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Becoming productive 21st century citizens: A systematic review uncovering design principles for integrating community service learning into higher education courses

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ABSTRACT

Background: To prepare students to become productive 21st century citizens, universities have to be more engaged with society. Shifting towards community service learning (CSL) enables students to participate in, and reflect on, services that both benefit the public and also contribute to their own learning. There has been considerable research conducted on the improved student competencies, both academic and personal, resulting from CSL. There is, however, no consensus on how to integrate CSL into courses successfully, owing to the diverse contextual factors that influence implementation.

Purpose: By means of conducting a review, this study aimed to establish general design principles to help guide course coordinators in implementing CSL in their academic courses.

Design and methods: A systematic review was conducted of articles describing the implementation of CSL in academic courses within various disciplines. Implementation elements and principles were extracted from the articles and inductively grouped together, thereby identifying various design principles.

Findings: Our analysis of the literature highlighted three steps that, according to the literature, are important in the implementation of CSL: (1) aligning course objectives and format; (2) establishing a relationship with the community partner; and (3) defining a reflection and evaluation strategy. We found that the nature of the design principles and specific approaches underlying these implementation steps should depend on the students' capabilities, which include their pre-CSL experiences.

Conclusion: The implementation steps and underlying design principles uncovered by this review may help guide and support course coordinators in their efforts to integrate CSL in their academic courses. The diverse range of design principles makes it possible to acknowledge students' pre-CSL experiences and, thus, construct appropriate scaffolding, which is necessary for students to attain the improved academic and personal competencies envisaged through CSL, and ultimately to become productive 21st century citizens.

ARTICLE HISTORY

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KEYWORDS

Community service learning; citizenship; 21st century competencies; higher education; course implementation; design considerations; scaffolding

Introduction

There is an expectation for 21st century citizens to be able to adapt and evolve at pace, in response to rapid societal change. This requires critical thinking and problem-solving competencies that can only be acquired through engagement with the society as it is now (Bellanca 2010). Therefore, to thrive in the 21st century and participate as active citizens within a community, there is a need for students' engagement with society to be central to the university mission (Fitzgerald et al. 2016). There are increasing calls for universities to provide students with the opportunity to engage in experiential learning, in which they can achieve real-life experiences *in* and *with* the surrounding community (Bell 2010; Fitzgerald et al. 2016). One way to stimulate experiential learning is by introducing 'community service learning' (CSL) within university courses. Crucially, in CSL, the focus shifts to experience based on *practice* rather than relying solely on acquiring formal knowledge. The students' experience of CSL is expected to cultivate civic responsibility and enhance communication skills and problem-solving abilities (Bell 2010). It is recognised that there are different conceptualisations and definitions of CSL. For the purpose of the current study, the definition of CSL proposed by Bringle and Hatcher was adopted:

'CSL is a course-based, credit-bearing educational experience in which students (a) participate in an organized service activity that meets identified community needs, and (b) reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility'

(Bringle and Hatcher 1995, 112).

CSL is widely regarded as an effective mechanism for developing, maintaining, or adjusting the links between universities and the surrounding community (Roman 2015). Furthermore, research suggests that CSL significantly enhances students' cognitive development, improves academic performance (Eyler et al. 2001; Lemieux and Allen 2007; Roman 2015) and helps develop competencies such as reflection, critical thinking, problem analysis, personal development, interpersonal skills, and cultural understanding (Celio, Durlak, and Dymnicki 2011; Conway, Amel, and Gerwien 2009; Eyler et al. 2001; Schutte et al. 2015; Warren 2012; Yorio and Ye 2012). However, despite the indications of beneficial learning outcomes resulting from CSL, university strategies for its implementation are diverse, since they are often dependent on context (Butin 2006; Holland 1997; Roman 2015).

In the existing literature, there are many case studies of universities that have integrated CSL in a course (Klink and Athaide 2004; Wei, Siow, and Burley 2007). Most of these studies are, though, limited to a specific discipline or programme and emphasise design principles tailored to these specific fields. Other more general research papers describe the implementation at the institutional level, mostly in the context of the USA (Bringle and Hatcher 1995, 2000; Holland 1997; Young et al. 2007). In other words, the current literature provides either very specific implementation strategies, often limited to one particular discipline, or strategies not applicable to particular courses but, rather, to an institution as a whole. To centralise engagement across different universities, a more generic approach to integrating CSL within courses needs to be established. As most current studies do not take multiple disciplines – such as sociology, medicine, IT, marketing – into consideration, the generalisable value of these strategies remains unclear.

To fill this gap, a systematic review was conducted to establish the general design principles related to the incorporation of CSL in university courses. To define such design principles, this review included various articles on implementing CSL in academic courses within various disciplines. Lessons learned from these studies are combined into one framework. The design principles resulting from this review offer course coordinators the guidance to help to implement CSL successfully, irrespective of their discipline, while taking into account students' capability by differentiating according to their prior CSL experiences – an approach that, to our knowledge, is lacking in the existing literature.

Purpose

This systematic review aimed to identify the steps for implementing CSL in academic courses and the underlying design principles. In this way, we aim to make a useful contribution to the scientific literature by providing guidance to help course coordinators to integrate CSL from a more thorough scientific basis.

Methods

Search procedure

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Liberati et al. 2009). A comprehensive search was conducted in the bibliographic databases PsycINFO (via Ebsco), Eric (via Ebsco) and Scopus from inception to 18 June 2018 in collaboration with a medical librarian (LS). Search terms included controlled terms (Thesaurus terms in PsycINFO and in Eric) as well as free text terms. The following terms were used (including synonyms and closely related words) as index terms or free-text words: 'universities' and 'community service learning' and 'implementation' or 'design'. Duplicate articles were excluded. See Table 1 for the search string used in Eric.

Selection of articles

Abstract screening was performed using Covidence (www.covidence.org). In order to safeguard the consistent interpretation and application of the inclusion criteria, two researchers (FH, NB) performed the abstract screening independently. In the event of a discrepancy, it was discussed, if necessary, with a third researcher, until consensus was reached. The full texts of the studies included were then assessed by two researchers (FH, NB). In cases where the two researchers rated the full text differently, consensus was reached by discussion and other co-authors were consulted if necessary, to make a final decision. The reference lists of included articles and some relevant but excluded dissertations were screened, in order to identify additional relevant studies.

Table 1. Details of the search string.

