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Student engagement with e-portfolios: purpose, benefits and problems

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Abstract

This paper reports on a phenomenographic study about the different ways that undergraduate law students understood and conceptualised the idea of e-portfolios as used on their programme. The aim of the study was to investigate variations in conceptions of e-portfolios, including their purpose, benefits and problems as experienced by students. The study sought to contribute to the growing collection of literature relating to technology-enhanced learning, which recognises the critical role of students in designing curriculum and in particular the need to engage students in using innovative methods of teaching. The findings include three conceptions of an e-portfolio held by students: *as a self-improvement gauge; as a learner-centred depository; as a showcase of reflections*. The study offers some suggestions for improving students' engagement with the e-portfolio as a method of assessment in higher education.

Keywords

E-portfolios, learner-centred, student engagement, phenomenography

Embedding e-portfolios

Learner-centredness and personalisation of learning have become a strong focus in education, especially due to an increasing awareness of the benefits of learning with technology. Within this broad area of work, electronic portfolios (e-portfolios) have been shown to have potential for enhancing reflective learning and personal development planning (JISC, 2008).

In the undergraduate law programme at the University of Cumbria we chose to use the PebblePad e-portfolio. It has been designed to enable the user to own and manage the e-portfolio by selecting appropriate materials for reflection and evidence, choosing the structure and presentation and deciding whether to share this private space with other students, tutors and potential employers.

The rationale behind the embedding of e-portfolios into the degree programme is to offer the opportunity for learners to control their learning and to be capable of deep learning. Then, as students become more engaged and motivated, to move beyond simple information gathering to gaining an understanding of the subject discipline. The need for student engagement and the educational potential of e-portfolios

together form the foundations of this study, with a focus on examining the varying students' perception on utilising and experiencing e-portfolios in their learning journey.

The e-portfolio has been embedded into three legal skills modules, one in each year of the Law degree. Students are provided with practical training on the use of PebblePad. Tutors are involved in frequent online communication with students, giving feedback on the student's reflection on their academic skills and career/personal development plans, further supplemented by four personal tutoring meetings. All first-year modules are used to provide evidence and reflection on academic learning, achievements and development of relevant legal skills. As students progress into their second and third year of the programme, they continue to develop their e-portfolios, expanding the list of competencies acquired through academic and professional legal skills.

The e-portfolio assessment criteria requires students to create an archive of evidence addressing themes of transferable and academic skills development, employability and reflective learning throughout the year, and as a communications tool facilitating student-tutor dialogue. By encouraging reflecting on their own learning, the e-portfolios:

- provide a personal and safe space for the students to express what they have learnt (Ahn, 2004)
- identify areas for improvement and further learning
- better amalgamate their various learning experiences.

The case for e-portfolios

Literature on the benefits of e-portfolios is explored below, alongside identification of the type of learning that may take place while engaging in the various stages of e-portfolio construction.

E-portfolio pedagogy is seen to:

'...encourage students to become dynamic participants in their own learning...students are not merely the users of the system; they are, or should be, the authors of it' (Kimball 2005:442).

The pedagogical value of e-portfolios lies in the theory of constructivism:

'The creation of understanding and knowledge is gained through experiencing and then reflecting on the experiences. When experiencing and reflecting on something new, one tries to reconcile it with previous knowledge and experience' (Paulson, Paulson, & Meyer 1991)

thus, identifying and constructing new knowledge through active learning (Freeman, 1998).

An e-portfolio can be created at any point in a learning journey, used as a learning space that is personalised and owned by the learner to create, store and share examples of less than perfect work and exemplary work selected by the learner, usually with the aim of reflecting and demonstrating learning and development (Smith and Tillema, 2003; Zeichner and Wray, 2001). It can also be used to showcase

skills and exemplary work and achievements and success stories for an audience (Zeichner and Wray, 2001; Abrami and Barrett, 2005). It may not demonstrate a learning journey as work and reflection on mistakes are not necessarily included (Meeus et al., 2006). The type of e-portfolio created will depend on its purpose and audience. An e-portfolio designed to show change and development may not be suitable to showcase skills and accomplishments, while sharing only exemplary pieces of work will not be useful for assessing development in learning (Barett, 2000, 2005).

