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Looking at role-play simulations of political decision-making in higher education through a contextual lens : a state-of-the-art

Looking at role-play simulations of political decision-making in higher education through a contextual lens: A state-of-the-art.

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Abstract. Researchers have been struggling to capture the learning outcomes of role-play simulations of political decision-making, which shows in inconsistencies in findings. In this systematic review study we argue that research designs should not ignore the contextual features of these simulations. This review aims: (1) to comprehensively map variation in learning environment components, and (2) to increase insights into their relationship with learning outcomes. A systematic search in SSCI and ERIC databases yielded 36 studies that were eligible. The following learning environment components were comprehensively mapped: simulation features (structure and agency), student characteristics, the broader teaching-learning context, and learning outcomes. Findings reveal that more than half of the studies investigate learning outcomes without taking any other learning environment component into account. Learning outcomes have never been studied in relation to the simulation structure or the broader teaching-learning context. Findings are discussed with regard to avenues for future research.

Highlights

- 36 studies were reviewed to comprehensively map learning environment components
- Findings identified specific features of simulation structure and agency
- More than half of the conducted research solely focuses on learning outcomes
- Structure and broader teaching-learning context have not yet been considered

Looking at role-play simulations of political decision-making in higher education through a contextual lens: A state-of-the-art.

1. Introduction

Simulation-based learning environments are valued because they are considered to be rich, authentic learning environments (Ellington, Gordon, & Fowlie, 1998). Their authenticity is reflected in a learning environment that resembles real-world complexity and limitations, including realistic conditions such as environmental distractions, stress, and time pressure (Aldrich, 2006; Beaubien & Baker, 2004; Herrington & Oliver, 2000). Role-play simulations are a specific type of simulation frequently used in higher education learning contexts. They refer to non-computer-based simulations in which participants take on the role of a specific actor in a predefined situation while following a set of rules and interacting with others (Lean, Moizer, Towler, & Abbey, 2006). Such simulations are increasingly implemented in the specific learning context of political decision-making, in which students are assigned roles within socio-political processes and expected to act as real political actors (Boyer & Smith, 2015). Over the past decades, such role-play simulations have become the most commonly used active learning method to teach about complex, dynamic political processes (Ishiyama, 2013; Smith & Boyer, 1996). They are considered valuable learning environments and highly appreciated by students and lecturers (Giovanello, Kirk, & Kromer, 2013; Smith & Boyer, 1996; Van Dyke, DeClair, & Loedel, 2000) because they are known for being related to domain-specific skills, such as political efficacy (Mariani & Glenn, 2014), but also to more generic skills, such as oral communication skills (Obendorf & Randerson, 2013).

To date, researchers have been struggling to capture the learning outcomes of role-play simulations of political decision-making, as seen in research findings being inconclusive regarding simulations' benefits (Biziouras, 2013; Duchatelet, Bursens, Donche, Gijbels, & Spooren, 2018; Raymond, 2010). The difficulty in capturing learning outcomes has mostly been dealt with as an issue of research design and operationalization. For example, Baranowski and Weir (2015) conclude their review about the effects of role-play simulations of political decision-making with a call for more methodological rigour. They advocate including not simply general education learning outcome measures (e.g., grades) and applying

more pre- and post-measurement designs, and more quasi-experimental research designs to investigate simulations' effectiveness.

Alongside methodological rigour, we argue that research designs should not ignore contextual features that might play a role in inconsistencies. The influence of different components of the learning environment should not be underestimated when probing into student learning processes and outcomes (Biggs, 1993; Baker & Delacruz, 2016; Dinsmore & Alexander, 2012). Therefore, this review focuses on the learning environment of role-play simulations of political decision-making. It wants to comprehensively map variation in learning environment components; e.g., which aspects of the simulation can be distinguished? Also, it wants to increase insights into the relationships of simulations' learning environment components with student learning outcomes; e.g., are simulations of a certain size more or less often reported with regard to certain learning outcomes? This review study applies a systematic search to probe into the learning environment of already investigated role-play simulations of political decision-making in order to answer the following research questions:

RQ 1 Which learning environment components and learning outcomes of used role-play simulations of political decision-making can be defined?

RQ 2 Which relationships between simulations' learning environment components and their learning outcomes can be defined?

2. Theoretical background

This section first clarifies what exactly characterises role-play simulations, with a focus on role-play simulations of political decision-making. We distinguish role-play simulations from related phenomena. In addition, we broaden the perspective from specific simulation features to commonly accepted learning environment components of higher education learning environments in order to be able to comprehensively map role-play simulations of political decision-making.

Simulations are generally grouped into two broad categories: (1) model-based simulations on the construction of the theoretical model of a system, mostly used in the sciences and engineering to experiment and test hypotheses (e.g., cruise control simulation), and (2) experiential simulations that offer environments that simplify reality and allow learning in a risk-free environment (e.g., fire fighting training simulations) (Landriscina, 2013; Sauvé, Renaud, & Kaufman, 2010). Role-play simulations of political decision-making belong to the second group of simulations.

The most important feature of all simulations is that they are based on the imitation of a system or situation (Landriscina, 2013; Sauvé et al., 2010). Each simulation includes a certain degree of *verisimilitude,* which implies that the simulation is a valid representation of reality in a structured but simplified way (Ellington et al., 1998; Sauvé et al., 2010; Wright-Maley, 2015). Role-play simulations refer to a particular type of simulation characterised by participants taking on the role of a specific actor in a particular situation (Lean et al., 2006). During role-play simulations of political decision-making participants experience the process of taking decisions in the field of policy-making. They are assigned roles within these socio-political processes and are expected to act as real political actors (Boyer & Smith, 2015).

