Beyond descriptions and good practices : empirical effects on students' learning outcomes of active learning environments in political science curricula

BEYOND DESCRIPTIONS AND GOOD PRACTICES: EMPIRICAL EFFECTS ON STUDENTS' LEARNING OUTCOMES OF ACTIVE LEARNING ENVIRONMENTS IN POLITICAL SCIENCE CURRICULA.

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In the past decades, academic teaching has evolved from teacher-centred towards student-centred teaching. This trend is accompanied by the creation of active learning environments (Krain et al., 2015; Lantis et al., 2010; Ishiyama et al., 2016). While all learning could be considered as being 'active' (e.g. taking notes, reading), we define active learning environments as those environments that explicitly build on students' engagement, and encourage students to take up a participatory role in their learning (Snyder, 2003). As such, active learning refers to the instructional methods that engage students in their learning process (Bonwell and Eison, 1991) and includes activities such as discussions and question techniques to cognitively activate students (e.g., Gronostay, 2016), case-based learning (e.g., Baeten et al., 2013), problem-based learning (e.g., Gijbels et al., 2014) and game-based learning (e.g., Ifenthaler et al., 2012). Within political science teaching, this shift resulted in the implementation of various active learning methods, including debates, role-plays, simulations (e.g. Asal and Blake, 2006; Elias 2014), (community) service learning (Freeland 2009), technology based learning such as online forums, social media, wikis and audience response systems (Parmentier, 2013), media-based learning using novels, films, music and podcasts (Leckrone, 2013) and problem-based learning (Krain, 2010).

Considering active learning environments vary extensively in their design, the political science teaching research field is still endeavouring to uncover how exactly different types of active learning contribute to student learning outcomes. So far, active learning in political science teaching is argued to have a positive effect on study results (Raymond and Usherwood, 2013), on learning regarding the self (Druckman and Ebner, 2013), on skills such as critical thinking, negotiating, presenting and public speaking (Schnurr et al., 2014), on

affective learning in terms of empathy and appreciation for the complexity of the real world (Druckman and Ebner, 2013), on motivation (Raymond and Usherwood, 2013), and on different types of interest (Schnurr et al*.,* 2014). However, in contrast with the rhetoric and the many claims in the current literature, substantial empirical evidence regarding the effects of active learning environments on student learning outcomes is still limited (Baranowski and Weir, 2015). Most of these claims have not been systematically tested. For instance, proof of simulations' effectiveness in any of the instances described above is rather anecdotal, often methodologically poor, and sometimes even contradictory (Chin et al., 2009; Hofstede et al., 2010). Most studies examine only cross-sectional student feedback, e.g. analysing course elements or relations between participation in simulations and study results (Duchatelet et al., 2019; Raymond, 2010; Shellman and Turan, 2006). In addition and more generally, the literature has quite a large US bias (Duchatelet et al., 2019; Ishiyama, 2013). Only more recently scholars have moved beyond descriptive studies (Duchatelet et al., 2018; Levin-Banchik, 2018; Oberle et al., 2018; Rünz, 2015). Overall, however, insights regarding the effects of active learning environments on student learning remain limited (e.g., Duchatelet et al., 2019).

This symposium aims to help advance our knowledge about active learning by taking a first step toward a more systematic research agenda on the effects of active learning in political science teaching. It contributes to the increasing attention of the political science community for teaching the discipline. Global and regional professional organizations (such as IPSA and ECPR) and more thematic scholarly communities (such UACES and EUSA for EU studies) have reserved slots for sections and panels in their conferences and have created interest sections or standing groups on teaching and learning. In addition, journals such as European Political Science, International Studies Perspectives and PS Political Science and Politics now include symposia, round-tables and research articles on teaching innovations.

There is even a specifically dedicated journal (Journal of Political Science Education) on the subject. Finally, blogs and websites such as Active Learning in Political Science have been created to share good practices and promote innovative (active) teaching methods. The specific contribution of this symposium lies in identifying the constitutive elements of the research agenda, i.e. the active learning context, the methods and data of future studies. In the following sections, we first elaborate on a conceptual model that can be used to investigate the active learning context. Further, we discuss method and data challenges that need to be tackled to advance the research agenda. Finally, we introduce the contributions in this symposium. While using a variety of learning environments and methods, they all address the same research question: to what extent and how do active learning environments affect political science and civics students' learning outcomes?

