M.J. & Chin, C.N. 2008. A Case Study of Situated Learning with Interactive Digital Storytelling. In J. Luca & E. Weippl (Eds.), *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2008* (pp. 1422-1427). Chesapeake, VA: AACE.

Lunce, L.M. 2006. Simulations: Bringing the benefits of situated learning to the traditional classroom. *Journal of Applied Educational Technology*. Vol. 3(1), 37-44. Springer/Summer

Moule P. 2006 "Developing the Communities of Practice, Framework for On-Line Learning" *The Electronic Journal of e-Learning* Vol. 4 (2), 133 - 140, www.ejel.org

Norhayati, A. M., & Siew, P. H. 2004. Malaysian Perspective: Designing Interactive Multimedia Learning Environment for Moral Values Education. *Educational Technology & Society*, 7 (4), 143-152.

Pineteh E.A. 2012. Using virtual interactions to enhance the teaching of communication skills to Information Technology students. *British Journal of Educational Technology*, Vol 43(1) 85-96

Robin, B.R. 2008. Digital Storytelling: A Powerful Technology Tool for the 21st Century Classroom *Theory into Practice*, 47:220–228, 2008.

Sharma,A., Gandhar, K. & Sharma, S. 2011. Role of ICT in the Process of Teaching and Learning *Journal of Education and Practice* Vol 2, No 5, 2011 www.iiste.org

Sylvester, R. & Greenidge, W. 2010. Digital storytelling: Extending the potential for struggling writers. *The Reading Teacher Journal*, 63 (4) 284-295.