Sutherland and Powell (2007) articulate that an e-portfolio is a creation of

‘...purposeful aggregation of digital items’

by the learner to present to an audience (JISC, 2008:7). Mason et al. (2004) explain that the ‘purposeful aggregation’ involved in creating e-portfolios encompasses opportunities for learning and personal development in every stage. For example, active participation in learning takes place during the construction process (Wade et al., 2005). However, Kimball (2005) argues that this process may be of little value unless some form of reflection is undertaken; and it has been recognised that the construction of new knowledge takes place with an appreciation and understanding of the learner’s participation to learning during the reflection phase (Abrami and Barrett, 2005; Smith and Tillema, 2003).

Alongside facilitating personalised learning and creating new learning through reflections, the e-portfolio process documents the learning progress over time, giving a sense of accomplishment. The process facilitates the exchange of support, encouragement and feedback (Lorenzo and Ittelson, 2005a) through student-tutor dialogue which is integral to formative assessment (Cambridge et al., 2001). Poor work and failure can be reflected upon, showing steps taken to redress mistakes, thus enriching the learning experience (Cambridge et al., 2001). It allows learning to be created in a way that is tailored to the needs and preferences of the learner. Personalised learning lends itself to learners making decisions on their learning (Wade et al., 2005).

The literature confirms that the e-portfolio is a space for learners to examine their learning by

- posing questions
- considering what they know
- realising their own strengths and weaknesses
- making decisions
- managing their own learning (Backlund et al., 2001)

through actively participating in learning and reflections. The continual reflection of experiences allows the development and integration of new knowledge (Lorenzo & Ittelson, 2005) giving students’ control of what they learn. Our rationale for using e-portfolios is based around the wealth of learner-oriented and activity-based planning, selecting, discussing and reflecting activities, all of which add a wealth of benefit to e-portfolio-based learning.

The study

Although the literature on e-portfolios mainly elucidates to the usefulness of e-portfolios through learner-centred, deep and personalised learning, there is a lack of research on student perceptions of the value of the e-portfolio to their learning. With the rich educational potential of e-portfolios it seems important that the student perspective of e-portfolios is investigated.

Some students on the Law programme have not accepted of the use of e-portfolios as part of their educational experience, either producing an e-portfolio with the barest minimum effort to meet the assessment criteria, or not producing one at all, despite the e-portfolio being assessed. It is anticipated that the results of this investigation showing the variations in how e-portfolios are understood and experienced will help the Law tutors find effective ways of motivating students and promoting engagement with the tool/process.

The first aim of this study was to determine the variation in students' perceptions of e-portfolios within the context of the Law curriculum for first and second year students at the University of Cumbria. In order to do this, a phenomenographic study was undertaken using interviews of eight students from the law department to investigate students' perceptions of e-portfolio and its impact on their learning by determining a range of variations of how students conceptualise e-portfolios.

This study explored:

- What are the variations in students' perception of e-portfolios?
- What are the variations in students' conceptions of the benefits of using e-portfolios?
- What are the variations in students' conceptions of the problems with using e-portfolios?

Upon reflection of the varying perception, the second aim of this study was to identify questions that are in need of evaluation for improvement in the implementation of the e-portfolio to maximise student engagement. Responses to those questions will be the focus of future research.

Phenomenography

The purpose of this study was to recognise and understand students' experiences of e-portfolios and to ascertain the variations in their conceptions, with a desire to consequently improve student engagement with the e-portfolios, which logically lent itself to phenomenography.

