ascilite 2010 sydney

curriculum, technology & transformation for an unknown future

Photo-imaging and tagging the act of studying

Judith Guevarra Enriquez
Department of Learning Technologies
University of North Texas

This paper aims to explore the study practices and places of learning as tagged and pictured in flickr.com. Digital imaging technologies and the Internet have recently expanded options for sharing text, photos, music and videos. Personal photography through the popular image-sharing site, flickr.com, allows this study to engage with the visible materials and visual orientation and representation of the act of studying. How is studying done becomes the focus to visualize the socio-technical relations that order university settings and literacy practices with photos tagged as studying in Flickr. Photo-imaging and tagging come together in ways that reveal how individuals represent themselves in self-portraits captured or pictured in the act of studying – which includes reading, writing, sitting; and in particular study places or spaces – in bedrooms, libraries, cafes and outdoors. It is informed by photographs taken and uploaded in Flickr. Photos assigned with the tag 'studying' and 'self' were analysed. Only 94 of the total 181 resulting items were considered for this paper. Additional tags that were associated to photos tagged as studying were searched further. The paper concludes with a discussion on how study practices pictured through Flickr remains to be centered around reading textbooks, writing notes and highlighting text, and seated at desks or tables where things could be spread out and not necessarily with a computer or a laptop or any other portable device in the 'photo-framed' self-portrait of studying in Flickr.

Keywords: photo-imaging, tagging, flickr, study places, studying

Introduction

The emergence of cyberspace has transformed the spatial design and organization of the university campus and its learning spaces. This "fracturing of space" (Lankshear & Bigum, 1999, p. 457) is accompanied by an educational concern regarding the unreadiness of higher education institutions to meet the learning needs of Net Geners (e.g., Oblinger & Oblinger, 2005; Tapscott, 1998). Young people born after 1982 are said to be the Net Generation. They were born into a society that has Internet and other digital technologies. This generational focus and mapping of technologies is age discriminating to say the least and ignores one of the key changes brought about by cyberspace or Internet, which is the growth of online education through which mature (lifelong) learners (e.g. Matures, Baby Boomers) have come back to start a degree or to pursue a higher and/or another one. More recently, with the blurring of boundaries of enclosed spaces mediated by portable devices (e.g. mobile phones, iPods), there has been a preoccupation on re-designing learning spaces. Educause in the United States has published an e-book, entitled, *Learning Spaces* (Oblinger, 2006), looking at the impact of spaces on learning and on the same year, JISC in the UK has also published, *Designing Spaces for Effective Learning* (JISC, 2006).

Given the wired configuration of the campus, the rather pertinent question that this paper attends to is how these 'new' virtual connections or cyberspacing of the campus enhance studying – an important academic activity for anyone pursuing a university degree and a widely shared experience among students and their professors/lecturers, too. To understand all generations attending higher education, we have to understand how do they study (e.g. prepare for exams, accomplish tasks) with the technologies that have been integrated into their everyday lives (on-campus, at home, etc). The nature of student engagement has changed with interactions in mediated spaces and 24/7 connectivity through mobile/portable devices. The question this paper asks is does this change the study practices of learners at all?

At a technical level, the Net Geners' needs are being met with the new design of learning spaces in universities and colleges (Oblinger, 2006) and perhaps such re-design would make universities better equipped in responding to needs of Net Geners including older generations of learners. On a socio-cultural level, learners' needs are also being met in new literacy studies (NLS) that focus on bridging the 'digital disconnect' (Selwyn, 2006) by encouraging the portability of practices between home and school (e.g., Kent & Facer, 2004); by transferring literacy practices from one context into another as resources (e.g., Satchwell & Ivanic, 2007). Such drive is informed by a host of research studies that have shown "richer" uses of technologies at home and in the community than inside schools, colleges and universities (Selwyn, 2007). The reasons can be found in the infrastructure of schooling or the university campus. Students face a regulated and constrained technology use, which is limited in terms of access, time and support (Leander, 2007; Selwyn, 2007).