Search	Query
S4	S1 AND S2 AND S3
S3	DE ('Program Implementation' OR 'Curriculum Implementation' OR 'Design' OR 'Classroom Design' OR 'Curriculum Design' OR 'Educational Facilities Design' OR 'Instructional Design' OR 'Program Design') OR TI (implement* OR design*) OR AB (implement* OR 'classroom design' OR 'curriculum design' OR 'educational facilities design' OR 'instructional design' OR 'program design')
S2	DE ('Service Learning' OR 'Citizen Participation') OR TI ('community service-learning' OR 'community service learning' OR 'service-learning' OR 'community-based learning' OR 'community-engaged learning' OR 'academically based community service' OR 'civic engagement') OR AB ('community service-learning' OR 'community service learning' OR 'service-learning' OR 'community-based learning' OR 'community-engaged learning' OR 'academically based community service' OR 'civic engagement')
S1	DE ('Universities' OR 'Land Grant Universities' OR 'Open Universities' OR 'Research Universities' OR 'State Universities' OR 'Urban Universities' OR 'Higher Education' OR 'Graduate Study' OR 'Undergraduate Study' OR 'Graduate Medical Education') OR TI (universit* OR 'higher education' OR 'graduate stud*' OR 'undergraduate stud*' OR (graduate N3 education) OR academ*) OR AB (universit* OR 'higher education' OR 'graduate stud*' OR 'undergraduate stud*' OR (graduate N3 education) OR academ*)

Note: DE is a searchable field code to search for exact subject headings within the Subject Fields section of a citation. TI is used to search within the article title and AB is used to search within the abstract. The truncation symbol (*) is used as a substitute for any string of zero or more characters in the search term.

Inclusion criteria were:

- (a) The article focused on implementation of CSL at a university course level, including all academic disciplines.
- (b) The article concerned a research article reporting on new empirical data *or* in which a programme for a CSL course was developed.
- (c) The article was published in a peer-reviewed journal.
- (d) The article was written in English.

Exclusion criteria were:

- (a) It focused on internships, volunteering and extracurricular courses, on a specific case with no emphasis on implementation, on a broader institutional level or primarily on outcomes of CSL.
- (b) It focused on unrelated settings such as primary education, secondary education, or practice-oriented education.
- (c) It was not peer reviewed or did not contain new data, e.g. literature reviews, book chapters, dissertations, conference papers, editorials, abstract overviews, letters and comments.
- (d) It was in a language other than English.

The adequacy and completeness of the search string was examined by the checking of the relevant references of the studies included, by a researcher who had not been involved in the screening phases of the articles (AS). The references in the selected articles were checked in order to determine whether other relevant articles had been missed in the initial search. In relation to the terminology of the research string, it should be noted that the use of 'service- learning', 'community-based learning' and 'community-engaged learning' are mostly US centric terms and we acknowledge that this may have led to the identification of more US-based literature.

Data extraction

Articles meeting all the inclusion criteria were retained for data extraction, using a data-extraction table that contained the following content: objectives, partnership, format, reflection, assessment, and evaluation. The following descriptive characteristics were extracted: study discipline, study type, field of study, country, length of course, time investment by students, number of students, course format, initiation of the partnership, reflection format and the name of the journal.

Quality assessment

The quality of the included studies was assessed using the Critical Appraisal Skills Programme (CASP), developed by the Public Health Resource Unit of the UK National Health Service (NHS) in collaboration with the UK Centre for Evidence Based Medicine and the Birmingham critical appraisal skills programme (Singh 2013). The CASP includes 10 questions for appraisal of qualitative research articles focused on the chosen research design, manner of data collection and analysis, ethical concerns, the study finding, and the relationship between the researcher and the participant. The quality assessment was performed to provide the authors and future readers with insight into the quality of the included studies, without seeking to exclude studies of lower quality. In order to minimise author personal bias, eight of the included articles were assessed by two researchers independently (GT, AS). After establishing that the scores given to the articles matched the assessment of both researchers (with an error rate lower than 10%), one researcher finalised the quality assessment (GT).

Analysis of articles

To avoid errors of judgement and to minimise bias in the analysis, the articles were analysed by two researchers using a narrative approach (SA, GT). In the first round of analysis, both researchers extracted implementation elements and principles that appeared in the different articles. The two researchers compared implementation elements and discussed the importance and relevance of the extracted elements with each other and in the research team. This allowed for continuous feedback and opportunities for discussion, when discrepancies occurred. Similar or overlapping elements were grouped under more general terms, defined here as *design principles*. These design principles were then merged into themes, and labelled implementation 'steps', in order to create a clear approach for the researchers to analyse the included articles further and to structure the results. The analysis was then checked by a third researcher (AS), who compared the results section with the results of each article included. Where appropriate, the results were supplemented or refined.

Findings

This systematic review aimed to provide insights into general design principles for implementing CSL. First, the study selection and quality assessment and the context related to the included articles will be briefly discussed. Second, the results will be

discussed based on the three implementation steps identified: (1) aligning course objectives and format; (2) establishing a relationship with the community partner and (3) defining a reflection and evaluation strategy.

Study selection

The searches resulted in 1742 titles. After removing duplicates, 1470 articles were included for abstract screening, after which the remaining articles ($n = 70$) were forwarded to the full text-screening phase. Two researchers performed the full-text screening (SA, GT); discrepancies were discussed with a third researcher (FH) until consensus was reached. This resulted in a total of 31 articles that were included in this review (see [Figure 1](#)). One additional article was added after checking the references of the articles included, resulting in a total of 32 studies.

Quality assessment

As explained above, we assessed the studies using the CASP. Of the original 31 studies, 16 studies met four out of ten quality criteria (Brundiers, Wiek, and Redman 2010; Cloete and Erasmus 2012; Ebacher 2013; Hondagneu-Sotelo and Raskoff 1994; Hydorn 2007; Kincade and Gibson 2012; Ma and Chan 2013; Mumford and Kane 2006; Musa et al. 2017; Sánchez-López 2013; Shannon, Kim, and Robinson 2012; Stoecker et al. 2010; Trudeau and Kruse

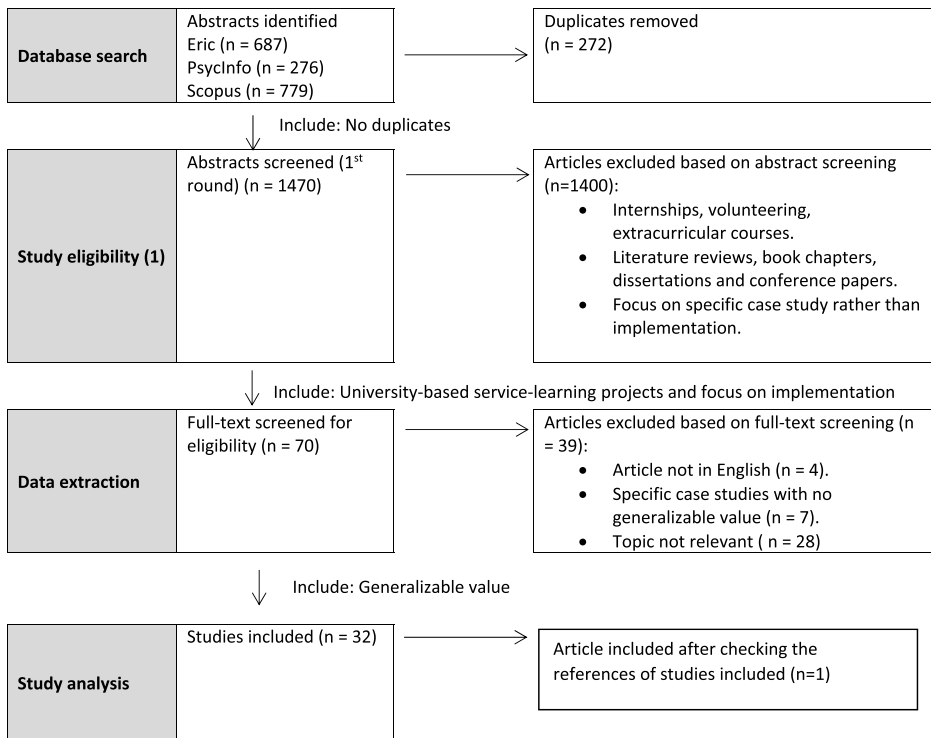


Figure 1. Flow chart showing the articles included and excluded at each stage.

