Using social media as e-Portfolios to support learning in higher education: a literature analysis

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Abstract

Although e-Portfolio is acknowledged as one of the powerful pedagogical practices that enhance learning in higher education (HE), not much is known about the types of social media (SM) utilized as e-Portfolios and the benefits for students. This literature analysis, using directed content analysis, aims to explore the above vacuum. The research questions in this study are: (1) In what ways do the SM as e-Portfolios benefit students in HE? (2) To what extent are the benefits of SM as e-Portfolios comparable to those of conventional e-Portfolios? and (3) What are the drawbacks that practitioners and researchers need to be concerned with? Findings indicate that blogs are the most popular SM used as e-Portfolios to support learning, followed by social networking sites and collaborative projects. The study yields 13 advantages and 12 drawbacks when SM is manipulated as e-Portfolios. These findings conclude that the use of SM as e-Portfolios has a great potential in supporting students’ learning and development by providing an environment for them to learn meaningfully from their experiences and engage in critical reflections and dialogues that allow them to gain new knowledge and valuable insights and thus, improve their skills. A pedagogical framework for the planning and implementation of SM as e-Portfolios is suggested based on the findings and aims of the papers that were reviewed.

Keywords Social media · Pedagogical issues · Learning communities · Evaluation methodologies · Post-secondary education

e-Portfolio has been increasingly utilized in different academic and professional settings to serve numerous purposes, ranging from teaching, learning, assessment to
advertisement and employment in different fields and different parts of the world, such as the United States of America (Eynon et al., 2014), Middle East (Dougherty & Coelho, 2017), Indonesia (Yanti et al., 2018), Malaysia (Ngui et al., 2019) and in the United Kingdom and Europe (Cambridge et al., 2009).

In the education field, e-Portfolios offer a space and platform for students and faculty to co-create meaningful learning experiences through active and collaborative engagement to make meaning of a student’s lived, experienced, and delivered learning (Buyarski et al., 2017). It provides not just opportunities for students to discover and explore their role as learners, make connections, and more intentionally integrate their learning, but also a more authentic way of evaluating student learning and program success for administrators (Buyarski et al., 2017). e-Portfolio is recognized as a high-impact practice and is widely adopted (Batson et al., 2017) in higher education (HE) because it has the potential to produce graduates who are self-directed learners and autonomous thinkers (Buyarski et al., 2017). It embraces that learning is social, situated, and best energized by authentic contexts (Batson et al., 2017), promotes collaborative, reflective, and integrative learning, and allows learners to demonstrate learning through multiple modes—visual, oral, written, and video (Buyarski et al., 2017).

In a literature-based discussion of e-Portfolios as a pedagogical tool, Butler (2010) focused on the use of e-Portfolios by students in HE and provided a thorough summary of the literature. She summarized 16 main benefits for students in HE: skill development, evidence of learning, reflection, psychological benefits, feedback, assessment, artifacts, maintenance, portability and sharing, access, organization, storage, cost, standardization, multiple views, and privacy. These key advantages could serve as a framework for conventional e-Portfolios and are useful for comparing different forms of e-Portfolios; especially when the wave of Web 2.0 technology has swept across the HE and society at large, and that it would inevitably transform the e-Portfolio movement (Clark & Eynon, 2009).

Researchers such as Chuang (2010) and Rubrico (2012) have initiated early investigations on the utilization of social media (SM) as e-Portfolios to support students’ learning. These early investigations were mainly due to the massive and rapid development of research on SM (particularly Facebook) and the teaching and learning at the tail end of Web 2.0 that transpired encouraging findings (e.g., Baran, 2010; Gray et al., 2010; Kabilan et al., 2010). As a result, SM has been increasingly used as e-Portfolios because of their potential to offer students meaningful learning by engaging them as a community of practice, facilitating their knowledge creation, and enhancing their professional development (Kabilan, 2016). These are possible because the characteristics of SM enable the facilitation of students’ social interaction, social collaboration, content sharing, user-generated content (UGC), and social connectedness (Doyle et al., 2015). Chu (2020) identifies three major SM features (i.e., UGC, sharing of UGC, and community). He associates them to prevalent learning theories and their fundamental assumptions that explain why the integration of social media in educational practices can support students’ learning, i.e., social constructivist theory, social cognitive theory, the cognitive theory of multimedia learning, social connectivism, and theories of social interactions such as social information processing theory, situated learning theory, and computer-supported
collaborative learning (Chu, 2020). Most of the learning theories share a similar view that learning is social and situated, consistent with the underlying principles of e-Portfolio.

The above affirms the potentials and promises of SM as e-Portfolios, but to what extent? Hence, this study, based on literature analysis, attempts to answer the three research questions as follows:

1. In what ways do the SM as e-Portfolios benefit students in HE?
2. To what extent are the benefits of SM as e-Portfolios comparable to those of conventional e-Portfolios?
3. What are the drawbacks that practitioners and researchers need to be concerned with?

Findings from this study would enable practitioners in HE to plan and implement e-Portfolios using SM meaningfully and effectively. Also, researchers would be able to garner helpful understanding and insights to develop suitable pedagogical and research frameworks, especially when research on SM-based e-Portfolios is still in its infancy stage (Kabilan, 2016).

Methods

In this review, SM is defined as Internet-based platforms in which the content and applications are continuously modified by all users in a participative culture and collaborative manner, allowing the creation and exchange of UGC (Kaplan & Haenlein, 2010). According to Kaplan and Haenlein’s (2010) categorization of SM based on two key elements (i.e., social presence/media richness and self-presentation/self-disclosure), there are six types of SM: blogs (e.g., WordPress), collaborative projects (e.g., Wikipedia), social networking sites (SNS) (e.g., Facebook, MySpace), content communities (e.g., Youtube, Slideshare), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft, EverQuest). The researchers adopt this categorization of SM by Kaplan and Haenlein (2010) to classify the SM platforms used as e-Portfolios in this review.

Literature search and procedure

The researchers conducted a literature search of secondary data comprised of research-based full-text articles published in journals, conference proceedings, colloquiums, and book chapters from 2008 to 2020. The secondary data that were published before 2008 were excluded. The literature search was limited to the recent decade so that the researchers could identify the trend of using SM-based e-Portfolios in HE, which is more likely to remain relevant in the rapidly changing world. Relevant peer-reviewed publications found in four online databases—Scopus, Emerald, ProQuest, and EBSCOhost—are considered in this review, as they are credible.
and meet specific standards of scholarship (Knopf, 2006). Therefore, other databases were excluded from the literature search.

