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Involving Stakeholders in Shaping Educational Legislation and Policy in Ukraine

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Abstract: The purpose of this research was to explore how effective the bottom-up approach to producing and shaping educational legislation is in Ukraine and to identify what observed changes take place in students if the bottom-up approach is simulated in the classroom. Qualitative instruments and observational data were used to yield the data. Those were a survey questionnaire, semi-structured interview questionnaire, and focus group discussion observation checklists and moderators' and facilitators' reports. The data were processed using IBM SPSS Statistics 25.0.0.1. Software. The results of the study suggest the bottom-up approach to shaping educational legislation can be considered an option or an alternative to the conventional law-making procedure, at least in the sphere of education, in Ukraine. The use of mock policymaking experience has proven to be an efficient teaching tool. The application of the simulation of the bottom-up approach in the courses entitled "Educational policy" and "National Education Policy" was found to have the potential to encourage students to participate in the processes of shaping education policy, legislation, and regulation. The approach accelerated the desire of the students to participate in the processes of shaping education policy, legislation, and regulation. It also brought a change to the students' vision of the school structure, the content of education, and the way the teacher is motivated. The intervention also brought a positive change to the students' behaviour as citizens and their motivation as teachers-to-be.

Keywords: *Education, educational reform, shaping educational legislation, bottom-up approach.*

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Introduction

The current educational reforms in Ukraine are pursuing the goals of upgrading the quality and level of education in every area of the country (Andruschenko & Vernyudub, 2016) and getting rid of "managerial rust" (Bobrytska, 2017) like administrative and command management styles, bureaucracy and low efficiency of teachers' classroom management that were dominant in the former educational system at all levels (Bobrytska, 2019; Luzik & Khomenko-Semenova, 2017). However, there have still been inadequacies in regulation and legislation to address that are causing criticisms amongst the education stakeholders (Organisation for Economic Co-operation and Development [OECD], 2017). The strong international trend towards commercialisation of education services may also impact the practices of education modernisation in Ukraine (Bayram, 2018). To deal with the loopholes and respond to those condemnations, the working group (the Board of experts) was formed in 2016 to draft the updated Law of Ukraine on Education. It should be mentioned that the co-author of this research was a member of the above team throughout 2016 until the Law was adopted by Verkhovna Rada [Supreme Council].

The challenge for the working group was to draft the Law document that could implement best international and local educational practices and addressed those criticisms. Though the conventional law-making model is top-down, it was obvious that it did not correspond to the concept of the new law. That situation created the gap for this research as served as its feasibility.

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The bottom-up approach to shaping legislation and educational reform in Ukraine

The bottom-up approach shaping (educational) legislation involves social and institutional contexts. It relies on the 'ascending' paradigm of the legitimacy of public power and is seen as the fundamental feature of the democratic nation-state (Dellavalle, 2017). The conception of bottom-up approach-based public power is revealed in the political philosophy of Thomas Hobbes who suggested that a just order of social life should be based on freedom and equality in the rights of individuals who are the fundamental source of all legitimate authority (Martinich, 2004). The approach forms a (democratic) *societas civilis* [civil society] through the creation of the sovereign authority by an act of free will of an individual (Dellavalle, 2017). The conception seems a credible option for the Ministry of education in Ukraine in carrying out the educational reforms for the reason that it can help to create a space for social interaction and to overcome bureaucracies and societal debates caused by the persistence of the inherited top-down governance culture (Khelifi, 2019). Moreover, it complies with the multi-actor framework of change designed by Witte (2006) to study reforms in democratic European countries. Witte's model of policy change supposes a two-way interaction, which involves the internal institutional interaction and the external interaction between the institutions and actors (Witte, 2006). The above conceptual framework of shaping the policy inspired the study as it looks like an adjustable springboard for the higher education system reform in Ukraine. However, the literature review found no relevant local literature revealing the theory or methodology of this kind of research. Few international studies were found on using a bottom-up approach to making climate policy (Carraro, 2006), corruption prevention (Scott & Gong, 2015), implementation of school reform (Honig, 2004), overall policy-making referred as a 'joined-up' approach (Parry & Kerr, 2007), shaping law (Ryan, 2016), and to governance (Donovan, 2007). However, the use of the approach to shaping educational legislation and simulating it in educational settings is underrepresented.

The *purpose* of this research was to explore how effective the bottom-up approach to producing and shaping educational legislation is in Ukraine and to identify what observed changes take place in students if the bottom-up approach is simulated in the classroom.