2014; Volkema 2010; Werner et al. 2002; Zollinger et al. 2009); seven studies met five quality criteria (Campbell 2012; Karasik, Maddox, and Wallingford 2004; Klink and Athaide 2004; Marx and Miller 2008; Murawski, Murawski, and Wilson 1999; Roman 2015; Whitley and Walsh 2014); and six studies (Allison 2008; Bringle and Hatcher 1995; Bringle 2017; Playford et al. 2017; Straus and Eckenrode 2014; Welch 2010) met three criteria. Two studies appeared to have the highest quality, with one study meeting seven quality criteria (Maddrell 2014) and another meeting six (Wei, Siow, and Burley 2007). The analysis reflected that a substantial number of studies did not include specific methodological information with regard to the design choice ($n = 29$), the data analysis ($n = 29$) and the elements implicating the value of the research ($n = 27$). It is important to note that, since a number of studies concerned a case-study design or the development of a specific course programme, some qualitative criteria proved not applicable. The relationship between researcher and participants ($n = 29$), recruitment strategy ($n = 23$) and ethical issues ($n = 24$) turned out to be irrelevant for most of the studies, as no individual respondents were interviewed or observed.

Context

Three of the 32 articles were published before 2000, and the other 21 were published during the last decade. Most of the articles were published in the US ($n = 27$), others in Hong Kong ($n = 2$), South Africa ($n = 1$), Malaysia ($n = 1$) and Australia ($n = 1$). All included articles used a qualitative research design, with the exception of one article that used a survey (Murawski, Murawski, and Wilson 1999). Twenty-seven of the 32 articles discussed case studies in which CSL was implemented in a course, including general implications, while the other four articles were classified as more prescriptive, general research articles on the implementation of CSL. The studies related to courses in Arts and Humanities ($n = 10$), Medical Sciences ($n = 4$), Social Sciences ($n = 5$), Physical Sciences ($n = 1$), Technology ($n = 3$), Statistics ($n = 1$), Sustainability ($n = 1$) and not specified ($n = 7$). For more detail, see Table 2.

The duration of the CSL course varied. In the case studies included in the review, CSL courses mostly lasted for a semester or more ($n = 18$). Although some articles mentioned the length of the semester (15 weeks) ($n = 3$), often the length was not explicitly mentioned ($n = 14$). Other articles did not explicitly mention the length of the CSL course at all ($n = 15$). The time students spent on a CSL course varied between ten and 60 hours, but most articles gave no clear time indication ($n = 24$). The number of students involved in the CSL courses ranged from seven to 378. Generally, groups of students involved in a CSL activity comprised three to six ($n = 4$). Most authors defined CSL according to the definition of Bringle and Hatcher (1995) ($n = 9$), in which CSL is confined to a course-based and credit-bearing educational experience and where student reflection and civic responsibility were explained. In other articles ($n = 4$), the definition of Jacoby (1996) was used to specify CSL more broadly as 'a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development' (p. 5) (Jacoby 1996). The remaining articles either did not specify their definition or devised their own interpretation of CSL, which was in line with the definition of Bringle

Table 2. Overview of the characteristics of articles included in the review.

Author(s)	Research design	Field of study	Country	Length of course	Time	Students	Course format	Initiation partnership	Reflection method
Allison (2008)	case study	Public relations	USA	NS	10-5- hours	NS	NS	instructor	multiple reflective journals
Bringle (2017)	conceptual article	NS	USA	NS	NS	NS	NS	instructor	multiple reflective journals
Bringle and Hatcher (1995)	conceptual article	NS	USA	NS	NS	NS	discipline-based	instructor and student	NS
Brundiers, Wiek, and Redman (2010)	conceptual article	NS	USA	multiple semesters	NS	NS	multiple	instructor and student	verbal reflection
Campbell (2012)	case study	Social work	USA	semester	NS	17	problem-based	instructor and student	NS
Cloete and Erasmus (2012)	case study	Music	South Africa	NS	NS	NS	NS	NS	multiple
Ebacher (2013)	case study	Spanish	USA	NS	NS	NS	NS	NS	multiple
Hondagneu-Sotelo and Raskoff (1994)	case study	Sociology	USA	semester	NS	NS	project-based	NS	multiple
Hydorn (2007)	case study	Statistics	USA	multiple semesters	NS	NS	multiple	student	multiple
Karasik, Maddox, and Wallingford (2004)	case study	Geriatrics	USA	15-week semester	20-30 hours	50	discipline-based	NS	weekly reflective journals
Kincade and Gibson (2012)	case study	Retail	USA	semester	10-20 hours	NS	project-based	instructor	verbal reflection
Klink and Athaide (2004)	case study	Marketing	USA	15-week semester	10 hours	NS	problem-based	NS	NS
Ma and Chan (2013)	case study	NS	Hong Kong	NS	30 hours	NS	problem-based	instructor	multiple
Maddrell (2014)	conceptual article	NS	USA	15-week semester	NS	NS	NS	NS	reflective journals
Marx and Miller (2008)	case study	Sociology	USA	semester	NS	NS	discipline-based	NS	NS
Ming (2009)	case study	Liberal arts	Hong Kong	semester	20-60 hours	199	discipline-based	instructor	multiple
Mumford and Kane (2006)	case study	Sports	USA	NS	NS	83	problem-based	NS	verbal reflection
Murawski, Murawski, and Wilson (1999)	conceptual article	Pharmaceutical	USA	NS	NS	NS	NS	NS	NS
Musa et al. (2017)	case study	IT	Malaysia	semester	NS	378	problem-based	NS	multiple

(Continued)

Table 2. (Continued).