In general, each simulation needs to be featured by *dynamism* and *outcome variability* (Ellington et al., 1998; Sauvé et al., 2010), which refers to the potential simulations have to flow in unscripted and unexpected directions (Wright-Maley, 2015). For example, in the case of role-play simulations of political decision-making, teachers have experienced that the simulation process as well as its outcome vary from iteration to iteration even when the same students have participated in the same simulation more than once (Usherwood, 2015). Simulations' dynamism and outcome variability are generated by sequential decisions that determine participants' actions; and are considered to be a product of a certain degree of *human agency* combined with the *structure* provided by the simulation environment (Chin, Dukes, & Gamson, 2009; Wright-Maley, 2015). *Human agency* in a simulation-based learning environment refers to the choices that participants make within the simulation's boundaries. *Structure* refers to this simulation environment in which participants operate, of which some elements are stable and others can be influenced by the actions taken by participants (Chin et al., 2009). Generally, we can define two types of decisions: (1) some decisions will relate to participants' individual choices (agency), while (2) other decisions will be constrained by the various elements of the simulation environment (structure) (Chin et al., 2009; Leigh & Spindler, 2004; Wright-Maley, 2015). Within role-play simulations of political decision-making, a participant could make decisions based on the interest of the country or party he/she is representing (agency), or based on reality-based rules (e.g., voting rules) or procedures (e.g., minority block) (structure). We consider voting rules – such as qualified majority voting – to be stable environmental features, while procedural features – such as forging coalition or blocking minorities – to be flexible features because these are shaped by participants' actions.

Figure 1 visualises how related phenomena of simulations, role-plays and games can be distinguished. As depicted, verisimilitude is an essential feature of simulations. It also shows

how a given amount of structure (X-axis) and human agency (Y-axis) shape the degree of dynamism and outcome variability, which need to be included in simulation-based learning environments. When designing simulations, the greatest challenge is to find the right balance between structure and agency (Chin et al., 2009). An inaccurate balance could hinder verisimilitude. For example, when too much structure limits participants' options to choose from or when too little structure allows participants to deviate from real-world processes. Usually, more structure means less human agency. However, when real-world features come into play, the balance between structure and agency should always be interpreted in the light of less or more verisimilitude. For example, flight simulations include a highly structured environment that fosters a high degree of human agency. This results in participants having the possibility to conduct many alternative actions and to receive dynamic feedback, which resembles a full range of 'real-life' options driving participants' decision-making (Hays, Jacobs, Prince, & Salas, 1992). Compared to simulation outcomes, game outcomes are considered to be less dynamic and more quantifiable (winning – losing) as choices of participants are restricted by the games' design (Ellington et al., 1998; Wright-Maley, 2015). For example, the prisoner's dilemma game includes far less structure and agency because, in its basic form, only one decision needs to be made: 'Am I going to rat out my partner in crime or not?' (Asal, 2005). Including dynamism in simulation-games often results in more complexly structured designs that are computer-based; e.g., computer-based leadership simulation-games that have been developed to train leadership skills such as balance power, tension, ideas, and work (Aldrich, 2003). Considering such skills are rather complex and difficult to concretise, simulation-games need to invest in a structure, often computer-based, that provides participants enough agency and sufficient options for decision-making. Role-play simulations do not put excessive demands on the simulation structure. To enable dynamism it is usually sufficient to include reality-based rules and procedures, and let the actors play their roles. Well-known and well-spread role-play simulations are Model United Nations simulations, which simulate existing UN bodies (e.g.; the Security Council) and in which participants apply the rules of debating when representing a UN member or observer state (Obendorf & Randerson, 2013). Their reality-based features make them different from less structured role-plays in which participants act from prescribed roles, such as Korean war (Krebs, 2009). Such role-plays are usually characterised by less agency as participants should stick to their script and not engage dynamically in events when the role-play progresses (Wright-Maley, 2015).

To conclude, we consider it important to point out that the different phenomena are not easy to differentiate from each other. They can appear in their 'pure' form but also in many varying blended forms. The distinction between role-plays, games and simulations should therefore be considered as a continuum rather than as complete separate categories (Wright-Maley, 2015).

* Figure 1 about here *

So far, we have defined structure and agency as essential features of a simulation in order to foster verisimilitude, and a substantial amount of dynamism and outcome variability. Probing into role-play simulations of political decision-making through a contextual lens, these features contribute to the first learning environment component: simulation features. Similar to other learning contexts in higher education, other components that contribute to the (simulation-based) learning environment are: student characteristics, the broader teaching-learning context that might embed the simulation, and the type of learning outcomes that is focused on: cognitive (e.g., knowledge, understanding, skills), affective (e.g., motivation, interest, self-efficacy, engagement), and/or regulative learning outcomes (e.g., self-reflection, self-regulation) (Biggs, 1993; Pintrich, 1994; Richardson, Abraham, & Bond, 2012; Vermunt & Donche, 2017).

3. Method

3.1 Literature search

A literature search in the electronic databases Social Sciences Citation Index (SSCI) and ERIC (Ebsco) was carried out to identify relevant peer reviewed journal articles. In current research, the term 'simulation' is frequently interchanged with others such as role-play and games (Landriscina, 2013; Wright-Maley, 2015). A thesaurus search resulted in the use of the following keywords: 'simulation', 'role-playing', and 'educational games'. As role-play simulations of political decision-making are primarily used in comparative politics and international relations (Baranowksi & Weir, 2015), each of the keywords was separately combined with 'international relations', 'politics', and 'political science'. Over the past decades the use of such simulations has specifically emerged within the field of European studies (Brunazzo & Settembri, 2015), which is why each of the keywords were also separately combined with 'European studies'. The searches covered the years 1970 – 2016 in both databases, since research on the quality of simulations of political decision-making

gained importance in the 1970s (Greenblat, 1973). The final outcomes were as follows: SSCI 1695 references and ERIC 461 references. After removing doubles, 1722 unique references were subjected to initial review. An overview of the results of the literature search is given in Table 1.

* Table 1 about here *

3.2 Selection

To include studies in the synthesis relevant to the review questions, a specific set of inclusion criteria was used. Table 2 visualises the selection procedure using the PRISMA flow diagram (Moher, Liberati, Tetzlaff, Altman, & Group, 2009). The first author screened all journal articles on three categories of criteria: general criteria, simulation features and simulation content. With regard to the general criteria, studies were included when (a) applied in *higher education*, (b) published in *peer-reviewed* journals, and (c) published in *English*.

As this review focuses specifically on role-play simulations, studies were included when (d) focusing on *role-play simulations*, in which participants act out their roles either as unitary actors or as teams. Studies including educational games in which students play 'themselves' were excluded (e.g., Asal, Sin, Fahrenkopf, & She, 2014). Included studies needed to (e) feature *verisimilitude* by simulating real-world contexts (setting, organisation, actor), real-world processes (policy area, decision-making process) or both. Role-plays or games that could not be considered as simulations because they include a combination of fictional countries and non-realistic processes were excluded (e.g., Dingli, Khalfey, Leston-Bandeira, 2013). Selected simulations needed to (f) include *human agency,* which for this review is defined by face-to-face contact, and only peripheral computer use (when applicable). Because of their discernible contextual features simulations that are mainly computer-based or mostly take place online were excluded (e.g., Lay & Smarick, 2006; Raymond, 2010).