ACTIVE LEARNING CONTEXT

To bring systematic empirical evidence of the effect of active learning tools to the discipline of political science, we suggest drawing from the educational science literature. Research investigating higher education learning outcomes usually distinguishes four components: (1) learning outcomes, (2) student characteristics, (3) the teaching context, and (4) student learning by engaging in activities (Biggs, 1993; Donche et al., 2018; Duchatelet et al., 2019). Figure 1 shows an application of these components and hypothesized directional links in an active learning context.

Insert Figure 1 here.

Figure 1. Investigating active learning contexts in political science teaching (based on Donche et al., 2018).

This characterization suggests that there is a learning context in which active learning tools are applied, aiming for specific (1) learning outcomes with the following components:

(2) student characteristics, (3) the teaching context, and (4) the learning process during which students engage in active learning activities. When promoting the constructive alignment, educational practice often refers to Bloom's taxonomy (1956), which distinguishes the cognitive (knowledge-based), affective (emotion-based) and psychomotor (action-based) domain. When investigating effects of the learning environment on student learning, educational research usually distinguishes between three general learning activities and the resulting *learning outcomes (1)*: cognitive, affective, and regulative (Vermunt and Vermetten, 2004). Cognitive learning outcomes are results of those thinking activities that directly lead to learning in terms of knowledge, understanding, skills and so on (Vermunt and Vermetten, 2004). When investigating effects of active learning contexts on student learning within political science teaching, such learning outcomes are mostly specified as better understanding of theoretical concepts and/or theories (e.g. Elias, 2014), increased empirical knowledge (e.g. Leckrone, 2013) and developed skills such as public speaking (e.g. Schnurr et al., 2014). Affective learning outcomes are the results of feelings that arise during learning and that create an emotional state that may positively, neutrally or negatively affect the learning process (Vermunt and Vermetten, 2004). Research on the use of active learning within political science defines these outcomes as interest (e.g. Schnurr et al., 2014), motivation (e.g. Raymond and Usherwood, 2013), or attitudes towards, for example, the European Union (e.g. Brunazzo and Settembri, 2014). Motivational outcomes within citizenship education include political self-efficacy and political interest (e.g. Geboers et al., 2013; Oberle et al., 2018). Both cognitive and affective activities are directed by regulating activities that indirectly lead to learning results, such as the ability to monitor and, when needed, to adjust the learning process (Vermunt and Vermetten, 2004). This process of learning has thus far not directly been studied in the field of political science teaching and learning. However, studies on simulations for instance often report on the importance of

reflective assignments and debriefing sessions (e.g. Elias, 2014), which can be seen as activities that stimulate students to use their reflective skills and therefore foster regulative learning outcomes (Vermunt and Vermetten, 2004). Citizenship education research also includes previous outcomes and additionally refers to a taxonomy including competences that relate to motivational (e.g. political interest), volitional (e.g. willingness to participate) or conative predispositions (e.g. political participation) (Weinert, 2001).

Student characteristics (2) refer to student backgrounds (e.g. socio-demographic characteristics, motivation, or prior education). For example, students' education level can range from elementary or secondary school level over professional and academic bachelor and master to executive master, vocational training programs or even doctoral programs. Active learning research within political science has already included features such as gender, prior experience, pre-knowledge or motivational aspects (Duchatelet et al., 2018; Kalaf-Hughes and Mills, 2016; Oberle et al., 2018; Rünz, 2015).

Next to student characteristics, features of the *teaching context (3)* are also possible determinants of learning outcomes (Biggs, 1993). These features refer to the broader teaching context in which the active learning tool has been implemented and also include teachers' competencies (Kunter et al., 2013). Following the principle of constructive alignment, these should include set learning objectives and assessment procedures (Biggs, 1996; Usherwood, 2013). We see at least two additional distinctive elements. The first involves discipline-related features, i.e. whether the active learning context is monodisciplinary or multidisciplinary and which disciplines are part of the active learning application. Second, studies may examine active learning in formal programs or in extra-curricular settings organized by students or organizations, such as Model UN simulations.

Engagement and learning in active learning activities (4) refers to the process during which students engage in an active learning activity and how they shape their learning process

(Donche et al., 2018). We can distinguish active learning tools based on several features: time investment needed to prepare them, presence or absence of technological features, or aimed goal complexity (e.g. knowledge and understanding versus more complex skills). To date, no comprehensive overview of various active learning techniques has been provided. We consider any tool that has been intentionally implemented to actively engage students as an active learning tool, which can range from teacher's discussion techniques to specific activities (e.g. games) and even more elaborated active learning methods (e.g. problem-based learning), as described above.