The researchers initially searched for relevant research-based full-text articles published in journals found in the four databases. Different combinations of keywords were searched using these eight terms: Social media, e-Portfolio(s), eportfolio(s), electronic portfolio(s), digital portfolio(s), blog, social networking sites, and Facebook. For example, ["social media" AND "e-Portfolios"], ["social media" AND "electronic portfolio"], and ["social media" AND "digital portfolio"]. Forty-two (42) related publications were selected by scanning the titles, abstracts, and keywords. This search result was further refined using the three labels for classifying an article suggested by Ali and Petersen (2014), i.e., relevant, irrelevant, or uncertain results. Two (2) reviewers scrutinised the main body of the articles and decided whether each article was relevant, irrelevant or uncertain to be included in the review. The results of the selection process are presented in Table 1. The inter-rater reliability was calculated, and the result shows an almost perfect agreement level (percentage of agreement = 95.12% and Cohen’s Kappa statistic, κ = 0.90). The three (3) articles in categories D and E (in Table 1) were discussed and re-categorized in either categories A or F. The purpose of the discussion and re-categorization was to resolve disagreements among reviewers. These steps increased the potential for finding relevant articles and reduced ambiguity on what should happen to articles in categories B, C, D, and E (Ali & Petersen, 2014). The final selection result confirmed 17 articles for the review; however, this figure is relatively low.

Due to the limited initial literature search findings, a second literature search was undertaken. The search extended to include conference proceedings, colloquia, and book chapters, found in the four databases using the exact keyword search and screening criteria. Sixty-seven (67) potential articles were identified and labelled using the same categorization criteria, and the results are presented in Table 2. The inter-rater reliability was calculated, and the result showed an

Table 1  Article selection results by two reviewers in the initial literature search

| Reviewer 1 | Reviewer 2 | Relevant | Uncertain | Irrelevant |
|------------|------------|----------|-----------|------------|
| A (n=16)   | B (n=0)    | D (n=0)  |
| B (n=0)    | C (n=0)    | E (n=1)  |
| D (n=2)    | E (n=0)    | F (n=23) |
| Category   | No. of articles | No. of articles post-discussion | Remarks |
| A          | 16          | 17        | Accepted for review |
| B          | 0           | 0         | –           |
| C          | 0           | 0         | –           |
| D          | 2           | 0         | Re-categorised after discussion |
| E          | 1           | 0         | Re-categorised after discussion |
| F          | 23          | 25        | Excluded for review |
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almost perfect agreement level (percentage of agreement = 90.16% and Cohen’s Kappa statistic, \( \kappa = 0.80 \)). The 11 articles in categories B, D, and E (in Table 2) were discussed and re-categorized in either category A or F. The final selection results confirmed a total of 31 articles for the inclusion of the review (See Online Resource 1). Figure 1 shows the flow diagram of the second literature search.

### Table 2 Article selection results by two reviewers in the second literature search

| Category | No. of articles | No. of articles post-discussion | Remarks                      |
|----------|-----------------|---------------------------------|------------------------------|
| A        | 28              | 31                              | Accepted for review          |
| B        | 3               | 0                               | Accepted for review and re-categorized after discussion |
| C        | 0               | 0                               | –                            |
| D        | 2               | 0                               | Re-categorised after discussion |
| E        | 6               | 0                               | Re-categorised after discussion |
| F        | 28              | 36                              | Excluded for review          |

### Fig. 1 Flow diagram of second literature search
Data analysis

The researchers employed a directed content analysis, which starts with a theory or relevant research findings as a guide for initial codes, and later revising and refining the findings as the analysis proceeded (Hsieh & Shannon, 2005). In addressing the objectives of this paper, the articles were analyzed according to the 16 main benefits of e-Portfolios for students in HE as identified by Butler (2010). There were two aims of using Butler’s (2010) categories in analyzing the findings: (1) to ensure the current findings could be compared to the mainstream and recognized literature of e-Portfolio for learning (that is, to find out to what extent do SM as e-Portfolios benefit students in HE); and (2) to identify new themes/categories (including benefits and drawbacks) that might emerge as a direct result of using SM as e-Portfolios.

The researchers utilized a three-column schema method, as suggested by Riding (2001) and Kabilan (2004), to code, arrange, and organize the findings (See Online Resource 2). The first column identifies the 16 e-Portfolio aspects, whereas the second column is the ‘criterion’ column, which defines the aspects of the e-Portfolio. These two columns are derived from the 16 categories of Butler’s (2010) findings mentioned above. The end column is the ‘example’ column that presents samples of findings/conclusions from the literature analysis. Findings of quantitative data and qualitative data, such as excerpts of participants’ actual responses, were looked at, summarized, and reported in terms of their general conclusion and significant overall findings to support the cases and arguments presented in this article.

Findings and discussion

The 31 selected articles encompass 11 different academic fields (education, educational technology, languages, medical education, counselor education, economics education, arts education, social education, e-commerce, multimedia design, and carpentry) and a university student mobility program. Based on the SM categorization by Kaplan and Haenlein (2010), only three categories of SM were used as e-Portfolios in the reviewed articles. As shown in Table 3, blogs are the most popular SM category used as e-Portfolios, followed by social networking sites (SNS) and collaborative projects, respectively. A possible explanation for this result is that both blogs and SNS portray a high degree of self-presentation/self-disclosure, in which personal information, thoughts, feelings, likes, and dislikes are shared publicly (Kaplan & Haenlein, 2010). This feature encourages users to connect with others by creating and sharing personal information profiles that include photos, videos, audio files, and blogs, as well as allowing others to have access to their information and communicate with one another (Kaplan & Haenlein, 2010). The use of other SM categories (content communities, virtual social worlds, and virtual game worlds) as e-Portfolios were not found in the articles. Specifically, among the reviewed articles, WordPress is the most popular blogs used as e-Portfolios, whereas Facebook is the most popular SNS used as e-Portfolios.
Research Question 1: In what ways do the SM as e-Portfolios benefit students in HE?

Based on the 16 main benefits of e-Portfolios listed by Butler (2010), the data analysis found that the e-Portfolios created and developed using SM benefit students of HE through 13 ways. Benefits related to portability and sharing, standardization, and privacy were absence in the reviewed articles. The 13 benefits offered by SM when used as e-Portfolios are presented and discussed as follows:

Skill development

SM-based e-Portfolios benefited students in developing their skills. Past studies reported students’ skill development in areas as follows:

- language (Gordon, 2017; McGregor, 2020) and language learning skills (Gordon, 2017);
- writing abilities (Aydin, 2014; Barrot, 2021; Gabaudan, 2016; Kabilan & Khan, 2010; Rubrico, 2012; van Wyk, 2017; Wicks & Lumpe, 2015);
- reading skills (Aydin, 2014; Barrot, 2016; Kabilan & Khan, 2010);
- speaking skills (Huang & Hung, 2010; McGregor, 2020);
- critical thinking skill (Blaschke, 2014; Cleveland, 2018; Kabilan, 2016; Kabilan & Khan, 2010; van Wyk, 2017);