Focusing on role-play simulations of political decision-making, articles were included when simulation content is (g) focusing on *decision-making processes of public or foreign policy* including permanently established political settings. Simulations including historical enactments, election processes, or negotiations not directly leading to public or foreign policy were excluded (e.g., Coffey, Miller, & Feuerstein, 2011; Gorton & Havercroft, 2012; Nance, Suder, & Hall, 2016). Finally, studies needed to (i) report on student *learning outcomes*. Studies including purely anecdotal content, vague opinions or focusing solely on perceptions

about the simulation environment without reporting influences on student learning were omitted (e.g., Brunazzo & Settembri, 2015; Giovanello et al., 2013; Taylor, 1971).

The selection was conducted in several steps. In each step, all studies that clearly did not meet one of the inclusion criteria were excluded. When in doubt about a study, the reference was retained until the next step. Peer-debriefing sessions with all authors involved in this study, discussing the appropriateness with regard to the inclusion criteria, confirmed or rejected inclusion of studies. After conducting all steps, the final selection consisted of thirty-six primary studies.

* Table 2 about here *

3.3 Procedure and analysis

Next to the previously described systematic search, this review uses a narrative approach to analyse publications in the field. Providing the opportunity to reveal in-depth information a narrative review is suitable to highlight a holistic understanding of a phenomenon (Pawson, 2002), in this case the learning environment of role-play simulations of political decision-making. Following close reading, relevant paragraphs were subject to content analysis with NVivo 11. Coding was both deductive and inductive. Deductive coding followed the four previously mentioned groups of simulation features, student characteristics, broader teaching-learning context, and learning outcomes. Within these codes, paragraphs were further labeled with a code in an inductive way, which allowed detailed mapping of the learning environment components of role-play simulations of political decision-making. In a next step, categories were analysed beyond the individual studies in order to integrate the different findings and specifying content of the different learning environment components (RQ 1). Third, various queries were conducted to detect patterns in which specific learning environment components could be connected to certain learning outcomes (RQ 2). In a final step, a cross-case analysis resulted in a typology of studies.

4. Results

4.1 Sample descriptive

The selected studies encompass research conducted between 1974 and 2016. Most studies focus on simulations within US higher education learning contexts (81%). Three studies refer to a mixed student sample of European and US students (8%). Only four studies relate to European higher education learning contexts (11%), which weren't found prior to

2010. While twenty-six studies make use of role-play simulations of political decision-making within undergraduate level courses (72%), six studies report on a simulation with mixed level students (17%), and only one article includes a graduate course simulation (3%). Two articles do not clarify the educational level of participating students (6%). The number of publications that report on learning outcomes of simulations clearly increases over the past decades, as depicted in Table 3.

Sample characteristics show inconsistency in the operationalization of simulations' learning outcomes, an issue that has already been addressed by Baranowski and Weir (2015). All studies refer to empirical data collection using course elements, pre-test, post-test or a combined research design. Course elements include those observations and assignments directly related to the course such as student feedback, reflection papers, and exam grades. During the 1990s the first attempt at data triangulation emerges when combining the use of course elements with a post-measurement. After that time research methods become scattered. Over the years, there is no clear trend towards one specific measurement design. Even during the last decade, over one third of the studies solely report about the analysis of course elements (observations, assignments) and does not triangulate research findings.

* Table 3 about here *

4.2 Which learning environment components and learning outcomes of used role-play simulations of political decision-making can be defined? (RQ1)

A summarized overview of reported learning environment components is presented in Table 4. An exhaustive overview that connects these findings to each article can be found in Appendix A. In this section, we discuss the most important findings for the following learning environment components: simulation features (structure and agency), student characteristics, broader teaching-learning context, and learning outcomes.

* Table 4 about here *

4.2.1 Simulation features: structure

With regard to simulation features, we found three aspects that contribute to simulations' *structure*: simulation design, simulation programme, and the amount of teacher involvement. These aspects are 'stable' features of simulations' structure and cannot be influenced by participants' actions. We found no aspects that referred to simulations' 'flexible' structure.

A detailed overview of variation found in the used *simulation designs* is presented in Table 5. Results show that designs of role-play simulations of political decision-making can vary to a great extent. Such simulations are particularly used in the context of comparative politics, followed by international relations and European studies. Most of the simulations are of the course-embedded type (credit-bearing for all participants). Simulations come in various sizes with between 12 and 300 participants. The majority of the simulations are created for small groups (15-35 students). Simulations also vary in duration from lasting one class time to taking up several days. Not all studies describe previously mentioned simulation design features. For example, eleven studies lack information about size or duration of the simulation.

* Table 5 about here *

With regard to the *simulation programme*, all studies mention formal simulation activities (e.g., committee meetings). However, studies differ in how they elaborate on this part of the simulation. Some simulations describe an informal programme, which is characterised by unmoderated caucuses (i.e., a format where delegates circulate around the conference room and engage in one-on-one, or small group conversations with fellow delegates; Ripley, Carter, & Grove, 2009), out-of-class meetings, or even social activities, such as city tours or dinner parties.

Concerning *teacher involvement*, most studies describe the teacher role as a mediating role, which is not to interfere but to keep the simulation on track. This is achieved by participating in the simulation or by semi-involvement. When participating in the simulation, teachers assume the role of president, conference chair, or conference secretariat. When being semi-involved, instructors are available for answering questions concerning procedures, providing feedback, or initiating reflection. Few simulations are completely student-led. In such cases teachers (when available) only interfere in situations of severe conflicts or deadlocks and are rather considered as absent.

4.2.2 Simulation features: agency

Three aspects that contribute to simulations' *agency* were identified: preparation, role assignment, and the played role. Regarding *simulation preparation*, most studies combine activities in several ways. Meetings are most frequently reported and often involve knowledge sharing. A pair of articles explicitly include the attendance of a 'real-life' local government meeting, which they consider as helpful for students to visualise their role for the simulation. Research activities often include reading assignments, more or less self-directed by students.

Writing assignments are always related to students' roles, such as position or strategy papers, and always combined with other preparation activities. Some articles add presentations to the preparation programme, either individually or collaboratively.