The research questions were as follows: 1) to explore whether the 'voice' of the education stakeholders can be useful in addressing the loopholes in the Law on Education; 2) to identify how the students perceived the upgraded programmes; 3) to identify what observed changes take place in students when the bottom-up approach was simulated to deliver the courses entitled "Educational policy" and "National Education Policy."

Materials and Methods

This was exploratory research conducted at the institutional level and was initiated by the Department of Social Philosophy, Philosophy of Education and Educational Policy for the National Pedagogical Dragomanov University in 2016. It relied on methods used in qualitative research. The methodology of the research was approved by both the Education Policy Section of the Department and the Board of Academics. It was intended to inform university policy of several (of different majors) higher educational institutions on the provision of adequate vocational training and identify the transformation in perceptions of the reform-brought changes to the educational content, the ways the teachers are motivated, the ways cooperation among all stakeholders is established, and the upbringing dimension of education to be aimed at shaping values over three years. The study was structured as a succession of longitudinal randomised interventions based on surveying and focus group discussion techniques to collect data. It comprised several stages which were as follows: first, a baseline study (throughout 2016) to discover what was seen by stakeholders as inadequacies to education system and legislation (the results of the study were used to produce recommendations to the authorities and make amendments to the Law on Education); second, intervention #1 (from February until April, 2018) – to explore how the educational services customers (students, their parents and employers of several higher educational institutions) perceived the upgraded programmes and the ways they were delivered; third, intervention #2 (from February until April, 2019) – identify what observed changes take place in students if the bottom-up approach is simulated when delivering the courses entitled "Educational policy" and "National Education Policy" that were delivered to Masters at the National Pedagogical Dragomanov University (NPDU), Taras Shevchenko National University of Kyiv (TSNUK) and National Aviation University (NAU); fourth, intervention #3 (February, 2020) – to verify how the Masters' visions at the above institutions changed due to the course delivery approach. The latter was followed by data processing and interpretation. A baseline study was conducted at five leading higher educational institutions of different majors which were as follows: *Education*: National Pedagogical Dragomanov University and the Taras Shevchenko National University of Kyiv; *Technical Studies*: National Aviation University; *Medical Studies*: Bogomolets National Medical University and *Business Studies*: Kyiv National Economic University. The second intervention relied on the focus group semi-structured interview conducted one-to-one with 3 students, 3 employers, and 3 university representatives hired randomly ($n = 9$). When performing the third and the fourth interventions used a quasi-experimental design and were based on the 'mock-sessions of policy makers' used as a simulation of a bottom-up approach to engaging the students into implementing the requirements of the Law on Education (2017) into the institutional policy or amending it. The research design is visualised in Fig.1.

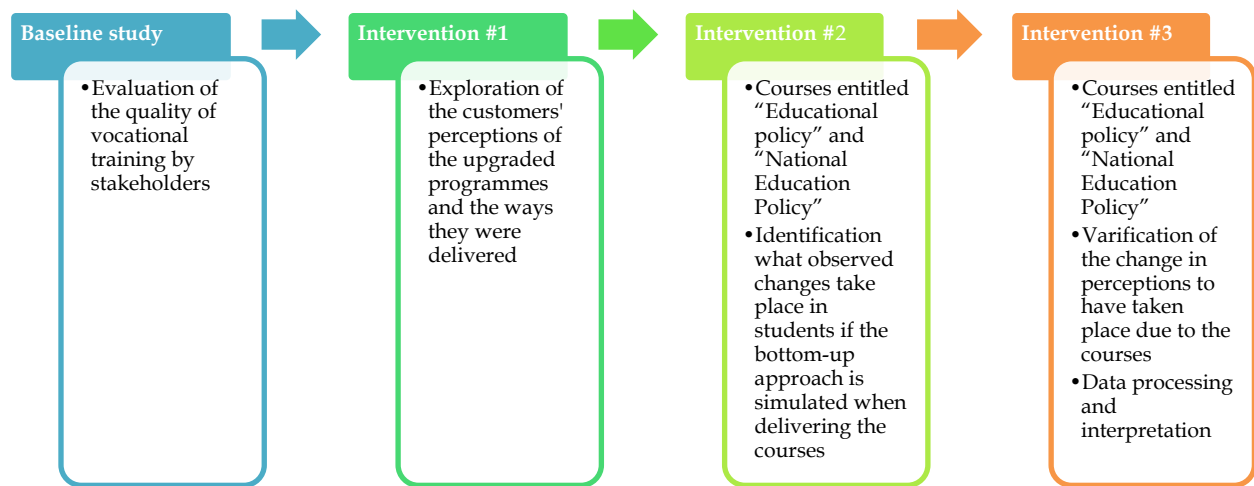


Figure 1. Visualised abstract research design

The Outline of the Courses

"Educational Policy" Course (EPC)