Phenomenography is a methodological framework used to provide insight into the qualitatively different ways in which the students understand, experience, conceptualise and realise (Martin and Ramsden, 1992) what an e-portfolio is by describing how it is experienced and the variation in the manner it is understood (Orgill, 2002). The existence of variation in experiences is founded on the hypothesis that individuals experience the world in unique and different ways (Säljö, 1988, Marton and Pong, 2005).

Although the conceptions are explored from an individual perspective using transcribed data from the participants, the variations are analysed at a collective level (Marton, 1994). This second order perspective (understanding the phenomenon through the experiences of another) has been criticised as remaining open and unbiased to other perceptions (Ashworth and Lucas, 2000). Given that different perceptions of e-portfolios will exist for different students under different circumstances (Marton and Booth, 1997)

‘the range of meanings within the sample will be representative of the range of meanings within the population’ (Akerlind, 2005a:104).

Sampling, interviewing and transcription

Appropriate selection of participants has to be made to maximise the variation of experiences reported (Marton and Booth, 1997). A pool of 25 participants was drawn from a total of 52 first and second-year students on the Law programme. These were representative of our student population based on age, previous educational background and employment, physical disability and visual impairment, any cognitive disability, social factors such as language barriers, ethical and cultural barriers and their location (urban/rural lifestyle). Given that participants had to be sufficiently willing to engage but, ethically, they could not be compelled to participate in the research, self-selection from the representative pool was found to be the best option. Eight students volunteered. Confidentiality and anonymity were maintained. Although the data collected was from a small sample, the breadth of the representation of the participants has provided ‘useful insight’ into the different ways in which e-portfolios have been experienced (Bruce et al., 2004).

For this study, the ‘intentional–expressive’ interview approach was used to explore experiences and conceptions of the participants (Anderberg, 2000). The eight participants were asked open-ended questions regarding e-portfolios, with follow-up questions to encourage them to reflect and discuss their experience (Walsh, 2000). The dialogue format allowed data to be as exact as the participant’s conceptions and assisted in elucidating and confirming the expressions and their intended meanings (Anderberg, 2000; Svensson et al., 2006) which is crucial, since the categories of description are constructed from the participants’ experiences communicated in the interview (Ashworth and Lucas, 2000). In a phenomenographic study, the engagement and interaction between researcher and participants and the researcher’s lack of independence from the study are factors that may affect the credibility of the study.

Data analysis

The main limitations of credibility and validity in a phenomenographic study lie in the data analysis. To fully comprehend the conceptual meanings of the participant’s experiences, and to demonstrate reliability between the data obtained and the categories in describing the ways in which a phenomenon is experienced, Marton and Booth (1997) and Ashworth and Lucas (2000) advise researchers to deliberately set their opinions and preferences aside in the interpretation of data.

In this study, Sjöström and Dahlgren’s (2002) data analysis steps were implemented.

Familiarisation

The conceptions were analysed from verbatim transcribed interviews, allowing oral discourse to transform into text. This process was complex and time consuming. Kvale (1996) warns that transcription may change the meanings of conceptions, as aspects of the experience cannot be expressed in text. Barnacle (2005) explains that relying solely on transcripts for phenomenographic analysis runs the risk of misinterpretation. Each transcript was analysed in full rather than by extracting passages. This helped minimise the limitation in logic of the system of categories.

Identifying significant keywords and themes

Answers were compiled from participants by identifying the most significant elements in the answers they gave to the three sub-research questions:

- What are the variations in students' conceptions of e-portfolios?
- What are the variations in students' conceptions of the benefits of using e-portfolios?
- What are the variations in students' conceptions of the problems with using e-portfolios?

Grouping themes and keywords

Individual answers were summarised to obtain the main themes in dialogue before attempting to preliminary group similar answers. During the data collection phase (interviews) the data was continually analysed as it was heard, either to confirm that the categories identified from previous interviews were accurate, or to discover new categories, or to reject some categories. Categories of description for the same phenomena can vary depending on the group of participants and different researchers' ability to develop different categories from the same data (Akerlind, 2005).