A substantive amount of studies elaborates on the feature of *role assignment*. Four approaches can be distinguished on a continuum from random role assignment to an elaborated selection procedure. In between these extremes, students' preferences are sometimes taken into account, or roles are assigned based on student characteristics such as engagement, academic success, or personality.

With regard to the *played role*, a minority of studies distinguishes between power and non-power roles, also described as more or less leadership roles. Notably, one study argues that assigning roles to practitioners might be beneficial for the simulation process.

4.2.3 Student characteristics

With regard to student characteristics, all studies refer to some type of student demographics, while only few articles report about other student characteristics such as prior experience or motivation.

4.2.4 Broader teaching-learning context

We were able to identify three aspects of the broader teaching-learning context: learning objectives, debriefing, and assessment. Most articles describe specific *simulation objectives*. However, the degree of how explicitly these are addressed varies. All studies focus on increasing students' knowledge and understanding of concepts related to the simulation setting and/or topic. Some studies also mention skills as intended learning outcomes, such as negotiation skills or oral communication skills. Few studies aim at increasing students' confidence or motivation.

Although *debriefing*, which refers to sharing of or reflecting on simulation experiences (Crookall, 2010), is considered an essential element when implementing simulations, not all studies report on the content. Most studies refer to an oral discussion and reflection, others use writing assignments. Ten studies include a combination of both.

Fewer than half of the studies report on how they *assessed student learning*. Those who did mostly used a combined assessment consisting of pre-simulation assignments, simulation performance and/or post-simulation assignments.

4.2.5 Learning outcomes

A range of learning outcomes has been reported, of which a detailed overview can be found in Table 6. Learning outcomes could be grouped together in the commonly accepted groups of cognitive, affective, and regulative learning outcomes (Vermunt & Donche, 2017). In general, four groups of studies can be distinguished. The first and largest group of studies only reports on cognitive learning outcomes: either solely referring to outcomes related to students' knowledge and understanding, or additionally including certain skills that are being fostered. The largest amount of articles report about outcomes that relate to decision-making processes. Most of the reported skills can be defined as generic skills such as writing, oral communication, collaborating, or problem solving. Only few studies report about domain-specific political skills. A second smaller group of studies additionally reports about affective learning outcomes such as motivation, or about outcomes related to students' self-belief such as confidence or political efficacy. The third group consists of one single study that combines cognitive learning outcomes with regulative learning outcomes, reported as student's self-directing behaviour during the simulation, or students expressing intended behavioural change after the simulation when reflecting on their preparation and actual participation in the simulation. The fourth group solely includes two studies that report on all different learning outcomes: cognitive, affective, and regulative.

* Table 6 about here *

4.3 Which relationships between simulations' learning environment components and their learning outcomes can be defined? (RQ 2)

In this section we first elaborate on patterns of relationships between reported learning environment components and their learning outcomes, after which a typology of studies is presented.

Looking for meaningful patterns, we discuss the most notable findings for each learning environment component. With regard to *simulation structure*, we found three aspects worth mentioning. (1) Related to simulation design, results showed that studies that address regulative learning outcomes all include simulations that are spread over time into several classes or several days (e.g. Crossley-Frolick, 2010). (2) Studies that include simulations with informal programmes report substantially more on different learning outcomes (e.g., Mariani & Glenn, 2014). (3) Concerning teacher involvement, only studies in which teacher involvement is absent structurally report on more than only cognitive learning outcomes (e.g., Jones & Bursens, 2015). With regard to *simulations' agency*, we detected three notable

findings. (1) Concerning preparation, studies including one single preparatory activity show less variation in learning outcomes (e.g, Sands & Shelton, 2010) than studies applying a combination of preparatory activities (e.g., Jozwiak, 2013). (2) Notably, studies that report on knowledge and understanding learning outcomes almost always include meetings in their preparation (e.g., Levintova & Mueller, 2015). (3) All studies that report about power and non-power roles solely report about outcomes of knowledge and understanding (e.g., Chernotsky, 1990). Regarding *student characteristics*, studies that report on affective student characteristics, such as motivational aspects, remarkably do not necessarily report on affective learning outcomes (e.g. Kalaf-Hughes & Mills, 2016). Concerning the *broader teaching-learning context*, we found one striking result that relates to reported learning objectives. One third of the studies that report certain simulations' learning outcomes do not mention these as previously set learning objectives (e.g., Jones, 2008), or they did define learning objectives but failed to evaluate them (e.g., Hazleton & Mahurin, 1986).

This leaves us with the question to what extent current research has already taken learning environment characteristics into account when investigating the impact of role-play simulations of political decision-making on student learning outcomes. Table 7 depicts a typology that distinguishes three groups of studies.

* Table 7 about here *

The first and largest group is the *outcome-group*, of which articles investigate learning outcomes without taking any other learning environment components into account. The second group is the *single-group*, of which articles investigate learning outcomes when considering one other learning environment component: either student characteristics (mostly demographics), the simulation in general, or aspects related to the simulation's feature of agency (preparation or played role). The third *multiple-group* includes articles that consider more than one learning environment component when investigating learning outcomes: a mixture of student characteristics, the simulation in general, and/or simulation agency. While studies from the single and multiple group attempt to take learning environment components into account, the review results show few consistencies in which aspects are being considered.

5. Discussion and conclusion

Role-play simulations of political decision-making are the most commonly used active learning method in political science education to teach about complex, dynamic political processes (Ishiyama, 2013; Smith & Boyer, 1996). They are considered valuable learning

environments and highly appreciated by students and lecturers (Van Dyke et al., 2000). To date, the community has been struggling to capture learning outcomes, as seen in research findings being inconclusive regarding simulations' benefits (Biziouras, 2013; Duchatelet et al., 2018; Raymond, 2010). In this review study, we advocate that, alongside recommended methodological rigour (Baranowski & Weir, 2015), research designs should not ignore contextual features, which have been proven to contribute to student learning (Biggs, 1993; Baker & Delacruz, 2016; Dinsmore & Alexander, 2012). To this aim, this review first comprehensively mapped variation in learning environment components of investigated role-play simulations of political decision-making. Second, it probed into the relationship of different learning environment components with their reported learning outcomes, which resulted in a typology of studies.