Table 3 Social media category used in the 31 articles

| No | Social media category                      | Number of studies | Name of social media (n)                                                                 |
|----|-------------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| 1  | Blogs                                     | 19                | a. WordPress (5)                                                                         |
|    |                                           |                   | b. Blogger and WordPress (1)                                                              |
|    |                                           |                   | c. WordPress and Blogger (1)                                                              |
|    |                                           |                   | d. Blogger and Blogspot (1)                                                              |
|    |                                           |                   | e. Station of Wretch, Yahoo (1)                                                          |
|    |                                           |                   | f. Wretch (1)                                                                            |
|    |                                           |                   | g. Tumblr (1)                                                                           |
|    |                                           |                   | h. University’s blogfolio (1)                                                            |
|    |                                           |                   | i. Weblog (1)                                                                           |
|    |                                           |                   | j. Web Blog (2)                                                                         |
|    |                                           |                   | k. Not mentioned (4)                                                                    |
| 2  | Blogs and Collaborative Projects          | 2                 | a. WordPress and Google Sites (1)                                                         |
|    |                                           |                   | b. Blogger and Wiki (1)                                                                  |
| 3  | Social Networking Sites                   | 9                 | a. Facebook (6)                                                                          |
|    |                                           |                   | b. Google + (1)                                                                         |
|    |                                           |                   | c. Facebook and Google + (1)                                                             |
|    |                                           |                   | d. Google Group (1)                                                                     |
| 4  | No specific category mentioned            | 1                 | Students had the freedom to create their e-Portfolio using an SM of their choice         |
• technological skills (Gabaudan, 2016; Kabilan & Khan, 2010; Tur & Marín, 2015; Tur & Urbina, 2014);
• research skills (Aydin, 2014);
• designing skills and knowledge of different cultures (Gordon, 2017);
• teaching skills and organization skills (Kabilan, 2016);
• scientific literacy (Wijayanti & Basyar, 2016); and
• vocabulary (McGregor, 2020).

Students’ language and language learning skills have substantially improved because they have to think about linguistics almost all the time while maintaining their e-Portfolio (Gordon, 2017). McGregor (2020) highlights that the use of SM-based e-Portfolio during language study abroad promoted metalinguistic awareness. It can significantly impact language gain because students had the opportunity to reflect on their language learning and pose questions to an expert mentor (McGregor, 2020). This mentor functioned as the ‘more knowledgeable other,’ assisting them in assimilating new information and assigning meaning to their experiences (McGregor, 2020). Besides that, students’ reading skills are nurtured through the continuous reading of related topics (Aydin, 2014; Barrot, 2016; Kabilan & Khan, 2010). Moreover, students’ speaking skills were enhanced through additional opportunities of oral practices on the SM-based e-Portfolios, ubiquitously—anytime and anywhere (Huang & Hung, 2010). Studies also reported the development of critical thinking skills because the activities on SM-based e-Portfolios required students to rethink, reflect, be critical and be more creative (Blaschke, 2014; Cleveland, 2018; Kabilan, 2016; Kabilan & Khan, 2010; van Wyk, 2017).

Concerning writing abilities, students’ responses have become more matured, well-written, and constructive (Kabilan & Khan, 2010) as they learn new words and grammar (Aydin, 2014) and new ways of using the language from reading peers’ work and editing while writing (Kabilan & Khan, 2010). Besides that, students’ writing improved because they reviewed their work before posting as they were conscious that others would read them (Rubrico, 2012). Findings also indicate that SM-based e-Portfolios provide students the opportunities to write (Gabaudan, 2016; Kabilan & Khan, 2010) and the space to articulate, share and summarize (Wicks & Lumpe, 2015) what they learned through reflective journal writing (van Wyk, 2017). Furthermore, Barrot’s (2021) quasi-experimental study confirms that students who use Facebook-based e-Portfolio have outperformed those who use a conventional e-Portfolio ($t_{[87]} = 3.0974, p = 0.003$), with a large effect size ($d = 0.661$)—particularly in coherence and cohesion ($t_{[87]} = 3.0877, p = 0.001$), lexical resource ($t_{[87]} = 3.0079, p = 0.002$), and grammatical range and accuracy ($t_{[87]} = 2.3925, p = 0.009$) in writing. This significant improvement is due to the captured audience and high visibility factors that SM as e-Portfolios brings (Barrot, 2021). A captured audience promotes students’ sense of audience, making them more reflective and sensitive to the needs and interests of their target readers (Barrot, 2021). The high visibility of the SM exposes students to social pressure, which further pushes them to produce better-written output (Barrot, 2021).

The observed skill development in the literature could be attributed to the process of students showcasing and analyzing their learning achievements and personal
experiences in the SM-based e-Portfolios. This process allows students to constantly and continuously link theories and practices in a useful and meaningful manner (Lai & Wu, 2016).

**Evidence of learning**

e-Portfolios on SM allow an orderly collection/documentation of evidence about students’ learning (Aguaded et al., 2013). They allow efficient and effective monitoring of students’ learning progress (Aguaded et al., 2013; Barrot, 2016) as it is easy to document growth over time (Denton & Wicks, 2013; Wicks & Lumpe, 2015). They can capture a complete picture of students’ skills and experience (Wicks & Lumpe, 2015), where students reflect on their learning and identify which competency standards are addressed (Denton & Wicks, 2013; Tur & Marín, 2015). Students viewed their SM-based e-Portfolio as “a journal about our journey of acquiring knowledge” (Kabilan & Khan, 2010, p. 235). The evidence of learning is also useful to teachers for planning upcoming tasks, and assessing and monitoring the learning-teaching progress (Aguaded et al., 2013). It benefits students and teachers in Wicks and Lumpe’s (2015) study. The passing rate increased from 89% to approximately 99% when students and faculty became more familiar with formative course reflections and summative meta-reflections in their e-Portfolios (Wicks & Lumpe, 2015), which leads to increased active learner engagement and responsibilities for own learning (Kabilan, 2016).

**Reflection**

The studies in this review have critically integrated reflective activities (e.g., Chuang, 2010; Cleveland, 2018; Kabilan, 2016; McGregor, 2020; Tur & Marín, 2015; van Wyk, 2017). Reflection is an integral feature of e-Portfolios because it facilitates students to rethink their learning as professionals, gain new knowledge, improve soft skills, organize activities (Kabilan, 2016), and develop their beliefs and identities (Tang & Lam, 2014). Reflective activities encourage students to become analytical about what is going on around them (Gabaudan, 2016) as they ponder on their experiences, analyze them and think differently about what they have experienced and perceived (Blaschke, 2014; Gabaudan, 2016; Yang & Wu, 2013). Reflective journal writing acts as a productive guidance and evaluation strategy to enhance learning, contributing to insightful personal and professional development (van Wyk, 2017).

Learning has become more significant through reading own reflective journal entries and others’ reflections as one could gain valuable insights into what has been learned and new knowledge and skills that have been shared (Kabilan, 2016; Tur & Marín, 2015; van Wyk, 2017). This supports the notion that reflection and self-reflection are the basis of competence development because they are closely linked to learning and, thus, the growth of one’s capacity for action (Slepcevic-Zach & Stock, 2018). Therefore, “the real value of an e-Portfolio is in the reflection and learning that is documented therein, not just the collection of work” (Barrett, 2010,
p. 6). Students make meaning out of unconnected and diverse information derived from the various reflections. As connectivism proposes, learning is a process of connecting information sources, recognizing patterns and similarities, and synthesizing ideas and information, which leads to learning empowerment (Wachira et al., 2019).