Cross-referencing

The categories constructed were compared and named with the use of different coloured pens to underline similarities in responses. This system was helpful as it kept the transcripts whole to maintain and refer to context of the dialogue, making cross-referencing straightforward. It was found to be a challenge to capture the meaning and the perspectives of the respondents in a short phrase.

Establishing the categories

The data analysis was presented in categories evidencing qualitatively different experiences in relation to e-portfolios, representing

'as closely as possible the participant's conception at a collective level'
(Marton and Booth, 1997)

sustained by quotations from the interviews to support and clarify the conceptions, which had been clearly explored, elicited and clarified during interviews to facilitate interpretation at this stage. The outcome space makes graphical representation of the critically different conceptions, understandings and experiences of the participants (Bruce et.al, 2004) and how the categories described correlate together.

Limitations of the study

- Participation in the study was voluntary and data collected at a single point in time may not sufficiently represent the perspectives of the entire student population in the Law department.
- Although the researcher sought to analyse the transcription 'through the eyes of the participants' (Bruce et.al, 2004), during the interpretation process, it is questionable as to whether sufficient consideration and time for reflection was given towards the expressions used by interviewees and whether assumptions were made about their meanings.
- No pilot interviews were used to ensure the questions had been communicated clearly.
- The researcher sought to put their preconceptions of e-portfolios aside and tried very hard not to presuppose the view of the participants in any way similar to their own, although this could be open to criticism in the categorisation phrase.

Students' conceptions of what an E-portfolio is

Category 1: An online self-improvement gauge

It is a private space for discovery and reflection on learning. This facilitates personalised learning and promotes reflective practice when learners identify achievements through self-improvement or set goals for self-improvement and assess how effective they have been, giving a sense of achievement and self-confidence.

A place to think about my goals, set targets for accomplishments, thinking about how to achieve the targets and to assess whether these targets are met by regular reviews on my ability as a student. It helps create a plan learning and career development and I can see how much I had achieved... helps me track my progress and grades which helped to improve my confidence to visually see weaknesses and improvements. (Participant 1)

It helps one to see improvements once they are laid down in written form. It demonstrates progress and difficulties and how they have been overcome/learned from (Participant 2)

Category 2: A learner-centred depository

The content and structure is owned and controlled (within the parameters of the learning outcomes) by the learner, creating a personalised learning environment with opportunities for personal development. It allows learners to set permissions on what parts of the portfolio can be shared/seen with/by another.

A folder saved online which only I have access to, in which I have added documents and reflections and future plans throughout the first year. At the end of the year I can decide what aspects to share with my tutor for assessment and feedback (Participant 3)

It is the individual's decision on what evidences to include and whether to share any of these with a tutor or peers. I feel as if I have to be responsible for my learning by thinking about how well I have done and what I need to do to improve by setting goals (Participant 5)

Category 3: An online showcase of reflections

It is a personal learning record that demonstrates and displays achievement, skills and reflective learning through self-expression for various purposes and audiences.

Students have adopted the e-portfolio as a reflective showcase of learning progress:

I can see which skills I have developed and how I overcame any challenges, which is useful for a potential employer to see as it demonstrates personal attributes, level of work and commitment (Participant 3)

Some students use the e-portfolio as a learning journal recording and reflecting on activities throughout the academic year:

... a journal for the academic year of what happens at university created using the internet with links to coursework to see the progression of your works with all the information online (Participant 7)

...a virtual diary, writing about things that have gone well and also things that did not go so well (Participant 7)

Students' conceptions of the value of e-portfolios

Category 1: Allows control over learning

E-portfolios allow reflecting and forward planning in response to learning. The construction itself is a reflective process and captures the uniqueness of a learning experience. Students identify the sense of control over their learning as a catalyst for their achievements and success.

