

## Engaging higher education students via digital curation

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The emergence and adoption of freely available digital curation tools has shown a public desire to locate, evaluate and organise web content into manageable, shareable collections. These tools occupy a unique niche, often overlapping with other web tools. This necessitates a clear definition of tools laying claim to this space and suggestion and direction for the use of digital curation to build student engagement. A definition is suggested, as well as a discussion on the emotional design principles and how they build sustained engagement with users.

Keywords: digital curation, digital literacy, information literacy, student engagement, higher education

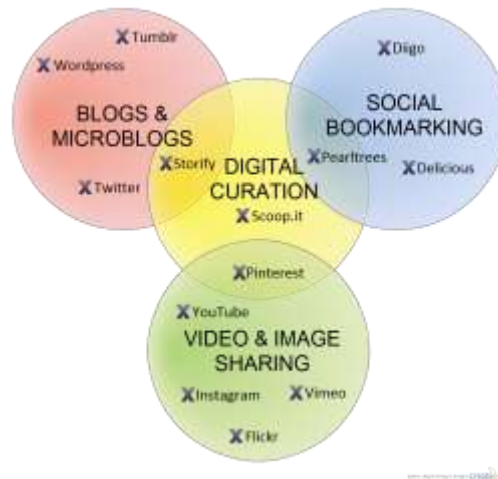
### Introduction

The ubiquity of the internet has led to the easy availability of vast amounts of information. Therefore, the development of information and digital literacy skills is critical for the 21<sup>st</sup> century learner. An emergent suite of digital tools have aligned themselves to the perceived need to locate, select and synthesise web content into open, user-organised collections. Constructively aligned with learning outcomes, these tools potentially support the development of academic reading, writing, and research skills for higher education. This paper will, firstly, establish a definition of digital curation which will robustly stand apart from the mainstream, market-driven catchphrases already in existence; attendant with which is the construction of a framework for evaluating the fit of digital tools to the curation definition. Secondly, the emotional design of these tools to potentially improve student learning outcomes is explored and, thirdly, practical suggestions for using these tools to enhance the learning experience are offered.

### Defining Digital Curation

While definitions of curation have been proposed, they have not been applied to, or tested against, the tools that could benefit from such a classification. Prior definitions have included the addition of an active and ongoing editorial component to a digital collection of content (Scime, 2009) or the human filtering and organisation of information (Rosenbaum, 2010). The maturation of these tools necessitates a more fulsome definition of digital curation, which is proposed as:

an active process whereby content/artefacts are purposely selected to be preserved for future access. In the digital environment, additional elements can be leveraged, such as the inclusion of social media to disseminate collected content, the ability for other users to suggest content or leave comments and the critical evaluation and selection of aggregated content. This latter part especially is important in defining this as an active process.

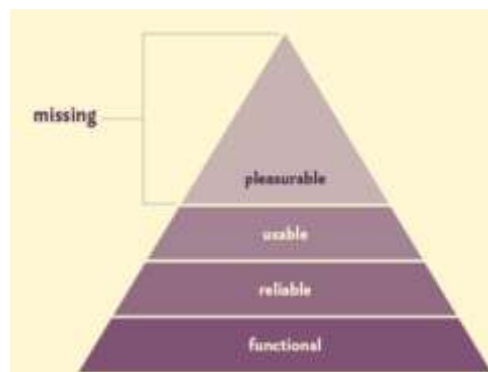


**Figure 1: Digital Curation Tools**

Conceptually, this definition can be expanded to four distinct, yet overlapping areas (Figure 1), informed by the users' primary activity within the tool. These are blogs and microblogs, social bookmarking, video and image sharing, and, at the centre, digital curation. Scoop.it requires the user to define the sources from which potential content will be suggested. These automated searches gather content from the selected sources, but the decision for content inclusion rests completely with the end-user, making this an active process. A social element is also introduced as users can suggest content to others, and collect content from other collections. Some tools (Storify, Pearltrees, and Pinterest) overlap with but are not exclusively curatorial, yet require tangential discussion to establish the validity of the definition proposed by the authors. Storify (a blogging and curatorial service) allows users to actively draw in content from disparate sources (such as news feeds, websites and social media) in order to construct a narrative. However, there is no functionality to embed suggested content from other users or aggregated content based on keywords. Pearltrees facilitates web content collection similar to social bookmarking and visually presents the linked content but it is dependent on user-discovered information. Pinterest curates information and supports image sharing by allowing users to both post their own content on 'pinboards' and collect content from other users (referred to as 're-pinning'). While Pinterest has aspects of digital curation, it lacks the ability to suggest content for the user.

## Emotional Design

The complex interplay between cognitive, emotional and behavioural responses to create positive and engaging online experiences is influenced by Maslow's Hierarchy of Needs (see Maslow, 1954: p. 236). The reconceptualisation of the hierarchy for web user needs is directly relevant to the design and adoption of digital curation tools (see Walter, 2011: see Chapter. 1) (Figure 2). Functional needs refer to the user's ability to complete the task required (despite the lack of 'smoothness' of the experience) while reliability depends on the consistent, 24-hour availability of the web. Usability denotes how the design principles impact on the ease of use of initial exposure to the technology whilst emotion, (represented by the uppermost segment in Figure 2) pertains to positive emotional responses such as pleasure, fun, and delight. This latter is particularly pertinent to the potential of these tools to engage learners.