Playford et al. (2017)	conceptual article	Medicine	Australia	NS	NS	NS	NS	student	NS
Roman (2015)	case study	Public administration	USA	NS	NS	problem-based	NS	student	multiple
Sánchez-López (2013)	case study	Spanish	USA	NS	NS	NS	NS	student	verbal reflection
Shannon, Kim, and Robinson (2012)	case study	Sociology	USA	NS	NS	NS	NS	instructor	NS
Stoecker et al. (2010)	case study	IT	USA	semester	20 hours	8 project-based	NS	student	NS
Straus and Eckenrode (2014)	case study	History	USA	semester	NS	NS problem-based	NS	instructor	NS
Trudeau and Kruse (2014)	case study	Pedagogy	USA	semester	30–40 hours	20 discipline-based	multiple	instructor	multiple
Volkema (2010)	conceptual article	NS	USA	NS	NS	8–40> problem-based	NS	multiple	NS
Wei, Siow, and Burley (2007)	case study	IT	USA	semester	NS	NS	multiple	instructor	multiple
Welch (2010)	conceptual article	NS	USA	NS	NS	NS discipline-based	NS	instructor	NS
Werner et al. (2002)	conceptual article	NS	USA	NS	NS	NS	instructor and student	NS	NS
Whitley and Walsh (2014)	case study	Kinesiology	USA	semester	NS	NS problem-based	NS	NS	weekly reflective journals
Zollinger et al. (2009)	case study	Interior design	USA	semester	NS	NS multiple	NS	NS	verbal reflection

Key: NS = not specified

and Hatcher (1995). An overview of the characteristics of the included articles can be found in Table 2.

Three implementation steps for CSL

The articles included in the review discussed various frameworks and models focused on the implementation of CSL within courses. As noted previously, implementation elements and principles were extracted from the included articles and inductively grouped together. For the purpose of this review, they will be referred to as the *general design principles*. Subsequently, these design principles were clustered, resulting in three implementation steps: (1) aligning course objectives and format; (2) establishing a relationship with the community partner and (3) defining a reflection and evaluation strategy. Figure 2 presents multiple interrelations between the three implementation steps. Furthermore, it should be recognised that the steps are likely to take place more or less simultaneously rather than sequentially. We found that the nature of the design principles (the specific approach) should match students' capabilities (Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012). These capabilities are often dependent on students' prior experiences (Karasik, Maddox, and Wallingford 2004). This has resulted in an implementation framework combining the implementation steps, related design principles and specific approaches, taking account of prior CSL experience.

Step 1: aligning course objectives and course format

The first implementation step is to consider the course objectives in relation to both the students and the community partner. A careful review of the included articles revealed

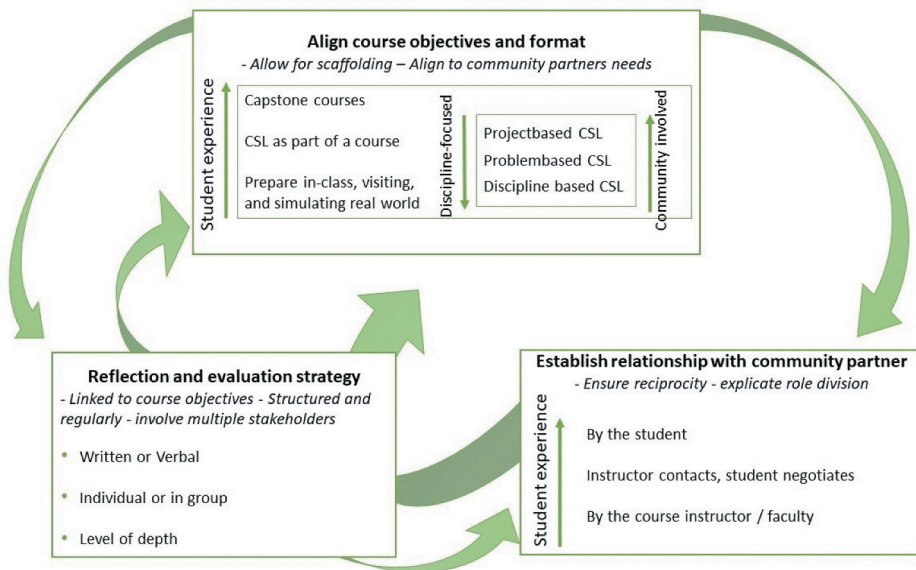


Figure 2. Steps for the implementation of CSL within courses.

the importance of considering students' capabilities and allowing for proper integration of community-based activities. Both design principles will be discussed in the paragraphs below.

Aligning course objectives and course format to student capabilities

Depending on the students' prior experiences, the appropriate course objective and accompanying course format may be chosen, in order to fit the CSL experience to the students' capabilities (Karasik, Maddox, and Wallingford 2004; Maddrell 2014; Zollinger et al. 2009). For the purpose of this review, we distinguished between students with no prior CSL experience, students with some CSL experience, and experienced students who followed several CSL courses. When students have no CSL experience, preparation is proposed as the first course objective, as students need more assistance in getting started (Karasik, Maddox, and Wallingford 2004). With some CSL experience, engagement is seen as a course objective (Brundiers, Wiek, and Redman 2010). Finally, when CSL experience is high, capstone course formats may be chosen to recapitulate acquired knowledge and apply this to the real world (Brundiers, Wiek, and Redman 2010; Hydorn 2007; Kincade and Gibson 2012). The following sections will provide specific course formats for each of these course objectives. These formats, in turn, allow for scaffolding, enabling future CSL courses to build on previously established knowledge (Kincade and Gibson 2012). Scaffolding may be achieved within the same course (Cloete and Erasmus 2012) or across multiple courses (Kincade and Gibson 2012). Course objectives are generally related to improving the following student competencies:

- (1) Gaining insights in complex community and/or social issues (Allison 2008; Ming 2009; Sánchez-López 2013; Welch 2010)
- (2) Enhancing social skills and problem-solving competences (Allison 2008; Ming 2009; Sánchez-López 2013; Welch 2010)
- (3) Transferring classroom knowledge to the 'real world' (Allison 2008; Ming 2009; Straus and Eckenrode 2014)
- (4) Reflecting on a person's own values and skills (Bringle 2017; Welch 2010)

Course formats for student preparation

In order to develop the above mentioned students' competencies, students need to be properly prepared, especially since they will deal with real-world problems (Brundiers, Wiek, and Redman 2010; Cloete and Erasmus 2012; Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012; Mumford and Kane 2006; Murawski, Murawski, and Wilson 1999; Playford et al. 2017; Shannon, Kim, and Robinson 2012; Whitley and Walsh 2014). The preparation may include training in communication skills (Ming 2009; Straus and Eckenrode 2014; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007; Whitley and Walsh 2014); conflict-resolution skills (Mumford and Kane 2006; Musa et al. 2017; Shannon, Kim, and Robinson 2012); methodological training, such as in statistical practices (Hydorn 2007; Playford et al. 2017); providing contextual information (Trudeau and Kruse 2014) and practical information with regard to developing plans and project management (Mumford and Kane 2006). Preparation resulted in a more positive and valuable experience for the students (Cloete and Erasmus 2012; Karasik, Maddox, and Wallingford 2004; Murawski, Murawski, and Wilson 1999). Brundiers, Wiek, and Redman

(2010) discuss and propose three possible course *formats* to prepare students: 'Bringing the real world to the classroom', 'Visiting the real-world' and 'Simulating the real world'. By *bringing the real world* into the classroom, students identify a real-world problem and formulate a problem-solving approach. Students may, for example, combine theories and frameworks described in academic articles with project materials such as developed proposals, city council letters and news articles. When *visiting the real world*, the students make field trips with little or no stakeholder involvement or in-depth contact with community members. For example, a community representative gives students a tour through a deprived neighbourhood, during which students get more insight into real-world problems. This exposure is critical to informed reflection. In the course format of *simulating the real world*, students participate in facilitated role play to train in communication, evaluation and conflict-resolution skills, using problem analysis and stakeholder-network identification (Brundiery, Wiek, and Redman 2010). All formats, but especially the format of simulating the real world, may be used to prepare students, as it explicitly trains them in the competences needed for CSL.