New literacy studies have focused on describing and mapping literacies across the domains of home, school and work. Yet, there is hardly any research that investigates study practices and places. Use of images or any visual artefact (e.g. icon mapping) and photo-elicitation have been used to capture everyday literacies (e.g. Mannion & Ivanic, 2007). To attend to the act of studying situated in the fractured spaces of the campus – its libraries, hallways, cafeterias, residential halls and classrooms, this study used one of the most popular web-based services and user-generated content online. It aims to produce empirical evidence of studying from user-generated content on Flickr as data that defines the act of studying. So using social tagging or bookmarking and the popular Flickr to have an insight within the current literacies and technology uses of individuals to further inform research on how students study in this networked and mobile society becomes a key focus of this paper.

Studying would at first glance seem to have nothing to do with collaborative or distributed tagging of information resources, especially images. However, in terms of visual studies of 'picturing' education or learning/literacy practices, it may be a useful and insightful resource to inform research in education and NLS. This should also interest researchers, teachers and librarians in the field of information science or social informatics. Studying, which is mostly isolated with reading, is a sedentary occupation and a rather solitary act. Similarly, social tagging in terms of self-representation or self-expression through self-portrait has both individual and social aspects (van House, 2004). I have been led to investigate studying and student's representation of studying through Flickr. So this study situates itself at the very core of what was being said about the influence of such technologies and the potential impact it has to university students and their ways of engagement.

Images tagged with "studying" constitute a new body of data for NLS and library and information science researchers interested in understanding not so much the phenomenon of photo-blogging or social indexing, but in terms of picturing the main activity to be successful in obtaining a university degree within the act of tagging, using both tags, *studying* and *self*.

Outside the use of Flickr, social scientists are increasingly using photographs to bridge the semantic gap between the word and the image and to enhance the participatory aspect of research. Visual techniques were predominantly used for recording researchers' observations (e.g. providing fieldwork memory aids) or for the dissemination of research findings (Moore, et al., 2008).

Within this study, a close participation with participants become irrelevant as I became a reader or viewer of the photos I found in Flickr and whose authors were not guided or directed with consent or with the research questions that I attend in this paper. So in leading this investigation to see the study practices of learners through personal photography in a web-based service for managing and sharing

images, it adds value to its concerns as images about studying are not prompted or elicited directly through this study. The results on *studying* and *self* were 'natural' in this manner.

On Flickr, studying and tagging come together in ways that reveal how individuals depict themselves as students or in the act of studying and also the material configurations or resources that relates to studying itself as provided in the tags themselves and as visually evident in photographs. Tags include the time of day/week, the season, the subject being studied, how they are cramming, how they are missing fun or play or a lovely day outside being locked indoors, how they become tired or where they are located.

How people conceptualise, experience and represent studying amidst initiatives related to Net Gen and new design of learning spaces become an important point to consider – to truly and practically enhance education and respond to the changing activities, behaviours and habits of students become rather important for LIS and educational researchers and practitioners.

Consequently, this paper marks a research focus designed to uncover and analyse both the graphic/iconic and textual representations of studying as lived by individuals who attends university or schooling. The preliminary work reported here highlights and focuses on identifying what is depicted within the 'frame' of studying images with associated tags, and also a further probing of other tags with studying based on the tags recurring in those photos that included both *studying* and *self*.

This paper presents a useful body of work and visual method drawing upon multidisciplinary theoretical orientation and methodological sensibility that combine STS (science technology studies), HCI (human-computer interaction) and new literacy studies to investigate the images tagged as studying in self-portraits of some Flickr users.

In summary, the specific objectives of photo-imaging and tagging the act of studying were to:

- Explore the social-technical relationships involved in the act of studying as depicted in digital images;

- Provide an insight into the way producers of images frame and present studying through (a) tags; and (b) through what is framed through the camera lens;

- Provide an empirical evidence of the study practices and spaces as picture-framed and self-represented.