The EPC is a three-credit (ECTS) (90-hours) course that is mandatory and educational standards-compliant. It is delivered to the students seeking a Master's degree in Management of Education, Pedagogics and Philology at NPDU, TSNUK, and NAU, and is a compulsory curriculum component. It covers the topics which are as follows: "Educational Policy Analysis: A National and International Dimensions", "Educational Policy Indicators", "Public Education Policy Strategies in Different Regions of the World and Their Possible Application in Ukraine", "State Personnel Policy of Ukraine in Training Instructors, Scientific-Pedagogical and Scientific Employees for the Education System", "Ensuring Equal Access, Quality Improvement and Competitiveness of Education as Indicators of Education Policy in Ukraine".

"National Education Policy" Course (NEPC)

It is also a three-credit (ECTS) (90-hours) course that is mandatory and educational standards-compliant for such majors as Management of Education, Pedagogics, and Philology at NPDU, TSNUK, and NAU. It covers the topics which are as follows: "Models of Public Administration in the Field of Education in Different Regions of the World and the Possibilities of Their Application in Ukraine", "Types of Education Institutions: National Strategy of Reforming Them", "Instruments to Ensure Equal Access, Quality Improvement and Competitiveness of Education as Indicators of Education Policy in Ukraine".

To answer the second question of the study, the approach based on 'mock sessions of policy makers' and simulating a bottom-up approach strategy was applied to deliver both courses. The sessions were conducted before the lectures on the Law on Education (2017) were conducted. Those mock sessions relied on moderated analysis of the former Law on Education (1991) and were aimed at encouraging students to produce changes to that document based on their own experience of obtaining education through their lives. The students were engaged in observed two-way focus group discussions (Nyumba et al., 2018). A moderator (facilitator) and an assistant moderator were hired to record the qualitative data so that it was later transcribed, categorised in themes, and analysed by the research team. The assistant moderator was supposed to observe the behaviour and actions of the participants.

Sample and Data Collection

The overall study population comprised of 465 individuals. Two hundred and sixty-two ($n = 262$) (174 females and 88 males) people were randomly hired to participate in the baseline study. This figure for the sample size was computed using the Sample Size Calculator online tool which is available at <https://www.surveysystem.com/sscalc.htm>. The yielded values were as follows: $n_{population} = 465$; confidence level = 95%; confidence interval = 4) and was significant to represent the whole population. At the second stage, 9 people (3 students, 3 employers, and 3 university representatives) were randomly hired for the focus group semi-structured interview. One hundred and ninety-four ($n = 194$) Master's students studying the courses in "Educational Policy" and "National Education Policy" at NPDU, TSNUK, and NAU were selected to participate in 'mock-sessions of policy makers' (see Table 1).

Table 1. The characteristics of the sampled students from NPDU, TSNUK, and NAU in the second and third interventions

		NPDU n (%)	TSNUK n (%)	NAU n (%)	p-value
Gender	Males	26 (27.96)	22 (23.66)	45 (48.38)	$p < 0.001$
	Females	39 (38.62)	43 (42.57)	19 (18.81)	
Mode of study	Full-time	49 (34.75)	51 (36.17)	41 (29.08)	0.115
	Extra-mural	16 (29.63)	14 (25.93)	24 (44.44)	
Age (years)	21-22	18 (27.69)	15 (23.07)	19 (29.69)	0.204
	22-23	47 (72.31)	50 (73.93)	45 (70.31)	
Mean Grades (ECTS)		77,12%	81.35%	79.56%	0.247

The data in Table 1 suggested that the sampled groups were approximately homogeneous in gender, mode of study, age, and academic performance.

Ethical considerations

Prior to every intervention, all sampled students were informed in writing that their responses would be kept as confidential for the study and would be used purposefully for this research only.

Instruments

Qualitative instruments and observational data were used to yield the data. Those were a survey questionnaire, semi-structured interview questionnaire, and focus group discussion observation checklists and moderators' and facilitators' reports. The survey questionnaire used in the baseline study comprised two sections and covered six dimensions. The first section intended to obtain demographical data and the second section included questions distributed by dimensions. The latter were as follows: legal and regulatory support, organisational flexibility, scientific effectiveness, instructors' effectiveness, quality of the programmes, technological capability. The questions were partially based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) (2015). A seven-point Likert scale (from 1 meaning 'strongly disagree' to 7 meaning 'strongly agree') was employed to evaluate questions. The follow-up open-ended questions were used in some cases to obtain a more detailed explanation or comment. The baseline study questionnaire design is shown in Appendix A.