With regard to learning environment components, the following components could be defined: simulation features (structure and agency), student characteristics, broader teaching-learning context, and learning outcomes. However, studies substantially differ in the extent to which they report about them. Findings identified specific features of simulation structure and agency, such as simulation design (e.g., Osgood, Stangl, & Bernotsky, 2012) or played role (e.g., Cowley & Stuart, 2015). Focusing on learning outcomes, results show that half of the selected studies, which are almost all course-embedded, mention no other learning outcomes than knowledge and skills (e.g., Elias, 2014). Articles thus report about affective and regulative learning outcomes to a far lesser extent (e.g., Jones, 2008). Looking for patterns between learning environment components and their learning outcomes, only few were found. Notably, although we found some patterns that relate features of simulation structure (e.g., duration) to reported learning outcomes (e.g., Crossley-Frolick, 2010), simulation structure has not yet been included when investigating learning outcomes of role-play simulations of political decision-making. Aspects of the broader teaching-learning context also have not yet been considered. Our findings strikingly point out that most studies solely focus on learning outcomes (e.g., Jozwiak, 2013).

Although a clear set of inclusion criteria contributes to the focus of a review study, those criteria create limitations too. First, this review focuses on a specific type of role-play simulations of political decision-making. The comprehensive overview of different learning environment components thus should not be considered as exhaustive. For example, features of other distinguishable but related contexts are not touched upon; e.g. online role-play simulations of political decision-making (Lay & Smarick, 2006). Second, our sample might be characterised by publication bias and, as such, not be representative for simulation

practices. For example, 81% of our sample relates to research in US higher education learning contexts. Third, the scope of this review was limited to focusing on contextual features of role-play simulations of political decision-making. As such, inclusion criteria did not question how concepts, such as motivation or engagement, were defined and measured. However, to avoid ambiguity and inconsistency in results across studies, a coherent research agenda based on conceptual clarity of included variables is important (Dinsmore & Alexander, 2012). Nevertheless, this review study contributes to the field being a stepping stone for future research and practice.

Advancing the field that investigates role-play simulations of political decision-making initiates a focus shift of not only looking for what students learn but also how they learn, and how the simulation exactly contributes to student learning. This gives rise to the challenge of illuminating which simulation configuration contributes to what kind of student learning and for which types of students. Following our typology of studies, we advice future research to move away from the outcome group (e.g., Elias, 2014) and move toward the multiple group (e.g., Rünz, 2015). Moving away from the outcome group could result in at least consistently investigating learning outcomes in relation to certain student characteristics, such as age, gender, prior knowledge, or personality (Richardson et al., 2012), or to even move beyond this and abundantly highlight contextual features. This review study extensively contributes to the field by discussing the features of role-play simulations of political decision-making that relate to simulations' structure and agency. The interplay of both features still remains a black box, which offers another issue to unravel: the tangle of simulation dynamics. For example, how does the amount of guidance that is given to restrict participants' actions influence students' agency and simulation dynamics? With regard to simulation structure, this means that both 'stable' aspects (e.g., simulation design) and aspects that can be influenced by participants' actions (e.g., minority block) are of interest for future research. This also relates to the issue of verisimilitude (i.e., to what extent do participants perceive these simulations as authentic; and how does this relate to the simulation process and students' learning outcomes?). Further, future research could consider the variety of learning strategies students apply when learning in a simulation-based learning environment. For example, by focusing on how students regulate their actions during the simulation (Vermunt & Donche, 2017). As already suggested by Baranowski (2006), future research could also draw attention to the transfer of learning in order to elucidate the long-term effects of role-play simulations of political decision-making.

Each learning environment component interacts with other components, which results in a change in one component affecting change in another component (Biggs, 1993). This issue complicates investigating the 'objective' contribution of the simulation to student learning. For example, most studies that report about knowledge related outcomes have a risk of biased results when meetings, which involve knowledge sharing, are part of their preparatory activities (e.g., Baranowski, 2006). Future research could report in a more systematic way about which aspects characterise the simulation-based environment and which aspects will be the focus of and included as variables in the research. This would lead to better comparable research findings. Considering the complex interplay of different learning environment components and the variety of learning outcomes reported, we believe research designs should not be limited to the by Baranoswki and Weir (2015) suggested pre- and post-measurement designs, and quasi-experimental research designs when investigating simulations' effectiveness. For example, learning outcomes such as analytical-critical thinking skills are not that easily measured using quantitative pre- and post-measurement designs. Also, unravelling simulation dynamics will need more in-depth research of a qualitative nature, which allows for capturing processes and focusing on how students learn.

Finally, this review contributes substantially to simulation practice in that it offers a comprehensive overview of what is relevant to consider when designing or implementing role-play simulations of political decision-making. Results point to inconsistency in how researchers report about the simulation-based learning environment and, therefore, call for more systematically reporting when sharing simulation practices. Considering the variation in reported learning outcomes that not always relate to reported learning objectives (e.g., Jones, 2008), practice could benefit from taking constructive alignment more often into account (Biggs, 1996). This has already been addressed by some scholars within the field of role-play simulations of political decision-making, who emphasize the importance of defining learning goals in advance and to align these with assessment methods, which should reflect the learning outcomes (Asal & Blake, 2006; Raymond & Usherwood, 2013; Smith & Boyer, 1996).

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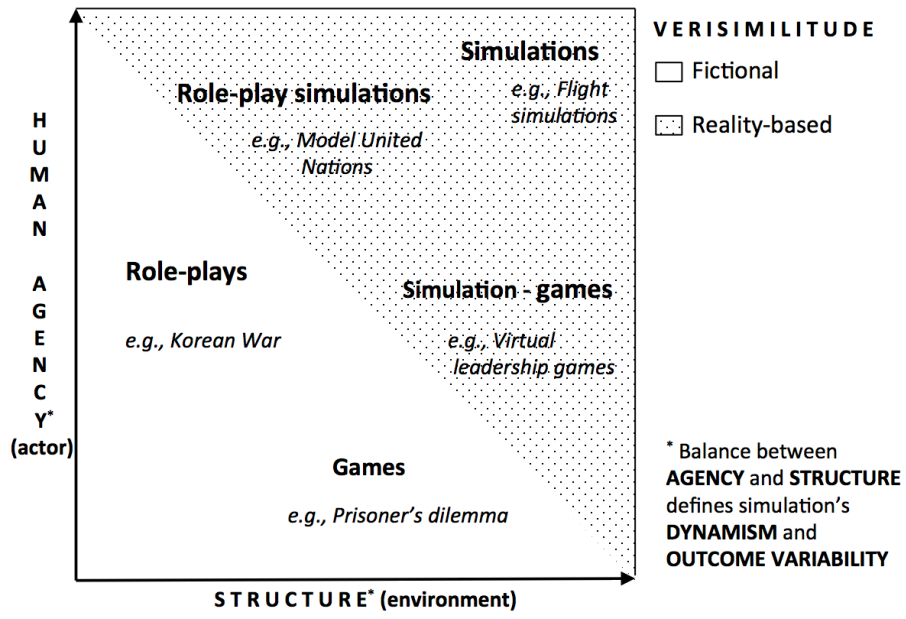
Fig. 1. Distinction between Simulations, Games, and Role-plays