**Psychological effect**

In general, students have positive attitudes towards using SM as e-Portfolios (Aydin, 2014; Barrot, 2021; Kabilan & Khan, 2010; Tur & Marín, 2015; van Wyk, 2017). For example, students perceive their e-Portfolios as “a pleasant experience to learn new things” and learn “in various ways” (Kabilan & Khan, 2010, p. 239). The positive attitude may enhance students’ performance because SM-based e-Portfolios are easy to use, accessible everywhere, more flexible than printed portfolios, highly shareable and they allow synchronous interactions (Barrot, 2021). The use of SM-based e-Portfolios also showed positive effects on students’ self-efficacy for both performance and learning, and recorded very high mean scores (Yang & Wu, 2013). It boosted students’ confidence (Blaschke, 2014; Gabaudan, 2016; Kabilan & Khan, 2010) and has awakened their spirit and determination to seriously (re)consider their professional identity and self-development (Kabilan, 2016). Students have become more committed to their career goals and post-graduate plans (Sun et al., 2018).

The use of SM-based e-Portfolios gives students a sense of ownership because each e-Portfolio is their property, motivating them to contribute more (Kabilan & Khan, 2010). Therefore, students produce a more polished product as they know the public would see it (Barrot, 2021; Wicks & Lumpe, 2015). The anxiety students experienced upon knowing that they were to publish work on SM-based e-Portfolios has motivated them to perform better and be more cautious of the content and language they would use (Barrot, 2021). Besides, “shy students can share their views” (Rubrico, 2012, p. 203), and it could reduce students’ speaking anxiety as they can practise without the presence of an immediate audience that would challenge their viewpoints as they spoke (Huang & Hung, 2010). It is important to note that the present findings insinuate that SM-based e-Portfolios can foster a sense of personal accomplishment and a feeling of satisfaction that could come from mastering their use. It also has therapeutic values as it allows students to vent out via reflection (Gabaudan, 2016) and offers emotional support as others would leave comments asking peers “not to give up” (Tang & Lam, 2014, p. 81). Chu (2020) associates this support to the help from ‘the more knowledgeable others’ in Vygotsky’s (1978) social constructivist theory. As the SM features allow users to interact and collaborate with others irrespective of their physical locations, they provide students with the cognitive and emotional support that could maximize their ability to reach higher academic accomplishments (Chu, 2020).

**Feedback**

SM, when used as e-Portfolios, benefitted students in exchanging feedback and ideas (Blau et al., 2013; Chuang, 2010; Gabaudan, 2016; Kabilan, 2016; Kabilan & Khan, 2010; McGregor, 2020; Tang & Lam, 2014). The commenting feature is vital and
cannot be omitted when implementing e-Portfolios on SM (Yang & Chang, 2012). The rich input of feedback and comments from peers, lecturers, and the public encourages discussions and promotes connectedness (Chuang, 2010; Kabilan, 2016; Kabilan & Khan, 2010). Students believe that active participation among members could inspire them to reflect more because reading comments from others reminded them to think from different perspectives (Tang & Lam, 2014). This finding confirms that interactive use of a particular SM platform is associated with higher positive attitudes towards online peer interaction (Yang & Chang, 2012). Students also provided formative feedback to motivate others because they believed they could help each other (Kabilan & Khan, 2010) and are satisfied with being a part of an online community of practice (Kabilan, 2016). Moreover, the use of SM as e-Portfolios can amplify peer comments and improve dialogues with peers even without active facilitation by instructors (Blau et al., 2013). Feedback and interaction are useful to improve students’ subsequent posts (Gabaudan, 2016). They enable students to reconstruct new knowledge using their peers’ knowledge and consequently empower them to evolve, grow, and advance (Kabilan, 2016; McGregor, 2020).

Other than exchanging feedback and ideas with peers, the findings show that students emphasize communication with and feedback from their lecturer/mentor (Aguaded et al., 2013; Hegarty & Thompson, 2019). A common view identified among the articles was that a mentor’s (or lecturer’s) constructive and practical feedback is most helpful in enriching students’ understanding of preparing e-Portfolios and learning content (Gordon, 2017; Hegarty & Thompson, 2019; Tang & Lam, 2014). A possible explanation for this finding is that the lecturer’s feedback represents the expectation of the course and serves as a means of confirming whether students are on the right track. One student’s expression encapsulates the dichotomous relationship of the independent and dependent way of learning, “Loved it. Given enough freedom to make our own mistakes, yet the instructor was there for you” (Yang & Wu, 2013, p. 174). Furthermore, when given in a rubric format, feedback is more useful than a general comment format because students know what is expected of them (Gabaudan, 2016).

The findings reported here suggest that the presence of feedback and interaction on SM-based e-Portfolios creates an environment where students can learn from their experiences in the context of others, confirming Young’s (2015) notion that learning is a knowledge-building activity that is social. It is also anchored in the notion of social capital: the more contact with other people, the more one will gain (Glaeser, 2001), as SM can provide students a broader potential audience than only their peers and instructors. According to Glaeser (2001), social capital is defined as the social resources (i.e., the norms, networks, and other related forms of social connection) which increase the returns to an individual or a community from interactions with others. As SM allow feedback and interaction among users, using them as e-Portfolio platforms can increase their social capital, which can also lead to the growth of human capital.
Assessment

e-Portfolio via SM can foster a formative and holistic assessment because it helps students assess their own learning (Wicks & Lumpe, 2015). It facilitates students to document and assess their individual learning processes and progress, and evaluate study habits (Blaschke, 2014). Besides, they enable educators to monitor students’ progress, take action and provide feedback for problems that students’ encounter (Aguaded et al., 2013) through the course content and reflective processes not just at the end of the semester, but also throughout the semester (Cleveland, 2018). Assessment is also considered a driving force for participation (Tang & Lam, 2014). Students admit that they would not have participated in the activities if the e-Portfolios were not assessed and graded (Gabaudan, 2016; Tang & Lam, 2014). Therefore, it is essential to build adequate incentives into the process of completing a task so that students would fully engage with it and subsequently be able to realize its value (Gabaudan, 2016). In Rubrico’s (2012) study, 28 out of 31 students commented that peer reviews (i.e., peer correction of essays and evaluation of other tasks) help and motivate them to do better next time. Peer reviews could inform students on the mistakes they should avoid, good things they should continue to practise, and new things they should try on, either when they were evaluating others or being evaluated (Rubrico, 2012).

Artifacts

Artifacts in e-Portfolios help students in identifying weaknesses, which may improve their specific and overall performance. For example, a student shares that “through listening to my own artifacts, I could find the parts of my speaking that need improvement, like pronunciation and vocabulary” (Huang & Hung, 2010, p. E86). Moreover, most students (76%) believe that using a blog to present artifacts helps in discussion and communication (Chuang, 2010). While some students have gained meaningful learning by producing artifacts for their e-Portfolios (van Wyk, 2017), others like seeing the works produced by their peers as it provides them with ideas (Yang & Wu, 2013). Consequently, artifacts serve as meaningful learning materials because students can reflect on them and receive feedback from peers and teachers (van Wyk, 2017) and learn how others manage and surmount specific tasks (Yang & Wu, 2013) to perform better in the future. These results disclose that various artifacts can be integrated into the SM-based e-Portfolios and used as resources for self-assessment, discussion, references, and reflections.