The experts from the section Education Policy for the Department of Social Philosophy, Philosophy of Education, and Educational Policy for the NPDU and the Department of Pedagogy and Psychology of Vocational Education for NAU were involved in the review of a questionnaire. The review was followed by the panel discussion. The panel consisted of 5 experts with a Doctorate academic degree in Pedagogics and a background in Mathematics and Statistics (2 out of 5) – Dr. in Pedagogics and Ph.D. in Mathematics. First, the experts responded to the questions from the above questionnaire individually and assessed the clarity, significance, and concreteness of each item. They used a 4-point rating scale (from 1 meaning 'not clear' ('not concrete' or 'not significant') to 4 meaning 'totally clear' ('absolutely concrete' or 'very significant')) to assess every item. The experts' ratings were utilised to calculate the content validity index (CVI) of each item as it was recommended by Rodrigues *et al.* (2017). The computation was based on the formula below.

$$CVI = \frac{n \text{ of raters provided rating scores from 1 to 4}}{n \text{ of raters in total}}$$

The item was considered adequate if the average score for the experts' agreement was higher than 2.75 ($\approx 70\%$). Further validation of this questionnaire took place in the panel discussion where the experts could verbalise their judgements. After validation by the experts, the coding procedure was performed to comply with Veal & Darcy (2017) by two members of the research team who have a background in Statistics.

The focus group interview questionnaire for intervention #1

The interview strategy was borrowed from Krueger & Casey (2015). It employed a stage-wise questioning approach including such questions as opening, introductory, transition, core, and ending. ATLAS.ti Software was used to assign codes to each theme to have emerged from the interview. Content and discourse analysis were performed by the research team to ensure the validity and reliability of the questionnaire.

The Pearson correlation test was used to calculate the relationships between perceptions of students and employers, between employers and educators and between educators and students.

1. What do you think of the educational reform?
2. What positive educational experiences did you have before the reform?
3. What disappointments did have that were related to the former educational system?

4. What would you say to the Minister of Education of Ukraine about the education reform if you had one minute to talk to her here and now?

5. What can be done to make the reform more profound and effective?

The observational data collection tools used in 'mock-sessions of policy makers', interventions #2 & 3

The checklists were designed for a moderator (facilitator) and an assistant moderator to evaluate students' contribution to the discussion, students' level of engagement measured by two scales like effort and initiative. This was coded and validated using the same approach as the one used for the focus group interview questionnaire for intervention #2.

Data analysis

The MS Excel spreadsheet was used to consolidate all data yielded from a survey questionnaire, semi-structured interview questionnaire, and focus group discussion observation checklists and moderators' and facilitators' reports. IBM SPSS Statistics 25.0.0.1. Software was used to process the data. The questions based on a seven-point Likert scale were analysed using median, means, and the margin of error, standard deviations, and variance. The frequency distributions were used to analyse the responses to the focus group interview questionnaire for intervention #1. The Pearson correlation test was used to calculate the relationships between perceptions of students and employers, between employers and educators and between educators and students. Though the sample was small (n=9), the amount of categorised data drawn from the interview was found sufficient to make calculations. $p < 0.05$ was considered significant.

Results

Overall, the study provided tangible and intangible results of the use of a bottom-up approach in the context of this research. The baseline study allowed to bring initiatives the parliamentary working group that drafted the Law on Education and address the loopholes in the Law related to the structure of education, quality assurance, self-governance of the institutions, standards of education, academic integrity, outsourcing of services provided by practitioners, ensuring instruction and scientific activity. More than a hundred amendments were made to the Law due to the baseline study. The intangible results for the research were related to the increased proactiveness of the students in policy-making of the institutions through student governance, petitions, and enquiries.

The results of the descriptive statistics of a baseline study questionnaire are presented in Table 3. Also, see the distribution of responses to the questionnaire based on a seven-point Likert scale, by item in Appendix B.