Table 1

Overview of literature search

Search terms	SSCI	ERIC (Ebsco)
Simulation & international relations	121	70
Simulation & politics	258	88
Simulation & political science	140	126
Simulation & European studies	466	3
Role-playing & international relations	91	24
Role-playing & politics	365	38
Role-playing & political science	60	50
Role-playing & European studies	156	1
Educational games & international relations	6	15
Educational games & politics	17	28
Educational games & political science	5	17
Educational games & European studies	10	1
Total	**1695**	**461**
Overall total		*2156*

Table 2

Selection procedure using the PRISMA 2009 Flow Diagram (Moher et al., 2009)

Identification	Records identified through database searching:
	1. SSCI (n = 1695)
	2. ERIC (n = 461)
	Records after duplicates removed: n = 1722
Screening	Records screened on title and abstract: n = 1722
	Records excluded: n = 1529
Eligibility	Full text articles assessed for eligibility: n = 193
	1. General criteria
	2. Simulation features
	3. Simulation content
	Records excluded with reasons: n = 157
Inclusion	Studies included in content analysis: N = 36

Table 3

Overview of articles over time (N_{total} =36)

	Course-elements (C)	Post	Pre + post	C + post	C + pre + post
1970 – 1979		Bertsch & Feste (1974)			
1980 – 1989			Foster et al. (1980) Hazleton & Mahurin (1986)[**°]		
1990 – 1999				Chernotsky (1990) Lowry (1999)[□]	
2000 – 2009	Frederking (2005) Rackaway & Goertzen (2008)[°] Wallin (2005)[°°]	Ripley et al. (2009)[□] Zaino & Mulligan (2009)[°]	Bernstein (2008) Jones (2008)[**°]	Andanova & Mendoza-Castro (2008) Ciliotta-Rubery & Levy (2000) Galatas (2006)	Baranowski (2006)
2010 – 2016	Crossley-Frolick (2010) Levintova & Mueller (2015) Mathews & LaTronica-Herb (2013) Obendorf & Randerson (2013)[*] Rinfret (2012) Sands & Shelton (2010) Taylor (2011)	Baranowski & Weir (2010)	Biziouras (2013) Cowley & Stuart (2015)[*] Jones & Bursens (2015)[**°] Mariani & Glenn (2014) Rünz (2015)[*°]	DiCicco (2014) Kalaf-Hughes & Mills (2016) Osgood et al. (2012) Rinfret & Pautz (2015)	Elias (2014)[*] Jozwiak (2013) Levintova et al. (2011)

Course-elements - those observations and assignments directly related to the course (C), Post – post-test, Pre – pre-test; [*] European sample; [**] Mixed sample; [°] Mixed student level; [°°] Graduate student level; [□] No student level reported

Table 4

Overview of learning environment components (N_{total} = 36)

Simulation features		Student characteristics	Broader teaching-learning context	Learning outcomes
Structure	Agency			
• Simulation design (see Table 5)	• Preparation Meeting (n = 29)	• Demographics (n = 36)	• Objectives Knowledge and	• Cognitive: Knowledge (n = 36)
• Programme	Research (n = 27)	• Prior experience and	understanding (n = 33)	Skills (n = 18)
Formal	Writing (n = 23)	knowledge	Skills (n = 16)	Citizenship (n = 3)
(n = 36)	Presenting (n = 5)	(n = 4)	Confidence (n = 4)	• Affective
Informal	• Role Assignment	• Motivational aspects	Motivation (n = 7)	Motivation (n = 4)
(n = 17)	Random (n = 5)	(n = 5)	• Debriefing	Interest (n = 6)
• Teacher involvement	Preferences (n = 7)	• Confidence	Oral (n = 21)	Engagement (n = 9)
Participation	Student characteristics	(n = 6)	Written (n = 16)	Self-belief (n = 7)
(n = 9)	(n = 8)		• Assessment	• Regulative
Semi-involvement	Procedure (n = 2)		Pre-simulation assignments	Self-directing behaviour
(n = 10)	• Played role		(n = 11)	(n = 2)
Absence	More or less power		Performance (n = 14)	Intentional behavioural
(n = 2)	(n = 3)		Post-simulation	changes (n = 1)
	Practitioners (n = 1)		assignments (n = 9)	

Table 5

Detailed overview of variation in simulation design ($N_{total} = 36$)

Context	Setting	Type	Size	Duration
International relations (n = 8)	European Union (n = 6)	Course-embedded (n = 29)	< 15 (n = 2)	1 class (n = 5)
EU studies (n = 7)	United Nations (n = 7)	Extracurricular	15 – 35 (n = 17)	Several classes (n = 18)
Comparative politics (n = 20)	US Congress (n = 12)	(n = 3)	35 – 70 (n = 3)	1 day (n = 4)
Mixed (n = 1)	National Security Council (n = 3)	Mixed (n = 4)	70 – 120 (n = 1)	Several days (n = 5)
	Urban politics (n = 4)		> 120 (n = 6)	
	Other* (n = 4)			

* Other = WTO (GATT negotiations), British parliamentary (chief whips), Eastern Europe (the Warsaw treaty organisation), Mixed simulation

Table 6

Detailed overview of reported learning outcomes (N_{total} = 36)