Personally, I think that they are of great value as they allow individuals to control their own learning and as e-portfolios are very flexible in terms of their purposes, they are a great learning curve. When I set targets and action plans in the portfolio, it encourages me to achieve them as I have to write whether I have or not and share it with my tutor (Participant 2)

Category 2: Facilitates personal growth

Students become empowered through the reflection process associated with e-portfolio-based learning:

Getting used to writing about oneself is not easy but in doing this it prepares one for the modern phenomena of adding 'personal statements' to job applications (Participant 1)

If it was not for the portfolio as part of a course module, I do not think that I would be as much of a reflective learner. After I receive feedback of an assessment I look and take into account the areas for improvement and try to correct and apply the action plan, in the next assessment I complete (Participant 5)

An e-portfolio allows mapping and visualisation of improvements and achievements, instilling confidence and improved learning:

I think the e-portfolio is an excellent building tool, for learning and reflecting...to visualise how you grow as a student, from the beginning of the course until employment (Participant 5)

As a law student you are constantly required to analyse and think critically. I personally believe this is a hard skill to learn, but using the e-portfolio encouraged me to analyse and think critically about my own skills, work and progress and this has impacted positively on my ability to write critically in my assignments (Participant 7)

Category 3: Allows student-tutor dialogue

Through sharing the e-portfolios, tutors are aware of a progress and problems students face. The dialogue between the student-tutor encourages the students to overcome difficulties in learning and encourages further reflection and action planning. Continuous learning takes place through dialogue and collaboration.

We write how to go about an assignment and when we receive our grade and feedback from our tutors we can analyse our strengths and weaknesses and the tutor collaborated with setting goals for improvement in our next piece of work by commenting on the reflections (Participant 1)

When I share my webfolio with my tutors, they can read my reflections for each activity. They help me to put into perspective how exactly I am developing skills that will become useful in the future. Sometimes I have been in conversation with my tutors over many days over a piece of feedback. It is very helpful when there is opportunity to discuss ways to improve in so much detail (Participant 8)

Students' conceptions of the problems faced in using E-portfolios

Category 1: Lack of understanding resulting in a low level motivation

Not all learners find the concept or value the benefits of engaging with of e-portfolios appealing:

Although there is value in using the e-portfolio, sometimes I feel that it is an extra duty. I am left confused and deflated with exactly what I have to do (Participant 5)

To progress my level of engagement with the e-portfolio I think that at the beginning of the year it needs to be stressed more that it may be relevant for possible employers to look at, which gives a motivation to work on it (Participant)

Motivating students to engage with e-portfolios is challenging. Abrami and Barrett (2005) suggest encouraging students to make decisions and take control and ownership of the construction, consequently allowing students to connect the effectiveness of constructing an e-portfolio with its pedagogical value. Smith and Tillema (2003) suggest giving guidelines and structure and showing examples. Clear articulated reasons for constructing e-portfolios (Klenowski et al., 2006) with their

purpose directly linking to the curriculum and the intended learning outcomes (Wetzel and Strudler, 2005) help to retain the value of e-portfolio and students are not left confused and anxious about the scope, nature and purpose of the construction resulting in lack of engagement and motivation (Darling, 2001; Wade and Yarbrough, 1996).

Why do I need to reflect on what I have done? (Participant 4)

It would be useful if a workshop was set up in which an example e-portfolio was completed as a team effort. This way, we can learn what is expected to build a good e-portfolio...(Participant 5)

Category 2: Assessed portfolios

Learners lack the freedom to write about their experiences, feeling constrained and instead may be writing what they believe the tutor wants to see (Jarvis, 2004):

The e-portfolio is really beneficial and I see a lot of improvement in my learning. I analyse each assessment in detail and set goals for myself. It is like my private space. However, I feel really restrained because it is assessed. I have to cut out certain things/thoughts before I can send it to my tutor for assessment. Also, I do not think assessments should be carried out in this way as it is difficult to gauge the amount of work put purely on reflection (Participant 5)

Learners lack the opportunity to explore their learning in their own way if it has to be completed in accordance with particular specifications:

It has got to be done because it is assessed. I found it hard to decide what to write because I didn't want to sound as if I have made too many mistakes this year. I didn't know if that will lower my grade for this assessment. I think a reflection (as is done in the portfolio) is essential to become a good lawyer but are not suitable as a form of assessment. The criteria we were given were very helpful, but I didn't want to write unnecessary criticism of myself (Participant 8)

If it is to be assessed, students need to be provided with clear assessment guidelines (Canada, 2002; Carliner, 2005; Tosh et al., 2005), based on how their evidence and reflection show their learning (Tosh et al., 2005), and how these accomplishments link to the learning outcomes of their study (Lorenzo and Ittleson, 2005c).

Category 3: Technical skills

Students feel they may be disadvantaged due to their technical abilities. Some believe there is danger of portfolios being assessed more on their technological creativity. The software and training provided needs to be supportive and flexible to accommodate the diverse needs and preferences of learners:

I worry that students who know a lot about how to play with the program to impress the tutors may get a better mark because their work is presented at a more attractive level (Participant 3)

Variations in students' perceptions of e-portfolio in their learning

The graphic representation of the outcome space below uses an arrow as symbol of a hierarchical structure to illustrate the varying conceptions from the three categories of description:

- the variations in conceptualising what is an e-portfolio
- the variations in the benefits of using e-portfolios
- the variations in the problems faced when using e-portfolios.

The arrow shows the increasing and decreasing levels of prominence in e-portfolio-based learning, through elements of learner-centeredness, personalised learning and reflections for personal development.

The categories of description simultaneously show a link between the three by matching the character of e-portfolios with a learning process, alongside an identified detractor through analysis of transcripts as a whole. Each participant described their conception of an e-portfolio, their experience of using e-portfolios and how it had benefitted their learning and the problems they had faced while using the e-portfolio.

All three categories now illustrate how the level of e-portfolio-based learning and subsequent engagement with the tool is affected.