Maintenance

e-Portfolios on SM are user-friendly (Barrot, 2016, 2021; Chuang, 2010; Denton & Wicks, 2013; Gabaudan, 2016; McGregor, 2020; Rubrico, 2012), particularly blogs and SNS in this review. In line with Butler’s (2010) findings, they are easy to maintain, edit, and update as students could revisit a topic and revise previous posts (Chuang, 2010) or add new perspectives/information (Chuang, 2010; Denton &
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Wicks, 2013). They are also efficient and convenient as being “useful for recording, organizing, and sharing program requirements, assignments, and accomplishments,” easy to navigate (Denton & Wicks, 2013, p. 131), and very environment-friendly to submit work online (Barrot, 2021; Rubrico, 2012). Another reason for the ease of use is that students are already familiar with using specific SM platforms socially before using them as their e-Portfolios (Hegarty & Thompson, 2019).

Access

The study by Sun et al. (2018) discloses that server activity logs and Google Analytics have captured 61.5% of the website traffic from external, non-university visitors, indicating that the learning space is not restricted within the university’s online vicinity. Many students have received positive feedback on their design work posted online and have extended their blogs to include work done out of class and speak with pride of how other external bloggers follow, like, or re-blog their posts (Radclyffe-Thomas, 2012). A student also shares that she likes to follow others’ blogs because she could read about challenges faced by others and feel reassured that she is not alone (Gabaudan, 2016). Therefore, having access to view and leave comments on others’ e-Portfolios could benefit both the owner and visitors. This further confirms the idea of social capital as access to broader social networks enables users to learn more and gain more support from their interactions with others (Glaeser, 2001; Glaeser et al., 1999).

Organization

Students are contented with the easy archiving feature of selected artifacts/contents in their blog-based e-Portfolio system (by date and designed categories) (Chuang, 2010). They could easily identify and establish the development and standards of their selected artifacts and tie them to their overall learning outcomes (Chuang, 2010). For example, “I can easily categorize my postings according to my learning goals… and the organization is clear and my portfolio is easy to update and archive” (Chuang, 2010, p. 219). Similarly, on Facebook, students could organize and select information and ideas from their e-Portfolio collection comprised of their own knowledge and peers’ knowledge (Kabilan, 2016). It is more flexible than printed portfolios as students can “make it more beautiful and more organized” (Barrot, 2021, p. 13). These benefits are possible because of their electronic nature (Butler, 2010).

Storage

The SM-based e-Portfolios have an automated archiving system that serves as resource storage (Chang et al., 2014; Chuang, 2010; Kabilan, 2016). It can be used for gathering, exchanging, and sharing information, materials, ideas, and experiences, and engaging/initiating professional practices with others (Kabilan, 2016). These activities could be done at any time, and the information posted will be stored...
on the platform and will not be lost (Chang et al., 2014). It also operates as a reference point for students’ final write-up (Gabaudan, 2016) and showcases what they have done so far and need to do in the future (Yang & Wu, 2013). Students believe it is also a “good place to track” their tasks, activities, and progress, and a “good source for links and notes” (Rubrico, 2012, p. 203). Students can continue to access, maintain and manage their sites at their own accord because their accounts are not registered on university servers (Wicks & Lumpe, 2015), in which access to it may be ceased after they graduated. An explanation of why e-Portfolios are easy and efficient to store is that they do not rely on large binders full of paper (Butler, 2010), and it is the same case for SM when used as e-Portfolios.

Cost

It is a highly cost-effective approach for institutions to implement e-Portfolios on SM like WordPress (Wicks & Lumpe, 2015) and Facebook (Barrot, 2016). WordPress accounts are free of charge, and hence the university would not need to allocate/seek funds or charge fees for it (Wicks & Lumpe, 2015). Similarly, students can interact and communicate, express thoughts, share experiences, and exchange knowledge with others for free on Facebook (Kabilan & Khan, 2010; Rubrico, 2012). They do not need to spend money on phone calls and SMS as they can communicate through Facebook chat (Rubrico, 2012). Apart from that, Google+ is a freely accessible, open-source application (McGregor, 2020). Using SM as e-Portfolio platforms is beneficial as institutions do not need to purchase a separate server to store their students’ e-Portfolios, as compared to those conventional e-Portfolios revealed in Butler’s (2010) study.

Multiple views

Most studies concur that SM-based e-Portfolios are built for different purposes: learning and assessment (e.g., Aydin, 2014; Barrot, 2016; Cleveland, 2018; Gordon, 2017; Tur & Marín, 2015; van Wyk, 2017), job hunting (Yang & Wu, 2013), and showcasing (Radclyffe-Thomas, 2012). Gabaudan (2016) highlights the SM-based e-Portfolios’ potential for social learning. She further elaborated that reading others’ blogs/posts can clarify task expectations as it allows students to discern how others accomplish tasks and give them ideas to improve (Gabaudan, 2016). Besides that, students see their e-Portfolios as an invaluable resource for job hunting (Yang & Wu, 2013) that authentically portrays their work and experience (Radclyffe-Thomas, 2012) in which would be particularly most useful to academic and professional careers (Blaschke, 2014).

Research Question 2: To what extent are the benefits of SM as e-Portfolios comparable to those of conventional e-Portfolios?

According to the findings and discussions in Research Question 1, it can thus be suggested that the benefits of SM when used as e-Portfolios are comparable to the
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The benefits of conventional e-Portfolios listed by Butler (2010). The results show that SM-based e-Portfolios benefited students of the HE in 13 ways out of the 16 benefits by Butler (2010). The key benefits identified are skill development, evidence of learning, reflection, psychological benefits, feedback and assessment—defining and fulfilling the concept of deep learning using an e-Portfolio. Therefore, these results support the conclusion that the impact of SM as e-Portfolios is comparable to the impact of conventional e-Portfolios.

Research Question 3: What are the drawbacks that practitioners and researchers need to be concerned with?

Although SM as e-Portfolios are beneficial to students, some drawbacks emerged in 12 aspects based on Butler’s (2010) list from the data analysis. When using SM as e-Portfolios, practitioners and researchers need to consider the issues as follows:

Skill development

Some students criticize that using SM as e-Portfolios has neglected the speaking component and is inappropriate for speaking skills (Kabilan & Khan, 2010). Likewise, most students in Huang and Hung’s (2010) argue that their oral artifacts do not reflect their true speaking abilities as they could rehearse/re-record their speaking. Two participants in McGregor’s (2020) experimental study expressed that their Spanish language skills have not improved as much as expected. Besides, students found that creating an e-Portfolio does not help enhance ICT skills because it only requires elementary skills (Kabilan & Khan, 2010). The source of these results is likely from the nature of the activities in which students are required to participate and produce specific artifacts. Therefore, it is important to note that not every e-Portfolio implementation will develop all skills, whether ICT, speaking, or any other skills—it all depends on the kinds of activities/artifacts involved. Most importantly, significant attention should be given to emphasizing the purpose of the e-Portfolio, the types of activities and instructions that reflect the course learning outcomes.