Course formats for student engagement

When students have been prepared, engagement by actively contributing to a CSL project has been proposed as the next objective (Brundiery, Wiek, and Redman 2010). In the literature, various CSL-engaging course formats have been discussed (Bringle 2017; Hydorn 2007; Stoecker et al. 2010; Werner et al. 2002; Zollinger et al. 2009). In general, the three most commonly used forms of CSL in academic courses are: 'discipline based' (Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012; Marx and Miller 2008; Trudeau and Kruse 2014; Welch 2010); 'problem based' (Campbell 2012; Klink and Athaide 2004; Mumford and Kane 2006; Musa et al. 2017; Roman 2015; Straus and Eckenrode 2014; Whitley and Walsh 2014); and 'project based' (Stoecker et al. 2010) service learning, whereby a declining emphasis is placed on the course content and an increasing focus on community needs in the described order. Within *discipline-based CSL*, there is a specific link between the course content and the community experience, but the emphasis is on the non-service content (Hydorn 2007). For instance, students volunteered for community agencies serving older adults in order to personalise the population being studied in the gerontology course (Karasik, Maddox, and Wallingford 2004). In line with this format, Kincade and Gibson (2012) argue that the service-learning experience should be seen as an add-on to the original course objectives (Kincade and Gibson 2012). The most common format applied to service learning is *problem-based learning*. The well-known concept of problem-based learning has been broadly applied beyond CSL courses. In adopting this format specifically in CSL, the students work for the community as consultants. They gain knowledge and experience by using the course content to solve a community problem (Hydorn 2007; Werner et al. 2002). In the study by Musa et al. (2017) for instance, the students either developed a system or an ICT course based on the community's technological needs. Finally, the course format of *project-based CSL* is similar, but the objectives are built entirely around the community needs rather than curricular objectives (Stoecker et al. 2010). Within the literature included in this review, the project-based format was not exemplified as a case.

Course formats for students with CSL experience

When students have gained some basic experience with CSL, 'service internships' may allow them to gain CSL experience, given that there is an emphasis on reciprocity and ongoing reflection to stimulate them to make connections between academic content, their own experiences, and the cultural contexts (Bringle 2017; Hydorn 2007; Zollinger et al. 2009). For more experienced individuals, a *capstone course* format is described, which puts reflection at the centre (Allison 2008; Brundiers, Wiek, and Redman 2010; Hydorn 2007; Kincade and Gibson 2012; Ming 2009; Zollinger et al. 2009). Capstone courses are the more advanced and reflective courses designed for majors, and are typically offered to students in their final year. The objective is to recapitulate previous curriculum content and to apply it to real-world learning experiences in order to further enhance students' problem-solving competencies (Brundiers, Wiek, and Redman 2010; Cloete and Erasmus 2012). Capstone courses support students in self-directed learning, critical thinking, and a peer-mentoring capacity and generate a broader understanding of the discipline (Bringle 2017; Brundiers, Wiek, and Redman 2010; Cloete and Erasmus 2012; Hydorn 2007; Kincade and Gibson 2012; Zollinger et al. 2009). Moreover, in capstone courses there is often room for the students themselves to identify CSL projects (Kincade and Gibson 2012). The students find their own community partner, assemble a team, write a proposal, develop and complete the project (Hydorn 2007). The more experienced the students are, the more complex the CSL project may be, as they are able to work more independently.

Aligning course objectives to needs of community partner

When CSL is implemented as part of a course, it is imperative to integrate the community-based activities with the academic content and corresponding learning objectives (Bringle 2017; Campbell 2012; Ebacher 2013; Kincade and Gibson 2012; Mumford and Kane 2006; Musa et al. 2017; Roman 2015; Stoecker et al. 2010; Straus and Eckenrode 2014; Welch 2010; Werner et al. 2002; Whitley and Walsh 2014; Zollinger et al. 2009). Therefore, CSL projects should be designed, implemented and assessed in collaboration with the community partner (Allison 2008; Cloete and Erasmus 2012; Ebacher 2013; Maddrell 2014).

It is strongly recommended that community partners be involved in identifying appropriate projects and the development of the objectives, so that they become equal partners (Cloete and Erasmus 2012; Hydorn 2007; Musa et al. 2017; Stoecker et al. 2010; Wei, Siow, and Burley 2007; Welch 2010). The ideal project takes the needs of community members and the unique expertise of a discipline into account. Sometimes, however, it is difficult to decide whether to place the emphasis on the needs of a community organisation or on academic standards (Volkema 2010). Without a mutually beneficial relationship between the community and scientific aims, the result might be a project with no academic content (Welch 2010). Dialogue and the involvement of a faculty member, student, and community partner in the design of the objectives prevents a disconnect between the aims of community partners, the university, and the students involved (Sánchez-López 2013; Welch 2010). A 'listening' curriculum is needed to include and change the perspectives of those involved (Playford et al. 2017). A covenant or contract can be used to formalise agreements with regard to the obligations and responsibilities of all parties involved, in order to underline their respective commitments (Bringle and

Hatcher 1995; Hydorn 2007; Maddrell 2014; Murawski, Murawski, and Wilson 1999; Musa et al. 2017; Playford et al. 2017). A description of the project with the expected duration and time investment of student(s) can be included, along with a step-by-step plan for completing the CSL project (Allison 2008; Stoecker et al. 2010; Trudeau and Kruse 2014).