**Figure 2: Web User Needs (Walter, 2011)**

Prior research has shown a correlation between emotions and the learning process. Isen (see Isen, 1990: p. 76) examined the impact of feelings on cognition and social behaviour, finding that positive feelings facilitate active information recall. Izard, Kagan and Zajonc (see Izard, Kagan & Zajonc, 1984: pp. 5-6) argued that one's emotional state before learning may affect one's cognitive results. Alternatively, emotions may develop throughout the learning process and, in such cases, emotions tend to shift a person's prior goals to something new. It is reasonable to assume that emotions play a role in determining how much knowledge is retained (Hay, 2008: pp. 1269-1283). Excessive negative emotions may hinder the learning process while positive emotions are likely to build confidence and self-efficacy, thus encouraging the student to attempt and persist in new learning opportunities (Bandura, 1982: pp. 122-123). Bandura's social cognitive theory of psychological functioning (see Bandura, 1977) suggests that much of human learning occurs in social environments. Self-efficacy is a key tenet of Bandura's work suggesting that a higher sense of self-efficacy (one's perceived capabilities for learning or performing actions at designated levels) positively affects learning, achievement, self-regulation and motivation. As students perform tasks and observe their learning progress, self-efficacy for continued learning is enhanced (Schunk & Mullen, 2012: p. 221).

Emotional and social components of learning are intrinsically linked. If educational technologies (particularly digital curation tools) can yield positive emotional responses, then their use in higher education potentially leads to positive learning experiences and, by extension, improvement in learning outcomes. In a study that explored the relationship between emotions and the acquisition of computer knowledge, it was found that negative emotions were negatively correlated with ability (in relation to nine computer-based skills measures), while positive emotions (happiness) showed a positive correlation (Hay, 2008: p. 1275). Social networks, such as Twitter (Junco, Heiberger & Loken, 2011: pp. 119-132; Hoffman, 2009: pp. 92-100) have shown a positive influence on student motivation, retention and engagement, while similar conclusions have been drawn in previous studies of community college students (Hughes, Karp & O'Gara, 2009: p. 195; Karp & Hughes, 2009: pp. 73-82). In these cases, students tended to benefit from social experiences integrated with their course learning. While the existing research has focused on harnessing social media tools to increase student involvement, the potential of digital technologies to emit an emotional response and engage the learner is still in its infancy.

This paper proposes that digital curation tools (specifically Storify, Pearltrees, Pinterest and Scoop.it) can be utilised in higher education curricula to increase student motivation and engagement and, potentially, improve student learning outcomes. Evidence (see Reeve, 2012: p. 149) suggests that students' engaged in self-directed learning display higher levels of motivation, and it is the convergence of autonomy, engagement and educational technology driving our exploration of these tools. Each tool fosters a sense of ownership and potential for personalised learning. Moreover, the aesthetically pleasing layout of these tools is a foundation for emotional attachment which makes sustained engagement in the activity desirable. The learner also gains a sense of autonomy and ownership of the digital collection. We contend that this has the potential to encourage the learner to interact with these tools on a regular basis. The learner has a certain degree of control over their learning journey, in terms of the ability to synthesise and filter the information coming to them, and control over the final presentation of that content. If the social component of learning can be successfully integrated into the curricula, then it can be reasonably argued that curation likewise has educational potential.

## **Digital Curation Tools in Higher Education**

Table 1 offers a number of suggestions for using each of these digital curation tools in higher education.

**Table 1: Applications of Digital Curation Tools in Higher Education**

Tool	Possible use in Higher Education	Extending on the work of...
Storify	<b>Journalism students</b> could use Storify to depict a current story as a series of images and social media posts to engage a wider, authentic readership. <b>Political science students</b> could map an election, and responses to policy in this format.	Harsch, B, 2011 Markey, L, 2011
Pearltrees	<b>Philosophy students</b> could evaluate and visually organise disparate web resources for assessment tasks. <b>Tutors</b> could curate and build a visual representation of resources in their subject area.	Team Plenk, 2010
Pinterest	<b>Visual Arts students</b> could create a portfolio showcasing their work whilst gathering inspiration from others. <b>Marketing students</b> could explore brand image and social media marketing strategies.	Yale University, 2012 Duke University, 2012
Scoop.it	<b>Literature students</b> could filter and synthesise web content, creating an annotated bibliography. <b>Knowledge Management students</b> could create a group repository of knowledge.	Dixon, S, 2012

## Conclusion

Emotional design principles can shape learning and teaching experiences, and recognising their significance merits further consideration in both learning theory and pedagogical practice. This paper has offered a number of suggestions for embedding digital curation tools into higher education, focusing on increasing student motivation, engagement and, potentially, student learning outcomes. The proposed definition seeks to give practitioners a framework for aligning a tools' purpose with learning and assessment activities.

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**Please cite as:** Antonio, A., Martin, N. & Stagg, A. (2012) Engaging higher education students via digital curation. In M. Brown, M. Hartnett & T. Stewart (Eds.), *Future challenges, sustainable futures*. In Proceedings ascilite Wellington 2012. (pp. 55-59).

<https://doi.org/10.14742/apubs.2012.1664>

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