Overall, every discussed component of the learning environment and its interrelatedness (Figure 1) offers a roadmap to study effects of active learning contexts in political science teaching on student learning outcomes. Student characteristics, the teaching context, and how students engage during the active learning activity are considered explanatory factors for learning outcomes. Focusing on learning outcomes as dependent variables, studies may vary to which relationships they aim to investigate.

METHODS AND DATA

One of the most pressing challenges of this emerging research agenda is the methodological underpinning and related data-collection. A lot of the publications so far have made use of data gathered at the occasion of real active learning environments. The authors of these studies often teach political science courses and take the opportunity to survey their students. Most studies, however, only use students` self-reporting after participation, course elements (i.e. observations and assignments directly related to the course) or a pre/post-test design without taking student characteristics or characteristics of the broader teaching context into account (Duchatelet et al., 2019). In order to make more robust testing of the effects possible, future endeavours should expand the current research approaches to making use of more systematic data-collection and advanced methods of analysis. These can be quantitative (e.g.

longitudinal survey study), qualitative (e.g. case study, interviews) or mixed method (Cohen, 2011). Inherently, more attention should be drawn to the validity and reliability of used measures. Furthermore, studies should integrate control groups that experience a different design of intervention and analyse long-term effects including at least a third point of measurement (e.g, Baranowski & Weir, 2015). In general, attention for the relationship between different components is needed to move beyond a common understanding of what works in a specific learning environment towards a more comprehensive understanding of why and how a specific learning environment works, for whom and in which contexts (Donche et al., 2018).

CONTRIBUTIONS

The four contributions of this symposium are examples of studies that share a rigorous design that allows for robust conclusions regarding different types of learning outcomes. Each study contributes to answering a part of our research question: To what extent and how do active learning environments affect political science and civics students' learning outcomes?

With regard to learning outcomes, Julia Leib and Samantha Ruppel (Goethe Universität Frankfurt am Main) question the learning effects of different types of UN-simulations on students' factual and procedural knowledge and skills. The contribution of Afke Groen, Patrick Bijsmans and Johan Adriaensen (Maastricht University) evaluates the potential of portfolios in their home university of Problem Based Learning to monitor the effect of active learning on students' generic skills acquisition. Monika Oberle, Johanna Leunig and Sven Ivens (Universität Göttingen) focus on civic education in secondary schools and report on how simulation games of the European Parliament affect pupils' cognitive, motivational and attitudinal learning outcomes. Finally, Karen Heard-Lauréote, Vladimir Bortun and Milan Kreuschitz-Markovic (University of Portsmouth) take the perspective of outreach by the university to secondary schools and ask whether participating in EU simulation games affects

the interest of pupils to aspire higher education in EU Studies. Overall, the four papers in this symposium thus cover all three dimensions of learning outcomes: Heard-Lauréote et al. look at affective outcomes (mainly interest in pursuing university studies and EU politics), Groen et al. look at measurement of regulative outcomes (generic skills), while two other papers focus on cognitive outcomes (Leib and Ruppel look at knowledge and skills, Oberle et al. at objective and subjective knowledge linked to perceived responsiveness of the political system).

Concerning student characteristics, two contributions focus on university level students (Leib and Ruppel on political science students, and Groen et al. on bachelors in European Studies), while two other look at secondary school pupils in Germany (Oberle et al.) and the United Kingdom (Heard-Lauréote et al.).

With regard to active learning environment, simulations have become a popular active learning tool in political science, which is reflected in three of the papers. Leib and Ruppel examine the effect of obligatory and voluntary UN simulations, Oberle et al. look at short EU simulation games in civics classes, while Heard-Lauréote et al. use EU simulations as a tool for higher education institutions to reach out to secondary school pupils. Groen et al. look at the effects of the Maastricht University model of Problem Based Learning (PBL).

Following the theoretical framework visualized in Figure 1, all papers combine different components. All papers take into account a set of student characteristics and dispositions (such as prior knowledge, attitudes and preferences) and features of the active learning tools (such as level of complexity) to explain patterns and variation in student learning outcomes (cognitive, affective, motivational, and regulative). Also, in terms of data and methods the contributors take up the challenge for more methodological rigorous research. They apply a range of different techniques that exceed the commonly used methods like analysis of course elements or a reduction to teachers` and students` course evaluation: pre and post surveys

(Leib and Ruppel, Oberle et al., Heard-Laureote), a quasi-experimental design (Groen et al.) and qualitative interviews (Oberle et al.). As such, this symposium illustrates how to move beyond descriptions and good practices, and takes a first step toward a more rigorous research approach for investigating political science teaching and learning.

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