Step 2: establishing a relationship with the community partner

The second implementation step is to establish a relationship with the community partner. When designing a CSL course, it is important to contact different potential community partners (Kincade and Gibson 2012; Mumford and Kane 2006; Shannon, Kim, and Robinson 2012; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007). As identifying service learning projects with community partners requires time, this should start at least three months in advance (Ma and Chan 2013; Playford et al. 2017; Sánchez-López 2013). Prospective clients or community agencies can be approached via internet-based research, phone calls and personal visits (Trudeau and Kruse 2014; Wei, Siow, and Burley 2007). Information with regard to the course objectives, a course syllabus, students' skills and abilities, and the kinds of projects being sought can be provided to give community partners a better understanding of the request (Kincade and Gibson 2012; Sánchez-López 2013; Wei, Siow, and Burley 2007; Welch 2010). The faculty, course coordinator or institutional office should maintain and frequently update the list of community partners, including contact information and a detailed description of the agency (Roman 2015; Sánchez-López 2013). In general, interested community partners can be screened – for instance, on whether they are willing to commit to working with students on a regular basis and intend to implement the resulting recommendations (Klink and Athaide 2004). The review identified three different approaches to contacting the community partners:

- (1) The course coordinator or faculty contacts potential partners and negotiates the project (Allison 2008; Kincade and Gibson 2012; Ming 2009; Shannon, Kim, and Robinson 2012; Straus and Eckenrode 2014; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007; Welch 2010).
- (2) The course coordinator contacts potential partners, but the students negotiate their own project (Bringle and Hatcher 1995; Campbell 2012; Playford et al. 2017; Sánchez-López 2013; Werner et al. 2002).
- (3) The students are responsible for identifying potential partners and negotiate their own project (Roman 2015; Stoecker et al. 2010).

The options represent increasing experience and commitment on the part of the students (Volkema 2010). The most common approach was the first, in which the course coordinator contacts the partner and negotiates the project, as this is quicker and better suited to less experienced students, although there are arguments for allowing the students to negotiate their own project, because this may result in a more meaningful CSL experience. For students to negotiate their own project or even identify their own partner demands more experience and commitment (Volkema 2010). The following paragraphs describe the three different approaches in more detail.

In the first option, the course coordinator or faculty contacts the potential partner and negotiates the project. In this case, the students do not necessarily need project management experience at the start of the CSL project and can spend the maximum amount of time on completing their project, which can be important in relatively short courses (Volkema 2010). The course coordinator might use job interviews to determine the students' proficiency in relation to the expertise needed, or choose randomly when students have the same level of expertise (Allison 2008; Ebacher 2013; Shannon, Kim, and Robinson 2012; Volkema 2010). It is often mentioned that community partners should be selected before the start of the course (Allison 2008; Campbell 2012; Klink and Athaide 2004; Playford et al. 2017; Stoecker et al. 2010). By expanding their network of community partners, course coordinators can help to establish a regional 'hub' at the university for a sustainable collaborative partnership with various community partners (Brundiars, Wiek, and Redman 2010; Ming 2009; Roman 2015). The maintenance of the partnership is often extended beyond the boundaries of the course, which can lead to additional time and effort on the part of the course coordinator (Zollinger et al. 2009). The coordinator needs to manage both the expectations of the community partners and the students in order to maintain a healthy partnership (Klink and Athaide 2004; Shannon, Kim, and Robinson 2012; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007; Zollinger et al. 2009). The sustainability and effectiveness of the partnership is highly dependent on the satisfaction of the parties involved (Straus and Eckenrode 2014).

In the second option, the course coordinator contacts the potential partner but the students negotiate their own project. In this case, it may be useful to set up an orientation meeting with the community partner for students to be acquainted with the policies and procedures in the community organisation (Campbell 2012). Ideally, this on-site orientation is followed by consultation meetings during which students propose their planned activities to the course coordinator (Ming 2009; Sánchez-López 2013; Stoecker et al. 2010). It has been suggested that, when the students select the partner, it adds to a more interesting, meaningful and challenging CSL experience (Allison 2008; Ebacher 2013; Hondagneu-Sotelo and Raskoff 1994; Hydorn 2007; Sánchez-López 2013; Shannon, Kim, and Robinson 2012; Trudeau and Kruse 2014; Volkema 2010; Welch 2010; Werner et al. 2002; Whitley and Walsh 2014). Similarly, community members can take an active role in the selection process, with the additional benefit that they will be more willing to invest time and effort in the students chosen (Maddrell 2014; Werner et al. 2002). The partnerships are built on reciprocity (Bringle 2017) and trust between partner and student is important (Kincade and Gibson 2012). Written documents may help to build trust and ensure reciprocity (Allison 2008; Brundiars, Wiek, and Redman 2010; Kincade and Gibson 2012; Maddrell 2014; Trudeau and Kruse 2014; Welch 2010).

In the third option, students select their own partner and negotiate their own project. Giving students a say in the selection of their own project could increase their commitment and align with their career perspectives and personal skills and values (Roman 2015; Sánchez-López 2013; Werner et al. 2002). The process of selecting an appropriate community partner may prove to be time-consuming and difficult (Allison 2008; Playford et al. 2017; Sánchez-López 2013; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007). In addition, it may be argued that students might lack the credibility and skills to do so (Volkema 2010; Werner et al. 2002). Therefore, this approach might be more appropriate in capstone courses, when students already have more experience with CSL (Hydorn

2007). Roman (2015) suggests a digital platform in which students directly communicate with the community partner as well as with other students, which might prove useful in this type of set-up. Students and coordinators are encouraged to use their professional network to initiate partnerships (Trudeau and Kruse 2014; Werner et al. 2002).

Step 3: defining a reflection and evaluation strategy

In the third implementation step, the reflection and evaluation strategy needs to be defined. Based on the course objectives, prior CSL experience, type of CSL activity, and the availability of resources, the course coordinator should choose the most appropriate form of reflection and evaluation. Again, there appears to be a form of scaffolding within this design principle; inexperienced students might need more prompts while more experienced students might reflect more independently. However, from the literature it is difficult to determine which evaluation method suits less or more experienced CSL students, so we decided not to prioritise assessment in the framework.

Reflection

The quality of the CSL component is very much dependent on the reflection activities (Bringle 2017; Murawski, Murawski, and Wilson 1999; Roman 2015; Welch 2010; Whitley and Walsh 2014). Bringle and Hatcher (1995) proposed that effective reflection should: be linked to the learning experience, be guided, occur regularly, allow feedback and assessment and foster the explanation and clarification of values (Bringle and Hatcher 1995). In this way, the process of reflection helps to convert the real-world experience into fundamental and integrated knowledge (Bringle and Hatcher 1995; Kincade and Gibson 2012; Ma and Chan 2013; Zollinger et al. 2009). Many researchers argue that reflection needs to be continuous and not bound to specific timeframes (Cloete and Erasmus 2012; Marx and Miller 2008; Mumford and Kane 2006; Murawski, Murawski, and Wilson 1999; Trudeau and Kruse 2014; Welch 2010). When designing a CSL course, it is important to consider reflection formats and activities that fit with its objectives. In this way, reflection can be used to link the CSL activity to the course, and its learning objectives, and so facilitate learning (Bringle 2017; Maddrell 2014; Straus and Eckenrode 2014; Werner et al. 2002) or even assess the learning objectives (Klink and Athaide 2004; Maddrell 2014; Welch 2010). This implies that more intensive forms of reflection are used for more experienced students, as they do not have the same learning objectives as students who lack experience. In addition, students may reflect on how information from previous courses helped them during the new experience (Kincade and Gibson 2012).