Reflection

Three drawbacks emerged on this. First, the quality of students’ reflection. Most of the blogposts published by students were either non-reflective or at a low level of reflection, and very few posts were coded as critical reflection on their blog-based e-Portfolios (Wicks & Lumpe, 2015). Second, students found that reflecting and writing reflection is difficult because they struggle with at least one of the monthly activities for the topic was hard to complete, understand or link with personal experience (Gabaudan, 2016). They only enjoy reflecting if they are comfortable with the topic (Gabaudan, 2016). These findings hint that writing reflection is challenging as students lack the knowledge and skills to reflect critically. Third, students found that reflective journal writing is time-consuming and time-wasting because they had done the same activity in another module (van Wyk, 2017).
Psychological effect

One concern was expressed that SM as e-Portfolios could trigger anxiety among students due to the open documentation and transparency of their learning process (Barrot, 2016; Tur & Urbina, 2014). Another explanation is that students are not used to presenting work online (Sipacio, 2015) and are afraid of criticism from the audience, especially those with extremely low self-esteem (Barrot, 2016; Sipacio, 2015). While some students tend to lose interest in uploading their work because of the increasing number of non-contributors on the blog-based e-Portfolios, others become less committed because they view it as time-consuming and not worth the effort (Tang & Lam, 2014). Students lament that diary or reflective writing on their SM-based e-Portfolios is meaningless and that there are “better ways to use my time” (Gabaudan, 2016, p. 132). There must be embedded and targeted support throughout the SM-based e-Portfolio implementation for students to familiarize themselves with presenting work online and tackling criticism from others, stay active and committed, and build a meaningful e-Portfolio. On top of that, the COVID-19 pandemic has rendered internet use non-negotiable as majority of students spends more time every day on SM (Kong, 2021); as a result, students nowadays may be more receptive to open documentation and transparency in their learning experience.

Another concern was expressed about resistance from teachers. There is evidence that teachers were resistant to using SM as e-Portfolios (such as Facebook) due to very limited education-related activities, non-academic communication, unfamiliarity in using technology, reliance on traditional teaching practices, weak internet, limited computer facilities, and competing workload (Sipacio, 2015). Transforming the process of teaching and learning is complex and it may necessitate changes in lecturers’ views, ability, and attitude that may require them and students to unlearn and relearn conceptions of teaching and learning (Adams et al., 2021). These results indicate that teachers also need support throughout the SM-based e-Portfolio implementation to familiarize themselves with the ‘new’ practice, deal with the limitations, and stay committed to encouraging students to build meaningful e-Portfolios.

Feedback

If not integrated as part of a SM-based e-Portfolio, the comment feature is associated with lower positive attitudes toward online peer interaction (Yang & Chang, 2012). The absence of the comment feature had resulted in one-way communication because it involved posting information without calling for feedback and giving comments (Blau et al., 2013). Furthermore, students faced difficulty asking comments from peers because they could “just make up comments without even reading the essays” (Barrot, 2016, p. 10). Another challenge is the time required to read students’ posts, react and provide feedback (Gabaudan, 2016; Tang & Lam, 2014).

Moreover, general feedback, such as “keep going,” “well done,” or “you could do it,” is given to peers and mentees with whom students and mentors do not have a close relationship or are familiar (Yang & Chang, 2012, p. 83). Such feedback may offer psychological support to students but, this type of comment is not practical
enough to inform students on what they need to do to improve their work. These findings draw others’ attention to the importance of giving sincere and practical comments as it would contribute to more meaningful learning in the e-Portfolio environment.

Assessment

Most students are concerned about balancing traditional and SM-based e-Portfolio assessments (Huang & Hung, 2010; Tur & Urbina, 2014). Students prefer traditional oral assessment because it resembles real-life interactions and tap students’ ability to respond immediately (Huang & Hung, 2010). In addition, it is argued that assessment should not be documented on the same platform along with the learning evidence as it is public (Tur & Urbina, 2014). Furthermore, Aguaded et al. (2013) noted some flaws in self-assessment because most students tend not to self-assess their work based on the given rubric. Besides, peer review was found not that helpful (Gordon, 2017), and this is accentuated when “peers become too nice and less honest in critiquing” (Rubrico, 2012, p. 202). Assessing activity/growth is also challenging as it is not clear when or where content changes had been made by students on Google Sites when used as e-Portfolios (Denton & Wicks, 2013). These drawbacks imply that students are unfamiliar with self-assessment and peer assessment, which might be related to the lack of monitoring and assistance during the evaluation and assessment process.

Artifacts

Students worry about the artifacts they need to include in their SM-based e-Portfolios, particularly in terms of the content and frequency, because they are uncertain about the content of the writing entries and how often they would be expected to update their blog (Denton & Wicks, 2013). This finding draws attention to the importance of clear instruction and training/support. Instructors should inform students on the purpose of the e-Portfolio and train them on writing entries that include analysis and reflection, instead of mere recall and description. Besides that, the issue of plagiarism also emerged from the analysis. Although plagiarism is not a new phenomenon (Sutherland-Smith, 2010), institutions are concerned with students’ plagiarism because students’ work (artifacts) are published online (Sipacio, 2015). Sipacio (2015) recommends organizing intensive campaigns or awareness programs on academic honesty and scholarly outputs to confront this issue.

Maintenance

In the study conducted by Avila et al. (2016), 74% of the students do not find it easy to initiate their e-Portfolio, and 63% rate it as not user-friendly because they are neither used to blogging software nor e-Portfolio. Some students encountered technical problems and complained that their blogging app (Avila et al., 2016) and Google + (Hegarty & Thompson, 2019) often crashed/froze and found them
challenging to upload files/images. Some students have also encountered difficulties in recording, editing, finding necessary resources, producing optimum work, and using video editing software (Aguaded et al., 2013). They also highlight issues like reading relatively small text on their Facebook-based e-Portfolios, faulty internet connections (Barrot, 2016), and some complicated steps of developing Facebook-based e-Portfolios (Aydin, 2014). Building e-Portfolios on SM is also regarded as time-consuming (Aguaded et al., 2013; Aydin, 2014; Kabilan & Khan, 2010), boring and tiring (Aydin, 2014), and labor-intensive due to the additional activities (Kabilan & Khan, 2010).

These results are significant because they help others understand that such new activities and ways of doing things can be particularly challenging to students who are not accustomed to them. Thus, practitioners and researchers should not assume that students know how to use SM effectively as e-Portfolios. As students have various skills and differing familiarities with using computers (Slade & Downer, 2020), it is a prerequisite for future studies to conduct an orientation properly at the start of the semester and provide guidance during the actual preparation of the e-Portfolio on any SM platform. With such prerequisites, Barrot (2016) has managed to keep the number of students encountering problems during their e-Portfolio preparation at a minimal level. Ultimately, students will gradually get used to the new ways of doing things after a while.