Cognitive learning outcomes – Knowledge & understanding			
Theoretical concepts	Decision-making process	Policy field	Citizenship
Andanova & Mendoza-Castro (2008)	Andanova & Mendoza-Castro (2008)	Bertsch & Feste (1974)	Bernstein (2008)
Crossley-Frolick (2010)	Baranowski & Weir (2010)	DiCicco (2014)	Levintova et al. (2011)
Foster et al. (1980)	Baranowski (2006)	Elias (2014)	Rünz (2015)
Frederking (2005)	Bertsch & Feste (1974)	Foster et al. (1980)	
Kalaf-Hughes & Mills (2016)	Biziouras (2013)	Levintova & Mueller (2015)	
Levintova & Mueller (2015)	Chernotsky (1990)	Levintova et al. (2011)	
Lowry (1999)	Ciliotta-Rubery & Levy (2000)		
Osgood et al. (2012)	Cowley & Stuart (2015)		
Taylor (2011)	Crossley-Frolick (2010)		
	DiCicco (2014)		
	Elias (2014)		
	Foster et al. (1980)		
	Galatas (2006)		
	Hazleton & Mahurin (1986)		
	Jones (2008)		
	Jones & Bursens (2015)		
	Jozwiak (2013)		
	Kalaf-Hughes & Mills (2016)		
	Mariani & Glenn (2014)		
	Mathews & Latronica-Herb (2013)		
	Obendorf & Randerson (2013)		
	Osgood et al. (2012)		
	Rackaway & Goertzen (2008)		
	Rinfret (2012)		
	Rinfret & Pautz (2015)		
	Ripley et al. (2009)		
	Sands & Shelton (2010)		
	Taylor (2011)		
	Wallin (2005)		
	Zaino & Mulligan (2015)		

Cognitive learning outcomes – Skills

Writing	Research	Collaborating	Oral communication	Negotiating	Analytical-critical thinking	Problem solving	Political skills
Frederking (2005)	DiCicco (2014) Elias (2014)	Bernstein (2008) DiCicco (2014) Elias (2014) Jones & Bursens (2015) Jozwiak (2013) Mariani & Glenn (2014) Wallin (2005)	Crossley-Frolick (2010) DiCicco (2014) Frederking (2005) Jozwiak (2013) Ripley et al. (2009)	Andanova & Mendoza-Castro (2008) Ciliotta-Rubery & Levy (2000) DiCicco (2014) Jones & Bursens (2015) Jozwiak (2013) Levintova et al. (2011) Wallin (2005)	Kalaf-Hughes & Mills (2016) Rackaway & Goertzen (2008)	Bertsch & Feste (1974)	Bernstein (2008) Mariani & Glenn (2014) Obendorf & Randerson (2013)

Affective learning outcomes

Motivation	Interest	Engagement	Confidence	Political efficacy
Bertsch & Feste (1974) Lowry (1999) Taylor (2011) Wallin (2005)	Andanova & Mendoza-Castro (2008) Bertsch & Feste (1974) Frederking (2005) Jozwiak (2013) Mariani & Glenn (2014) Osgood et al. (2012)	Andanova & Mendoza-Castro (2008) Crossley-Frolick (2010) DiCicco (2014) Jozwiak (2013) Levintova et al. (2011) Mariani & Glenn (2014) Mathews & Latronica-Herb (2013) Obendorf & Randerson (2013) Wallin (2005)	DiCicco (2014) Jones (2008) Jones & Bursens (2015)	Bernstein (2008) Levintova et al. (2011) Mariani & Glenn (2014) Rünz (2015)

Regulative learning outcomes

Self-directing behaviour during simulation	Intended behavioural changes after simulation
Crossley-Frolick (2010) Galatas (2006)	Jones (2008)

Table 7

Typology of studies

OUTCOME-GROUP: Learning outcomes as main and only issue

Andanova & Mendoza-Castro (2008)	Mathews & LaTronica-Herb (2013)
Bertsch & Feste (1974)	Obendorf & Randerson (2013)
Ciliotta-Rubery & Levy (2000)	Rackaway & Goertzen (2008)
Cowley & Stuart (2015)	Rinfret (2012)
Crossley-Frolick (2010)	Rinfret & Pautz (2015)
DiCicco (2014)	Ripley et al. (2009)
Elias (2014)	Sands & Shelton (2010)
Galatas (2006)	Taylor (2011)
Jozwiak (2013)	Wallin (2005)
Lowry (1999)	Zaino & Mulligan (2009)

SINGLE-GROUP: Considering one component in relation to learning outcomes

Student characteristics

Bernstein (2008)	Demographics	Race, gender
Foster et al. (1980)	Demographics	Major
Jones (2008)	Demographics	EU/US, student level
Jones & Bursens (2015)	Demographics	Student level
Levintova et al. (2011)	Demographics	Gender
Mariani & Glenn (2014)	Prior experience	Political internship or job experience
Osgood et al. (2012)	Demographics	Major

Simulation in general

Frederking (2005)	YES/NO simulation group	YES/NO simulation group

Simulation features: agency

Biziouras (2013)	Preparation	Reading content
Hazleton & Mahurin (1986)	Preparation	Preparation time
Baranowski & Weir (2010)	Played role	Low vs. high power, Minority vs. majority party
Chernotsky (1990)	Played role	Primary vs. secondary actors

MULTIPLE-GROUP: Considering multiple components in relation to learning outcomes

Student characteristics + simulation in general

Rünz (2015)	Demographics	Gender, age, nationality, major
	Prior experience	Mobility, prior knowledge
	Motivational aspects	Interest in EU
	Beliefs	Political efficacy, European identity, national pride
	YES/NO simulation group	YES/NO simulation group

Student characteristics + agency

Levintova & Mueller (2015)	Demographics	Gender
	Preparation	YES/NO lecture
Kalaf-Hughes & Mills (2016)	Prior experience	Prior knowledge (GPA)
	Motivational aspects	Political interest
	Played role	Legislative vs. executive role

Student characteristics + agency + simulation in general

Baranowski (2006)	Prior experience	Previous exposure to material on the legislative process, prior knowledge (exam score)
	Preparation	Lecture, reading
	Motivational aspects	Interest in politics
	YES/NO simulation group	YES/NO simulation group