Methods

Methodologically, the study of visual material is quite novel to STS. Photo-elicitation is more common in NLS and HCI studies (Beaulieu and de Ricjke, 2009). In collecting data from Flickr, the visual is not just an object of study in its depictions of the act of studying, but also as a method in itself (Beaulieu and de Ricjke, 2009). Imaging is a key part of the way people interact and represent themselves and make sense of the world. Therefore, it becomes rather relevant particularly with social tagging and photo-blogging practices that emerge with Web 2.0 technologies, that visualizing is used as a research method (Crang, 1997).

Approximately 125 million photographs are on Flickr (as of 29 October 2009). The number has more than doubled. Malone (2008) reported 55 million photographs were on Flickr in 2008. A simple keyword search of the full text of Flickr for *studying* yields more than 700,000 results. When the search is limited to tags only, the result is 12,469 items. Two methods were used to reduce the number of results for the purposes of this paper. The search query included the words *studying* and *self,* limited to tags only. This brought the total results to 181 items. Ninety-four (94) photographs were selected for the study. The selection criterion is basically based on images that captures more than the face of the subject. The 94 photographs depicted a range of still compositions including highlighters, open and closed books, notes, papers, highlighted text, lamps, coffee mugs, eyeglasses, computers or laptops, stacks of books, shelves, beds and sofas. Each of the 94 images was viewed and its related tags recorded and tabulated. Also, visible materials included in the photo frame and bodily positions of the subjects not necessarily identified as tags were also noted and tabulated.

To address and picture the practices of studying in relation to technologies and spaces, additional searches were conducted using keywords such as bed, library, online, iPod, campus, and combined with *studying* and limited to tags only. The point is to explore what constitutes 'studying" with the manner in which Flickr image taggers represent themselves pictorially and to juxtapose the images of studying with the discourses that relate to literacy practices, Web 2.0 technologies and the design of learning spaces. It is undeniably true that a space shapes or impacts on human behaviour and learning (.

The image-based analysis is guided by Wagner's (2006) distinctions between *visible, visual* and *visualise*:

- visible – refers to physical-optical attributes of phenomena or materials, regardless of how interesting or meaning they are to researchers or research subjects (p. 55);

- visual – refers to an attribute, dimension or mode of sense perception, not to objects per se (p. 55); determines what gets noticed or not;

- visualise – refers to neither objects nor direct perceptions, but to a mode, process or dimension of understanding, a strategy of comprehension or conceptualisation (p. 55).

Starting with the visual, tags provide the visual orientation of the subject (or author) in each photograph. The number of occurrences of tags related to *studying* with and without *self* was also noted. Specific words or items were chosen in the search limited to tags only in Flickr based on an iterative process of noting the tags that were provided alongside studying and self. Then, the visible materials that are literally seen in each photo were also noted and tabulated. In visualising studying a relational focus is intended in understanding both the social and the technical aspects that shape the study practices of learners. Tables are produced in the following section to capture relevance and relationality in the frequency of tags as they are associated with (a) *studying* and *self*, and (b) *studying* with other tags (i.e. tool- and space-related).

Findings and analysis

Although this study is limited to images tagged with both *studying* and *self* (see Table 1), many other keywords related to the topic are assigned as tags on Flickr. Tables 2 and 3 list some of them and the number of records with those tags (as of 28Oct09), ranked by most to least common.

The following tables are not included to provide a quantitative description and representation of the tags associated with the act of studying as self-representation. The study remains to be qualitative in nature as understandings emerge in the pictorial framing of material resources and bodily positions seen visually or observed in still photos and tagged with keywords.