Access

Restrictions of access and limited use of institutional e-Portfolios have resulted in students quitting the platform because they could not invite external individuals to be part of their e-Portfolios’ online community (Stephensen & Dillon, 2013). Therefore, SM as e-Portfolios has become the preferred alternative. However, when it comes to SM as e-Portfolios, some students are not willing to share and participate because they are afraid that others may see their blogposts and personal discussions with their mentors (Tang & Lam, 2014). It is very embarrassing when students’ mistakes are pointed out and they want to delete them (Tang & Lam, 2014). Interestingly, there are two opposing standpoints: One group wanted the public to access their e-Portfolios, while the other group was dreading it.

Organization

A common view that emerged when using Facebook as e-Portfolios was that it does not offer proper organization (Hegarty & Thompson, 2019; Kabilan, 2016; Rubrico, 2012). Due to the absence of archiving system on the Facebook platform, archiving documents in Facebook-based e-Portfolios is difficult because it does not offer proper organization (Rubrico, 2012, p. 203). Besides, some students find it challenging to keep track of their photos on their Facebook-based e-Portfolios as they sometimes get lost in the messaging facility (Hegarty & Thompson, 2019). Moreover, a small number of students (13.8%) in Kabilan’s (2016) research expressed that the events in their e-Portfolios are unorganized as
“too many people discussing too many different topics, leading to confusion” and suggest that explicit instruction and guidelines should be given (p. 27). Also, only a few topics should be focused on weekly (Kabilan, 2016).

Storage

The users of SM-based e-Portfolios are concerned about the loss of data (Chang et al., 2014), and they prefer secure platforms (Stephensen & Dillon, 2013). It is argued that the e-Portfolios or data may be lost because of its long-time post or the platform is closed (Chang et al., 2014). Therefore, some users considered storing their artifacts and research on the customized institutional e-Portfolio that is more secure and reliable than external networks (Stephensen & Dillon, 2013). However, it is important to note that access to customized institutional e-Portfolios may expire when one is no longer attached to the institution.

Multiple views

e-Portfolios are beneficial to students in multiple respects but, Cleveland’s (2018) investigation on using SM-based e-Portfolio for employment purposes yields no significant evidence and findings, as students were in their first year of studies. This was due to the data collection period where students were still taking core courses and yet to enroll in field-placement courses (Cleveland, 2018). This result highlights that e-Portfolios at the early stage of studies may not serve the employment purpose because students are at the phase of building their foundation for their studies.

Privacy

There were several instances where students only write what they feel is appropriate and less controversial because students feel uncomfortable revealing their comments and opinions in public (Chuang, 2010). Due to that, a password security feature is integrated into their blog-based e-Portfolios (Chuang, 2010). Without such security, any critical and biased comments or error-prone content would be publicly scrutinized (Denton & Wicks, 2013). Limiting the public from viewing students’ work may provide a safe learning environment for them, fulfilling the safety needs of Maslow’s (1943) hierarchy of needs for learners. However, what about their esteem needs? Students need to feel capable and respected by others before they can realize their potential and growth. Therefore, it is essential to note that disagreement is inevitable when other people have different perspectives. What is more critical and paramount is how it is dealt. In addition, as students’ work is published online, institutions are concerned with identity theft that might occur (Sipacio, 2015). There is a possibility that people find themselves exposed to fraudulent behavior, with others impersonating them on Facebook or other SM platforms through fake accounts (Tsoutsanis, 2012). If severe damage is
caused, it is best to file a complaint with law enforcement officials and then bring a claim in the civil courts for injunction or monetary compensation, instead of only filing a complaint with Facebook (Tsoutsanis, 2012). Students and lecturers must be made aware of the identity theft issue and how to act when it occurs.

**Implications**

One of the major implications of this review is the necessity for a well-planned orientation and guidance for implementing SM as e-Portfolios to be put into place so that students may grasp the concept of e-Portfolio, features and functions of the SM platform(s), and course learning outcomes. Additionally, students should be made aware of what is expected from them before and during their engagement with SM-based e-Portfolio. This is because continuous support for both the technological and pedagogical aspects of e-Portfolio implementation is vital for students to fully benefit from using it (Slade & Downer, 2020). These measures would undoubtedly go a long way toward reducing the number of students who struggle. Thus, these measures would ensure students to be more focused on experiencing meaningful learning. Researchers would find it intriguing to investigate how well the aforementioned measures reduce students’ struggles because doing so will certainly inform and enlighten them on how to use SM as e-Portfolios in a more meaningful and evocative way.

Based on the findings and themes confirmed by this review, as well as the aims of each research paper that was reviewed, we notice that the aspects identified as the benefits/potentials of the SM-based e-Portfolios can be classified into activity-based and outcome-based categories. We, therefore, propose a pedagogical framework for the planning and implementation of SM as e-Portfolios (Refer to Fig. 2). The framework outlines eight (8) key pedagogical considerations that can be categorized into two (2) main components, i.e., the activities to be integrated into an SM-based e-Portfolio and the intended or/and expected outcomes of an SM-based e-Portfolio. This framework suggests three types of e-Portfolios using SM: Activity-based Social Media as e-Portfolio (ABSMEP), Outcome-based Social Media as e-Portfolio (OBSMEP), and an Integrated-based Social Media as e-Portfolio (INSMEP). ABSMEP could be planned with the specific aims of: (1) engaging students in meaningful interactions via the provision of feedback; (2) assessing students’ artifacts and encouraging peer assessment; (3) developing and sharpening students’ reflecting practices; and (4) creating, maintaining and updating artifacts. ABSMEP would have no specific learning outcomes (if intended so by the planner) but more towards encouraging and enculturating the use of SM as an e-Portfolio, in general. Perhaps ABSMEP is more suited for students who are new to e-Portfolio or for teachers and academics who want their students to experience and understand the fundamental concept of an e-Portfolio on an SM platform in general for learning. Nevertheless, the planner should have the autonomy to determine the number of activities that should be taken into account in planning for ABSMEP—it could be a focus on only one or a combination of two or more activities.
On the other hand, OBSMEP could be planned with the definite aims of: (1) invoking positive psychological effects among the students; (2) creating artifacts that fulfill pre-determined learning outcomes; (3) demonstrating students’ learning (or evidence of learning); and (4) developing new skills and/or enhancing existing skills. Based on these outcomes, teachers and academics could plan the activities that should be integrated into the SM-based e-Portfolio. OBSMEP would be more appropriate for intermediate levels/topics/subjects/students or to achieve specific learning outcomes that have been pre-determined, especially the development of new skills and enhancing existing skills. As in ABSMEP, OBSMEP could also be dynamic and fluid in its focus (whether one or more, or a combination of all outcomes) and how the outcomes should be attained using two or more activities.

INSMEP is the most dynamic, fluid, and purposeful of the three types and an ideal form of e-Portfolio using SM. It is a fitting platform to support advanced learners and achieve a higher level of learning outcomes or topics/subjects that are complex and intertwined with many intricate elements that need careful unpacking. INSMEP could be planned with the aims of: (1) exploring new learning development and skills, and simultaneously enhancing/sharpening existing learning development and skills; and (2) focusing (simultaneously) on both components of the framework, i.e., activities and outcomes. INSMEP could be planned by first identifying
the appropriate activities (or even utilizing all four activities) and then matching/aligning them to the pre-determined or intended outcomes. We could also identify the pre-determined or intended outcomes and then select and structure the activities that best achieve them. This could be in the form of various combinations involving different activities and outcomes to unpack the complicated, intertwined learning elements through the activities and outcomes in INSMEP.