There are several approaches to reflection. A distinction can be made between written reflection, which is often individual, and verbal reflection, which may be within a group. A *written reflection* gives students the opportunity for unstructured reflection on what they have seen, thereby increasing critical thinking, progressive thought, value clarification, and ethical decision-making (Allison 2008; Hondagneu-Sotelo and Raskoff 1994). It helps students explore their experiences autonomously, while connecting to course themes (Trudeau and Kruse 2014). However, one needs to keep in mind that, while unstructured reflection increases critical thinking and decision-making, guidance and support from teachers might be needed depending on the experience of the students (Ming 2009; Zollinger et al. 2009). Seven examples of written reflection are: (1) short

written reports (Allison 2008), (2) reflective journals (Allison 2008; Bringle and Hatcher 1995; Hondagneu-Sotelo and Raskoff 1994; Hydorn 2007; Maddrell 2014; Ming 2009; Musa et al. 2017; Roman 2015; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007), (3) weekly reflective journals (Karasik, Maddox, and Wallingford 2004; Whitley and Walsh 2014), (4) reflective diary (Ma and Chan 2013), (5) papers (Campbell 2012; Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012; Klink and Athaide 2004; Sánchez-López 2013), (6) questionnaires (Cloete and Erasmus 2012) and (7) essays (exam questions) (Allison 2008; Ebacher 2013; Hondagneu-Sotelo and Raskoff 1994; Ming 2009). Two potential concerns that might arise from written reflection are the possibility that students place themselves above the community members as omniscient (the 'white knight syndrome') or they apply a theoretical framework while failing to make connections with their community service experience (Hondagneu-Sotelo and Raskoff 1994).

Examples of *verbal reflection* are discussions among students and class presentations (Allison 2008; Brundiers, Wiek, and Redman 2010; Cloete and Erasmus 2012; Ebacher 2013; Hydorn 2007; Kincade and Gibson 2012; Ma and Chan 2013; Mumford and Kane 2006; Musa et al. 2017; Roman 2015; Trudeau and Kruse 2014; Volkema 2010; Wei, Siow, and Burley 2007; Zollinger et al. 2009) or discussions with different stakeholders (Ebacher 2013; Sánchez-López 2013), possibly facilitated by an online platform (Campbell 2012). These discussions might facilitate peer learning (Sánchez-López 2013; Trudeau and Kruse 2014). Group reflection is suggested as being most effective when students are asked to participate in the construction of their own and each other's reflection on community experiences (Trudeau and Kruse 2014). Online opportunities are also used, such as online portfolios to allow students to reflect on their work (Playford et al. 2017). An online platform or digital portfolio may also enable students to share their critical reflections and questions with course coordinators (Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012; Roman 2015) and other students (Karasik, Maddox, and Wallingford 2004; Kincade and Gibson 2012; Trudeau and Kruse 2014). In one study (Stoecker et al. 2010), students were required to blog about the progress of their project after meeting their community partners. Community partners might be invited to blog as well (Stoecker et al. 2010).

Both written and verbal reflection consolidate the learning experience (Cloete and Erasmus 2012; Roman 2015; Trudeau and Kruse 2014; Welch 2010). It cannot be assumed that all students know how to reflect effectively, especially when they have no CSL experience. Trudeau and Kruse (2014) argue that support is essential to assist students in reflection. The course coordinator should create a safe environment for the students and community partners to express their reflective insights (Cloete and Erasmus 2012) and guide them during the reflective process (Welch 2010). In this way, scaffolding may be constructed: inexperienced students might need structured prompts, and clearly directed reflection in group discussions, while more experienced students are able to reflect independently – for example, in a paper. An example of this is described by Zollinger et al. (2009), who argue that informal conversations are suitable for a junior-level student to reflect, whereas formal reflection, dialogue during the course and assessment at the end are more suitable for senior-level course students (Zollinger et al. 2009). Likewise, Ming (2009) argues that reflective products of CSL may vary based on the experience of the students, from log sheets to full papers. The step-by

-step progression is likely to be shaped by three factors: the role of coordinators, the level of interaction, and the form of collaboration (Brundiery, Wiek, and Redman 2010).

Evaluation

Evaluation by the involved parties is considered necessary to refine learning objectives, to test the quality of the outcomes and to show direction for future CSL activities (Allison 2008; Bringle 2017; Kincade and Gibson 2012; Marx and Miller 2008; Mumford and Kane 2006; Whitley and Walsh 2014; Zollinger et al. 2009). In-depth interviews (or group discussions) and questionnaires can both be used to elicit the various perspectives (Campbell 2012; Kincade and Gibson 2012; Sánchez-López 2013). It is important to evaluate the expectations and outcomes between faculty and students (Brundiery, Wiek, and Redman 2010). With regard to student assessment in CSL courses, two main aspects can be assessed: the process and the products. The value of the products might not be immediately clear; and, as the process involves communication and collaboration issues, there might be a need for frequent contact for a proper assessment (Maddrell 2014). For example, Stoecker et al. (2010) described a case in which the instructor did not notice that one student was repeatedly late for meetings with the community partner. Peer review might be used to let students assess the performance of students in the team (Ma and Chan 2013). Furthermore, individual comprehension tests could be used to assess whether students have acquired a body of knowledge and whether they are able to apply it (Volkema 2010).

Discussion

In previous literature, various case studies and frameworks on the implementation of CSL have been discussed. Many articles, however, discuss specific case studies on the implementation of CSL. Our systematic review is, therefore, based on a wide variety of disciplines, in order to elicit general design principles that need to be considered when integrating CSL into a university course. The wide variety of disciplines contributes to the generalisable value of the design principles, something that had been lacking to date, according to another systematic review (Stewart and Wubbena 2015). The current review, including a total of 32 articles, suggests that the students' level of prior CSL experiences ideally determines the course objectives and format, the approach for initiating partnerships, possibly the type of reflection, and the connections between the three. More specifically, the course objective may change from preparation to engagement, the establishment of the relationship with the partner may eventually become the responsibility of the student, and students may gradually learn to reflect more independently; this may all result in more in-depth reflective outcomes.

For future CSL projects, it is imperative to know which principles and approaches would maximise the probability of the success of a CSL course; there is, of course, little point in reinventing service-learning with every new course (Roman 2015). This review derived three guiding steps and corresponding design principles from CSL courses, which were reported on in the literature across a variety of disciplines focusing on the development of CSL in academic courses. These principles underline the importance of including community partners throughout service learning in the design, implementation and assessment of the studies. Early involvement of and control by community members

will better ensure the alignment of course objectives to the community's needs. In relation to considering the needs of the community, it is equally important that the curriculum allows for room to be responsive. O'Steen and Perry (2012) suggested that curriculum responsiveness to the community's needs has a positive effect on student capabilities to think critically. Moreover, they noted that:

'As a university education should prepare students to be responsive to ever-changing conditions, it seems that the curriculum should seek to engage them by mirroring and promoting that responsiveness.' (O'Steen and Perry 2012, 180).