Table 1: Photos tagged *studying* and *self*

Keyword	Occurrences
Studying	94
Self	88
self portrait	48
Portrait	44
Me	33
book/s	20
reading	18
Study	18
Homework	11
school	9
mac/macbook	8
Student	8
University	8
College	7

exam/s	7
Library	7
computer/s	6
Laptop	6
Paper	6
Glasses	5
Myself	5
Online	5
Tired	5
bed/bedroom	4
Light	4
Notes	4
Working	4
Campus	3
coffee shop	3
Desk	3
hand/s	3
Home	3
Wireless	3
Writing	3
Calculator	2
Class	2
Coffee	2
Couch	2
Dormroom	2
Essay	2
Finals	2
Fingers	2
Handwriting	2
highlighter/s	2
Midterm	2
Pen	2
Pencil	2
Test	2
Typing	2

The photos tagged studying and self in Table 1 include study-related behaviors, such as, reading, handwriting and typing; places of study, such as, school, university, library, campus, bedroom, coffee shop and dormroom; things used for studying, such as, books, computer, laptop, paper, eyeglasses, notes, desk, calculator, highlighter, pen and pencil; reasons for studying, such as, exams, test, mid-term and essay; one's state or feeling, such as being tired or sleepy.

The tags combined with the photos supplied this study essential information about the study practices and the composition or arrangement of individual's study spaces and places and the technologies close at hand while studying.

Table 2: Studying-related keywords as Flickr tags (based on other action words)

Keyword	Occurrences
Reading	918
Learning	916
Work	343
Writing	290
Teaching	216
Sitting	182
Thinking	84
Walking	57
Sleep	48
Talking	24
Eating	18
Watching	18
Listening	16
Standing	16
highlight/ing	15
Lying	8
Gaming	3
Texting	2
Chatting	1

Based on other tags with the word studying, reading remains to be the key activity as depicted in the pictures themselves (see in Table 5). The use of mobile phones or iPods is not at all frequently featured by tagging or by looking at the photos.

Table 3: Studying-related keywords as Flickr tags (based on things or technology words)

Keyword	Occurrences
Homework	428
Computer	372
Exam	307
Friends	297
Desk	286
Coffee	285
Laptop	260
Paper	257
Notes	226
Grass	150
Textbook	121
Teacher	100
Ipod	48
Lecture	40
Phone	39
Iphone	35
Text	32
Snack	16
Facebook	6
Youtube	2

Although the 94 photos included in this study are not necessarily tagged with the keywords shown in Tables 2 and 3, they nevertheless are useful because they were tagged with *studying*.

The tags for the sample of 94 images paints a picture different to what is imagined in terms of the new mediated spaces design that are imagined to support student learning. A search in all of Flickr combining the tag *studying* with other tags representing a variety of settings did turn up some results worth considering, as seen in Table 4.

School, library, university, college and campus emerged as the most frequent places tagged with studying. It may be that people think of study places more of physical settings, where they can read or write and sit inside or outside and less in terms of the virtual, fractured spaces. It could also be that what people presents digitally has to be located specifically. In other words, each row in the table can only suggest some of the contexts in which studying may be tagged. Table 4 as a whole, however, provides us with a sense that studying has not really changed its spaces – not the practical places for studying.

Table 4: Photos with *studying* tag and a contextual (space) tag

Keyword	Occurrences
School	1,301
Library	1,257
University	1,062
College	916
Campus	626
Home	177
Room	155
café/cafeteria	130
Bed	103
Office	71
outdoor/s	64
Dorm	56
Bedroom	49
Hall	32
Internet	31
Wireless	20
Online	12

The sample set is small relative to the total number of images on Flickr. Besides people do not tag in a systematic manner requiring them to make sure every object shown in a photograph has a corresponding tag. Therefore, the second level of analysis focuses on the 'contents' of the photographs. Table 4 visualise the visible materials within the frame of each photo. The following focus questions were considered in viewing the photos:

- was it taken indoors or outdoors;
- was the subject looking at the camera;
- was the subject's face in the photo-frame
- what was the bodily position of the subject (e.g., sitting down)
- what was the specific act that was depicted in the photo (e.g., reading)
- what were the visible materials (things) in the photo.