Appendix A

Detailed overview of reported learning environment components

Study	Simulation structure							Simulation agency						Student Characteristics				Broader teaching-learning context									Learning outcomes			
	Simulation design					Simulation Programme	Teacher Involvement	Preparation				Role Assignment	Played Role					Learning objectives				Debriefing		Assessment			CLO		ALO	RLO
	C	Se	T	Si	D			Me	Re	W	Pr			D	PE	M	B	K	S	Co	Mo	WA	O	Pre	P	Post	K	S		
Andanova & Mendoza-Castro (2008)	IR	UN	C	ES	SC	X	X	X	X	X	X			X				X	X		X	X			X		X	X	X	
Baranowski (2006)	CP	USC	C	S	C		X	X	X			X		X	X	X							X				X			
Baranowski & Weir (2010)	CP	USC	C		C		X	X	X			X	X	X				X					X				X			
Bernstein (2008)	CP	USC	C	S	SD			X	X	X				X			X	X	X	X	X	X						X	X	X	
Bertsch & Feste (1974)	EU	O	C		SD		X		X	X				X				X			X					X	X	X	X	
Biziouras (2013)	CP	NSC	C	S	C			X	X	X				X				X			X	X					X			
Chernotsky (1990)	CP	NSC	C	S	SC		X	X	X			X	X	X				X				X					X			
Ciliotta-Rubery & Levy (2000)	CP	USC	C		SC				X					X				X	X		X	X					X	X		
Cowley & Stuart (2015)	CP	O	C	S	C		X	X				X	X**	X				X				X					X			
Crossley-Frolick (2010)	IR	UN	C	S	SC	X	X	X	X	X		X		X				X	X		X	X	X	X		X	X	X	X	X
DiCicco (2014)	CP	NSC	C		SC	X	X	X	X	X	X	X		X				X	X	X				X	X	X	X	X	X	
Elias (2014)	EU	EU	C	M	SC	X	X	X	X	X				X				X	X			X		X	X	X	X	X		

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Column groups: **Simulation structure** = Simulation design (C, Se, T, Si, D), Simulation Programme, Teacher Involvement. **Simulation agency** = Preparation (Me, Re, W, Pr), Role Assignment, Played Role. **Student Characteristics** = D, PE, M, B. **Broader teaching-learning context** = Learning objectives (K, S, Co, Mo), Debriefing (WA, O), Assessment (Pre, P, Post). **Learning outcomes** = CLO (K, S), ALO, RLO.

Study	C	Se	T	Si	D	Simulation Programme	Teacher Involvement	Me	Re	W	Pr	Role Assignment	Played Role	D	PE	M	B	K	S	Co	Mo	WA	O	Pre	P	Post	CLO K	CLO S	ALO	RLO
Foster et al. (1980)	CP	UP	C											X				X									X			
Frederking (2005)	CP	USC	C		SC			X	X	X		X		X				X	X			X	X				X	X	X	
Galatas (2006)	EU	EU	C	ES	SC	X	X	X	X	X		X		X				X	X								X			X
Hazleton & Mahurin (1986)	IR	UN	M	EL				X	X	X	X	X		X				X	X	X				X	X	X	X			
Jones (2008)	EU	EU	M	EL	SD		X							X				X	X	X	X						X	X	X	X
Jones & Bursens (2015)	EU	EU	M	EL	SD	X	X	X	X	X				X		X						X					X	X	X	
Jozwiak (2013)	EU	EU	C	S	SC	X	X	X	X	X	X			X										X			X	X	X	
Kalaf-Hughes & Mills (2016)	CP	USC	C	S	SC	X		X	X	X		X	X	X	X	X		X				X					X	X		
Levintova et al. (2011)	IR	UN	C	EL			X	X	X					X				X	X	X		X	X				X	X	X	
Levintova & Mueller (2015)	IR	UN	C	EL				X	X					X				X				X	X				X			
Lowry (1999)	IR	O	C	S	D		X	X	X	X		X		X				X						X	X	X	X		X	
Mariani & Glenn (2014)	CP	USC	E	M	SC	X	X		X	X		X		X	X	X		X	X	X				X	X	X	X	X	X	
Mathews & LaTronica-Herb (2013)	CP	USC	C	S	SC	X		X		X				X				X	X		X	X					X	X		
Obendorf & Randerson (2013)	IR	UN	M		D	X	X	X	X	X	X	X		X				X	X			X		X	X	X	X	X	X	

Study	C	Se	T	Si	D	Simulation Programme	Teacher Involvement	Me	Re	W	Pr	Role Assignment	Played Role	D	PE	M	B	K	S	Co	Mo	WA	O	Pre	P	Post	CLO K	CLO S	ALO	RLO
Osgood et al. (2012)	CP	UP	C	S	SC		X	X*	X	X		X		X				X			X	X	X				X		X	
Rackaway & Goertzen (2008)	CP	USC	C	S	C			X	X			X		X				X	X			X	X	X	X	X	X	X		
Rinfret (2012)	CP	UP	C	S	SC			X*		X		X		X				X							X	X	X			
Rinfret & Pautz (2015)	CP	USC	C	S	SC	X		X	X	X		X		X				X						X	X	X	X			
Ripley et al. (2009)	IR	UN	E	S	D	X						X		X				X	X								X	X		
Rünz (2015)	EU	EU	E	EL	SD	X								X	X	X	X	X									X		X	
Sands & Shelton (2010)	CP	USC	C	S	SC		X	X				X		X				X				X	X		X	X	X			
Taylor (2011)	CP	UP	C	S	SC		X	X				X		X				X	X					X	X	X	X	X		X
Wallin (2005)	CP	USC	C	M	SC	X	X	X	X	X		X		X				X								X	X	X		X
Zaino & Mulligan (2009)	M	O	C	L	D	X	X	X	X	X		X		X				X						X	X	X	X			

Simulation design: C – Content (IR – International relations, EU – European studies, CP – Comparative Politics, M - Mixed), Se – Setting (UN – United Nations, EU – European Union, USC – US Congress, NSC – National Security Council, UP – Urban Politics, O – Other), T – Type (C – Course-embedded, E – Extra-curricular, M – Mixed), Si – Size (XS – < 15, S – 15-35, M – 35-70, L – 70-120, XL – >120), D – Duration (C – 1 class, SC – Several classes, D – 1 day, SD – Several days); Preparation: Me – Meetings, Re – Research, W – Writing, Pr – Presenting; Student factors: D – Demographics, PE – Prior experience, M – Motivational aspects, B – Beliefs; Objectives: K – Knowledge & Understanding, S – Skills, Co – Confidence, Mo – Motivation; Debriefing: WA – Written assignment, O – Oral debriefing; Assessment: Pre – Pre-simulation assignments, P – Simulation Performance, Post – Post-simulation assignments; Learning outcomes: CLO – Cognitive learning outcomes: K – Knowledge & Understanding, S – Skills; ALO – Affective learning outcomes; RLO – Regulative learning outcomes; *These meetings include one attendance at a local government meeting; ** Roles are also assigned to practitioners