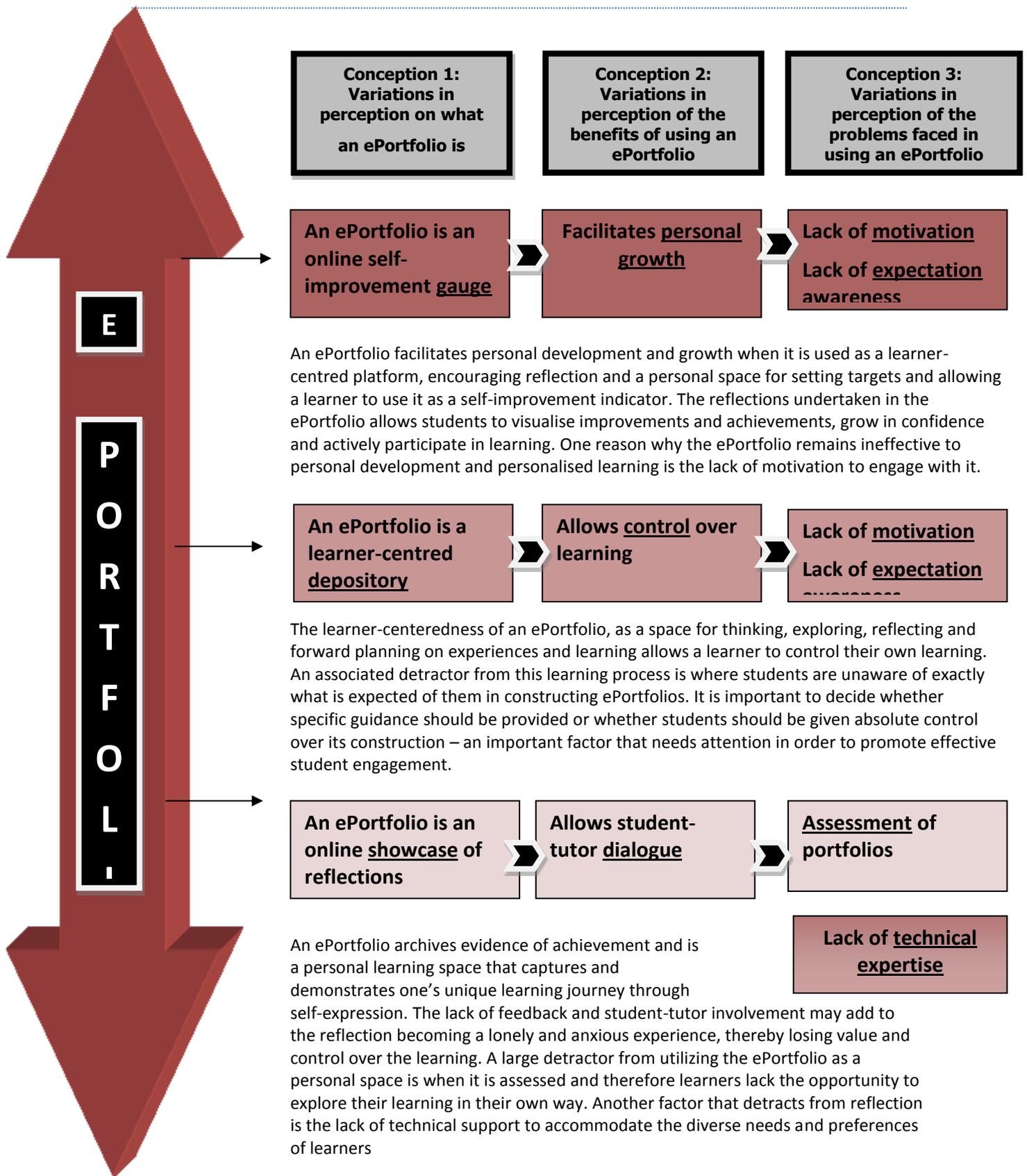


Figure 1: Outcome space – Understanding the varying conceptions of ePortfolios

Figure 1. Outcome space – Understanding the varying conceptions of e-portfolios.

Conclusion and implications

This study used phenomenography to explore the variations in students' experience in using e-portfolios in the Law curriculum. The categories were considered by looking for similarities and differences between the data. The outcome space sought to explicitly illustrate the logical relationship between the three conceptions by showing the ways and methods students have experienced e-portfolios and, as a result, the consequent benefits from the experience and the associated problems that hindered increased levels of student engagement.

The use of phenomenography in this study has provided insightful data. The variations discussed indicate that there is lack of consistency in the way e-portfolios and their value is conceptualised and experienced by our students. Improvements must be made by advocating meaningful and powerful messages to students on the potential of constructing e-portfolios.

The review of literature and the findings from this investigation have identified a number of factors which we must discuss, reflect and agree upon before constructing articulate reasons and purposes of using e-portfolios and deciding how these fit within the academic context.

Purpose

What is the purpose of the portfolios? Are they for learning, for assessment, for personal and career development, for employment or as an official record of a student's work? We must assess students' familiarity with e-portfolios, discuss appropriate timing in the first year to introduce e-portfolios to students by reflection upon the current timing and content of introduction to e-portfolios. Sample e-portfolios must be constructed for demonstration.

Learner control and ownership

What is the level of learner control and ownership of the e-portfolio? For example, what aspects of the e-portfolio should a student control? In turn, we must ask how much control should tutors have, and how prescriptive we should set the guidelines for creating the e-portfolio.

Level of tutor engagement

What is the level of tutor engagement with e-portfolio? For example, what is the purpose of the feedback on e-portfolio reflections? How frequently should tutors provide feedback on student's developments and reflection? As and when required or during prescribed intervals?

Assessment

Should we assess by specific evaluation criteria or a pass-fail system as part of a compulsory but formative assessment of a module? How can we design an assessment strategy that allows learners to control the content but also captures learning?

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