Seventy-five (80%) of the photos were taken indoors in places like the bedroom or library. Sixty-nine (73%) of the subjects were not looking at the camera and twelve (13%) did not show the subject's face, keeping him or her 'hidden from view'. Reading with 56 instances (60%) seems to be the most common activity related to studying and there were 20 instances (21%) where the subject was holding a pen or pencil or highlighter.

Books, open and/or closed, were featured 51 times and the laptop plus desktop for 24 times. The image of the act of studying has not really changed. Instances that indicated the use of earphones with white

wire dangling between the subject's ears was 5. The typical arrangement on the photos was having a space usually a desk or table (29 instances) or a bed (13 instances) or a coach/sofa (5 instances) or even the floor (3 instances) to spread things out – the laptop, the spiral or notebook, which was featured 5 times, including paper or articles (14 instances).

There were 4 photos where other people were captured in the photo-frame. But most of the time, the subject was on his/her own. This may affirm the fact that studying persists to be considered as a solitary act and a sedentary occupation.

Table 5: Visible items in the 94 photos as viewed

Item	Occurrences
Sitting	59
Reading	56
book/s	51
table	29
Paper	24
eye glasses	20
pen in hand	20
Laptop	18
stuff spread on table	18
spiral /folder	15
Notes	14
Bed	13
lying down	13
text on screen	11
Chair	8
Shelves	8
Window	8
highlighted text	7
Desktop	6
Outside	6
coach/sofa	5
earphones	5
head resting on table	5
highlighter/s	5
Lamp	4
other people	4
stack of books	4
stuff spread on bed	4
drink bottle	3
calculator	3
Candle	3
Curtain	3
Floor	3
Keyboard	3
Mug	3
Bench	2
Foot	2
stuff spread on floor	2
stuff spread on table	2

There are more occurrences of *reading* and *sitting* including *bed*, *eye glasses* and *spiral notebook* or *folders* in the visible tabulation of data in the second analysis than the tags revealed as identified by the users.

Given both the visible tags and the visible materials in the photos, the act of studying does not seem to have changed much, at least not to the extent depicted in (JISC, 2006; Oblinger, 2006; Oblinger & Oblinger, 2005). Inasmuch as, space impacts on individual learning and information behaviour, space has to be engrained in the study practices of those involved to be transformative and effective. Spacing is not a technological act, but a purposeful and practical involvement. In short, spaces have to be *enacted practically* and not merely *applied technically*.

Conclusion

Flickr contains images of individuals who have captured themselves in the act of studying. These images and the tags that were assigned present and represent how individuals study in a manner that is rather different from how university students, particularly Net Geners, have been depicted and how learning spaces are being re-designed. This paper has created an intriguing contrast to a body of work that has ignored the act of studying and how the extent to which this has been shaped by Web 2.0 technologies. Contrary to claims of changed behaviours and habits of students, self-portraits captured whilst studying do not seem to be transformed by iPods or iPhones and other portable devices as widely claimed. Students are still stuck with a stack of books, notes and papers, sitting in private spaces. A preliminary look at a selection of digital photos tagged *studying* and *self* suggests that, with carefully crafted research methods, both image and word can be studied together to help us understand spaces, technologies and literacies relevant to important aspects of university life.

Methodologically, bringing visual materials from Flickr.com, some level of visual analysis and visualisation of socio-technical relations of photos with tags, tags with tags was useful. Its limitation lies in excluding the infrastructure of Flickr itself and the social relations of the authors who became part of this study by photo-imaging and tagging. In short, there is more to the visual ecology of Flickr, the practice of social tagging and photo-blogging than what was accomplished here. Besides, we also have to understand the conditions that make images possible as a networked or digital entity by taking into account the infrastructure of its database, its tags, its network and interface (Beaulieu & de Rijcke, 2009; Lemke, 2002). Still, there is much insight to be gained in being visually attuned to self-representation and social tagging behaviour to see how individuals study within a shared and fractures space through Flickr. We are reminded that the act of studying remains to be a private matter and a rather sedentary occupation.