As the current review suggests, the relationship with the community partner is developed and maintained (to a greater or lesser extent) by the students and the course coordinator. In this way, the possibly changing needs of the community are monitored. Moreover, the approaches and formats described should not be interpreted as fixed but instead as interrelated and gradual. For example, students without CSL experience will doubtless need preparation. Students with more experience will still need preparation but to a lesser extent. Similarly, engagement might take place for students without much CSL experience. Finally, as mentioned earlier in the paper, it is important to emphasise that the implementation steps do not follow a strict sequence but, rather, take place simultaneously.

The central finding from this systematic review is that, when implementing CSL, one should consider scaffolding within each of the proposed implementation steps as a means to determine the appropriate approach. Some studies paid limited attention to the students' prior CSL experiences in the implementation of CSL. This is problematic, given that during the implementation of CSL 'one size does not fit all' (Karasik, Maddox, and Wallingford 2004). The lack of proper preparation and tailoring could lead to misunderstandings (Ming 2009; Straus and Eckenrode 2014; Trudeau and Kruse 2014; Wei, Siow, and Burley 2007; Whitley and Walsh 2014), students may not get enough support and help (Xun and Land 2004) and ethical issues may develop (Mumford and Kane 2006; Musa et al. 2017; Shannon, Kim, and Robinson 2012). In an attempt to provide a more complete picture regarding the implementation of CSL, this review proposes implementation strategies to integrate a CSL component successfully in a course, while also considering students' CSL experience levels. The implementation strategies presented offer specific approaches based on the students' prior experience and allow for proper scaffolding to support each student. Because CSL often deals with difficult problem-based real-life cases, appropriate scaffolding is especially important (Hmelo-Silver, Duncan, and Chinn 2007).

Moreover, multiple studies have underlined the importance of scaffolding in relation to social and emotional growth and understanding (Felten, Gilchrist, and Darby 2006; Maybach 1996; Sleeter, Torres, and Laughlin 2004). Our framework of scaffolding leads to greater independence as an outcome of the learning process (Wood, Bruner, and Ross 1976). An interesting example in this regard may be found in Illustre, Lopez, and Moely 2012: outcomes of the research conducted by Tulane University highlight the positive experiences of students, faculty members and community partners in relation to public engagement (Illustre, Lopez, and Moely 2012).

For the first two implementation steps – defining course objectives and determining who is responsible for the initiation and negotiation of the partnership – the students'

prior experience was regarded as an important aspect. When considering the reflection and evaluation strategy, however, previous CSL experience was often neglected in the literature reviewed. Only two articles noted that the reflection approach should depend on the students' previous experience (Ming 2009; Zollinger et al. 2009). Reflection has a very prominent role in CSL, as reflection is often used to link the CSL activity to the course objectives. Intuitively one could argue that, as the course objectives change, depending on previous CSL experience, so should the reflection activity, as more intense forms of reflection might fit more advanced learning objectives, but this is not specified in the included literature. In their study, Coulson and Harvey (2013) did emphasise the importance of scaffolding in the reflection. They propose four reflective learning phases that will positively contribute to CSL: learning to reflect, reflection for action, reflection in action and reflection on action (Coulson and Harvey 2013). It is suggested that future research should take these reflective phases into account and relate them to the design principles proposed in this review. Moreover, in order to give meaning to the various phases, concrete approaches should be sought. This could add to the framework and provide a more complete picture on how to implement CSL as part of a course, while allowing for student scaffolding.

It should be noted that this review resulted in a large number of US-based studies, and a limited number of studies from other countries. Although this is partly explained by the proliferation of service learning in US universities, it might also reflect different terminology used for similar activities in other countries. For example, terms such as participatory learning, transformative learning and engaged learning were not included in the search string of the current review. As basic CSL elements such as reflection are not necessarily included by such other forms of learning (Stewart and Wubbena 2015), the focus of this review was confined to service learning. Future research might look into the commonalities and differences among the various terms to be able to determine whether studies from other countries using a different terminology might also be relevant.

Methodological considerations

To our knowledge, this is the first review that offers a general implementation strategy for incorporating CSL in academic courses across various disciplines. It contributes to the literature by providing insight into the importance of prior CSL experience and how to deal with this when implementing CSL at the course level. Implementing CSL provides universities with the means to centralise student engagement and produce knowledge that may benefit society – a transition essential for the future prosperity of higher education (Fitzgerald et al. 2016). A particular strength of this systematic review was the inclusion of studies of all academic disciplines, as it accumulates evidence relevant for multiple disciplines and interdisciplinary convergence (Salam et al. 2019; Stewart and Wubbena 2015).

This review also had some limitations. Though we drew out important design principles, our review did not include book chapters or dissertations, as inclusion was restricted to peer-reviewed articles. As already stated, many of the included articles originated from the USA ($n = 27$). Although the framework provides a more general approach to implementing CSL at the course level based on a wide variety of research fields, different national contexts need to be taken into consideration. It is, therefore, important to reflect

critically on the applicability of the proposed implementation strategies. The real-world application of the implementation strategies will lead to possible adaptations and revisions in different countries. In addition, though it was not surprising, many of the articles included in this review used a qualitative methodology. The inclusion of mainly qualitative work might possibly have had an effect on our findings. There is, thus, a need for further quantitative research or mixed method designs to expand our knowledge.

A further limitation is that many of the included articles provided little or no information on basic implementation features such as quality assessment, methodological information with regard to design choice, data analysis and data collection. The lack of details was also evident in basic descriptive characteristics such as time allocated to CSL, the size of the class, and details of the students, lecturers and communities involved. Future research should be more specific in describing such factors, which contribute to the success of CSL (Roman 2015) and should investigate how these more context-specific factors influence the students' scaffolding process and how to ensure proper preparation of students in, for example, larger groups or short-term courses.

Although the institutional level was not the focus of this review, courses are situated within an institutional context, making the interrelatedness of the course and the university self-evident. University offices might facilitate the establishment of relationships with community partners. The university policy might hinder or facilitate the implementation of CSL in courses, and could be the focus of future research.

Conclusion

The proposed design principles emerging from this review arose from a wide variety of disciplines and gave rise to three implementation steps, which can be used to support and guide course coordinators as they develop and implement CSL. The nature of the design principles is dependent on the students' capabilities, which are related to their previous experiences. For the purpose of this review, a distinction was made between students with no CSL experience, students with some CSL experience, and experienced students who had followed several CSL courses. This structure allows for scaffolding, whereby students can gradually gain more independence and ownership. The approach described may help towards the important goal of equipping students with improved competencies such as reflection, critical thinking, and interpersonal skills. It is hoped that the steps, formats and techniques presented in this review will be of use internationally as guidance for the design of future CSL courses, thus helping to prepare students to become productive 21st century citizens.

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