In conglomeration, the two main components should guide teachers and academicians in planning and implementing more meaningful and effective e-Portfolios using SM. As a general guideline for this framework, we should ponder the aim of implementing an e-Portfolio using SM, which will help determine if ABSMEP, OBSMEP, or INSMEP should be utilized. Also integral is the outcome expected from the implementation of ABSMEP, OBSMEP, or INSMEP. Based on the above deliberation, teachers and academics should reflect on these critical questions to conceptualize a clearer SM-based e-Portfolio that should be planned and implemented: (1) what skills do we aim students to develop?; (2) what kind of artifacts students need to produce to show the skills?; and (3) how could the artifacts show students’ progress and evidence of learning? (Note: More similar questions could be asked concerning the activities and outcomes). Also, teachers and academics should consider reflective activities as an integral feature of SM as e-Portfolios. The SM-based e-Portfolio activities should also include feedback (from both students and teachers/academics) and planners need to think of ways to encourage students to do so. As SM-based e-Portfolios can foster assessments, we need to consider the forms of evaluation that meet the outcomes that we have decided, i.e., formative assessments, summative assessments, or both. Most importantly, we need to deliberate an appropriate SM that is easy to use and maintain, implement the e-Portfolio, and consider how the SM-based e-Portfolio activities and students’ artifacts can be organized.

Conclusion

This study set out to better understand the potentials of SM as e-Portfolios. It examined how SM as e-Portfolios benefit students in HE, to what extent the benefits of SM as e-Portfolios are comparable to those of conventional e-Portfolios, and the drawbacks that practitioners and researchers need to be concerned with. From reviewing the selected 31 articles, one of the more significant findings from this analysis is that generally, SM and its features, when used as e-Portfolios, can support and facilitate students’ learning and development, just like the conventional e-Portfolios. The findings also revealed that blogs and Facebook are widely used as e-Portfolios because these two platforms are attuned to the features of an e-Portfolio. These platforms can assist and support students to learn from their experiences in the personal learning environments of their SM-based e-Portfolios that scaffold the production of students’ collaborative knowledge construction (Korhonen et al., 2018). On their SM-based e-Portfolios, students engage in critical reflections and dialogues with their peers and networks. Hence, students gain new knowledge, obtain valuable insights, and improve their skills in a domain that is stimulated and enriched by social capital through the intricate and far-reaching networking support,
resources, and cultures they would have created in the SM-based e-Portfolios. This scenario can be likened to Gandini’s (2016) definition of social capital, which is an investment in social relationships “using reputation as an asset and a social capital that translates digital and non-digital interaction into value” (p. 917).

Moreover, Barrot (2021) extends the Decomposed Theory of Planned Behavior (DTPB) by Taylor and Todd (1995), which originates from the Theory of Planned Behaviour (TPB) by Ajzen (1991). He addresses the fact that students’ attitude does not just influence their performance, perceived behavioral control, and subjective norm, but also by social pressure to perform and their awareness of the audience that results from the SM-based e-Portfolio platform (Barrot, 2021). Therefore, SM-based e-Portfolios are not only comparable to conventional e-Portfolios, but they also offer something more from the perspective of social capital and high visibility.

The analysis has also identified 13 benefits of using SM as e-Portfolios in the articles and 12 drawbacks. As connoted by Kabilan (2016), both types of findings (benefits and drawbacks) could be a source for improving the utilization of SM as e-Portfolios, especially from the pedagogical perspectives, in furnishing a better learning experience for students in HE. The findings indicate that SM-based e-Portfolios provide significant benefits in skill development, evidence of learning, reflection, psychological benefits, feedback, and assessment. These findings could help change and alter some of the misconceptions held by parents and institutions regarding the use of SM for educational purposes (Barrot, 2021). Future studies on the 12 drawbacks could be initiated and planned to better understand them and find concrete solutions for a more effective learning experience derived from a comprehensive pedagogical design. According to Jensen (2017), pedagogical design has been largely ignored compared to “the research focused on utilizing the technology for efficient search for, access to, and distribution, use, and reuse of learning resources and content” (p. 514). Concentrating on the pedagogical design of e-Portfolios using SM would be relevant and substantive since students’ progress and learning are the ultimate goals and outcomes in any context. Therefore, this literature analysis suggests a pedagogical framework comprising eight (8) key pedagogical considerations and three types of SM-based e-Portfolios (ABSMEP, OBSMEP, and INSMEP) for planning and implementing SM as e-Portfolios.

In addition, using SM as e-Portfolio platforms could be one of the many ways forward for the future e-Portfolio implementation. It could be a better alternative than using conventional e-Portfolio platforms that require high software and equipment set-up costs (Barrot, 2016; Butler, 2010). Moreover, SM-based e-Portfolios can accomplish the most of what conventional e-Portfolios can. Nevertheless, most HE institutions could or may resist using SM as e-Portfolios due to the nature of organization and management of information, data, documents, and artifacts that are haphazard, jumbled, disarrayed, muddled, and unsystematic. This is one drawback that should be deeply and thoroughly investigated. At this juncture, we could only postulate that grasping how the learning materials and tasks are disseminated by instructors and understood and practised by the students in the SM-based e-Portfolios could lead to crucial answers to the question of organization and management of students’ artifacts, works, and learning.
We also observe that many of the studies reviewed have implemented different and contrasting tasks and used various learning materials. These issues are of concern in the conventional e-Portfolio, particularly by Rossi et al. (2008), whose research extensively examined the various tasks and materials created and used by learners and produced a guideline for the introduction and implementation of an e-Portfolio for learning adults. Would the guideline proposed by Rossi et al. (2008) be well-suited to e-Portfolios based on SM, or a specific guideline should be researched and developed? This is another area that researchers should explore and embark on, especially when there are insufficient studies to depict effective practices, which could be used to develop those guidelines.

This review has presented the state of art of the SM-based e-Portfolios’ potentials to support and facilitate students’ learning and development. There is a growing interest in using SM-based e-Portfolios in teaching and learning because the usage of SM becomes particularly more important in today’s connected online social landscape as students continue to use them in large numbers (Chugh & Ruhi, 2018). However, the empirical evidence to support the effectiveness of SM as e-Portfolios is still very limited as most studies are based on the perceptions of students, teachers, and the faculty. In this review, only two studies dealt with this issue, i.e., Barrot (2021) and McGregor (2020). Therefore, more studies that provide more compelling empirical evidence should be carried out. The focus of this review was on studies that involved post-secondary education students. Future research might explore learners at other levels, i.e., elementary, primary, and secondary education. More rigorous and scientifically peer-reviewed studies encompassing various aspects of using SM as e-Portfolios are required to identify, determine, and develop effective pedagogical practices, designs, and research frameworks that benefit practitioners and researchers.

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