References

Beaulieu, A. and de Rijcke. S. (2009). Mediated ethnography and the study of networked images – or how to study 'networked realism' as visual knowing. Paper presented at the *First International Visual Methods Conference*, Leeds, UK, 15-17 September, 2009.

Crang, M. (1997). Picturing Practices: Research through the Tourist Gaze. *Progress in Human Geography, 21*, 359-374. https://doi.org/10.1191/030913297669603510

Flickr (2009), Creative Commons. DOI = http://www.flickr.com/creativecommons/

JISC InfoNet (2006). *Designing spaces for effective learning*. HEFCE, UK.

Kent, N. and Facer, K. (2004). Different worlds? A comparison of young people's home and school ICT use. *Journal of Computer Assisted Learning, 20,* 440-455.

Lankshear, C. and Bigum, C. (1999). Literacies and new technologies in school settings. *Pedagogy, Culture and Society*, *7*(3), 445-465. https://doi.org/10.1080/14681369900200068

Leander, K. M. (2007). "You Won't Be Needing Your Laptops Today": Wired Bodies in the Wireless Classroom. In Knobel, M. & Lankshear, C., *A New Literacies Sampler*, New York: Peter Lang, 25-48.

Lemke, J. L. (2002). Travels in hypermodality. *Visual Communication*, *1*(3), 299-325.

Mannion, G. and Ivanic, R. (2007). Mapping Literacy Practices: Theory, Methodology, Methods. *International Journal of Qualitative Studies in Education*, *20*(1), 15-30. https://doi.org/10.1080/09518390600924063

Malone, C.K. (2008). The Social (Tagging) Act of Reading. Paper presented at the Third Annual iConference 2008, UCLA, Los Angeles, CA, 28 February – 1 March 2008. DOI = www.ischools.org/oc/conference08/ic08_PC_Papers.html.

Moore, G., Croxford, B., Adams, M., Refaee, M., Cox, T. and Sharples, S. (2008). The photo-survey research method: capturing life in the city. *Visual Studies, 23*(1), 49-62.

Oblinger, D.G. (2006). *Learning spaces*. Denver, Colorado: EDUCAUSE. Retrieved from http://www.educause.edu/LearningSpaces.

Oblinger, D.G. and Oblinger, J.L. (2005). *Educating the Net Generation: an Educause E-book*. DOI = http://www.educause.edu/educatingthenetgen/ .

Satchwell, C. and Ivanic, R. (2007). The textuality of learning contexts in UK Colleges. *Pedagogy, Culture and Society*, *15*(3), 303-316. https://doi.org/10.1080/14681360701602190

Selwyn, N. (2006). Exploring the 'digital disconnect' between net-savvy students and their schools. *Learning, Media and Technology*, *31*(1), 5-17. https://doi.org/10.1080/17439880500515416

Selwyn, N. (2007). The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning*, *23*(2,) 83-94.

Tapscott, D. (1998). *Growing Up Digital: The Rise of the Net Generation*. New York: McGraw-Hill.

Van House, N. A. (2004). Flickr and Public Image-Sharing: Distant Closeness and Photo Exhibition. In: *CHI '07 Extended Abstracts*, ACM Press, New York, 2717-2722.

Wagner, J. (2006). Visible materials, visualised theory and images of social research. *Visual Studies*, *21*(1), 55-69. https://doi.org/10.1080/14725860600613238

Author contact details:
Judith Guevarra Enriquez
Department of Learning Technologies
University of North Texas
Email: judith.enriquez@unt.edu