Table 3. Descriptive statistics of a baseline study questionnaire results (n = 465)

Dimension	Median	μ , the margin of error	SD	σ^2
LRS	49	66.42 \pm 21.68	65.45	4283.78
OF	29	66.42 \pm 27.33	90.39	8171.24
SE	11	65.85 \pm 36.71	110.81	12280.40
IE	0	66.48 \pm 40.24	121.47	14756.59
QP	11	66.42 \pm 37.85	114.25	13054.13
TC	15.5	66.42 \pm 32.36	107.00	11451.10

Note: LRS – Legal and regulatory support; OF – Organisational flexibility; SE – Scientific effectiveness; IE – Instructors' effectiveness; QP – Quality of the programmes; TC – Technological capability, σ^2 -variance; confidence level – 95%.

The Median figures for responses to the questionnaire provided proof that legal and regulatory support (Med = 49), organisational flexibility (Med = 29), and technological capability (Med = 15.5) of the institutions were of the greatest concern amongst the respondents.

The results of the focus group interview questionnaire for intervention #1 (n = 9)

Question 1. Six out of nine respondents did not notice or experience any significant change in terms of the quality of education, its responsiveness to challenges of the job market, or bringing gains to the instructors. Two individuals reported an increased workload, and one person confessed they did not expect any positive change in the nearer future and had a desire to continue their education somewhere abroad.

The most illustrative quotations were:

[... we are doing one and the same thing day years – memorise, memorise, memorise. Teachers make us feel we are progressing but neither I nor my friends feel it...]

[...they tell us that the education we gain meets the requirements of the job market. When I did my internship, they told me that I should retrain... I couldn't do anything real, just observe what other employees were doing...]

Question 2. Three individuals explained that the system seemed to be less strict to both instructors and students. Two people liked it when education was less technological. Two more people considered it positive that they could have more time to work. Two respondents enjoyed the former educational system because it was 'more personal' (they could get some 'special' treats for the teacher if the one liked them).

Some respondents' quotations seeming explanation were:

[... relationships of the students and the teachers matter a lot of education. Students can negotiate their workload, grades, and assignments with them so that they could not be so much difficult...]

[... technology makes studies less personal and more controlled...]

Question 3. One person mentioned the assessment system. For them, it was not objective. Two people suffered from a lack of practical experience while six complained that they could not be involved in the governance or decision-making process at their universities.

Below are some responses.

[... I get good grades when the teacher likes me. And I never know what I can do to get this or that grade...]

[... students always overestimate their skills and abilities...]

[... student self-governance at university is not for everyone who wants. You should be a kind of officious and intrusive so that you were noticed by professors ...]

[...my friend is a member of student self-government and she complains that their decisions are just on paper...]

Question 4. The common ideas expressed by the respondents were as follows: updated content, practical purpose of the classes, inviting practitioners to the classes, involving the students in the governance and decision-making process, using technology to make the learning process more flexible so that it was less time-consuming, making studies more entrepreneurial.

Some students' responses were as follows:

[...we want to be trained but taught, we want our courses to be combined with on-job projects, we want to learn from best, we want less theory, fewer lectures, and less imposed content...]

[... teachers should be motivated to work better ...]

[... I don't want to be treated like a school kid. I want to be treated as a grown-up...]

[...I want skills that can help me to be self-employed...]

Question 5. Three respondents suggested motivating both students and instructors financially. Five people suggested involving students, teachers, and employers in shaping educational legislation. One respondent suggested running an information campaign to address criticisms.

Some responses to quote were:

[... the reform could work better if the teachers are better paid... and when the students who do their best can get some money for this ...]

[... the educational reform should be a common goal and interest for all the stakeholders...]

[... public acknowledgement of teachers' and students' achievements in teaching and learning could be used to deal with criticisms]

Given that the r -values ranging from -1 to $+1$ are considered statistically significant, the Pearson correlation test demonstrated a positive dependence between perceptions of students and employers with the figures of $r = .41$ and $p > .05$, between employers and educators ($r = .37$, $p > .05$) and between educators and students ($r = .39$, $p > .05$). It implies that their opinions might be considered to be the ones that represent the opinions of the whole population among which the opportunity to participate in (bottom-up approach) producing and shaping educational legislation in Ukraine is mentioned.

The twelve observers' reports of the 'mock sessions of policy makers' supposed to simulate a bottom-up approach strategy revealed that the changes in the students' vision of education principles and their behaviour as citizens. The ideas expressed by the participating students were categorised under six headings: (i) a motivated teacher, (ii) new

content of education, (iii) distribution of public funds, (iv) equal access to quality education, (v) a new school structure and (vi) participation in legislation and regulation processes (governance). The frequency distribution of the categorised ideas and visions is presented in Table 4.

Table 4. The frequency distribution of the categorised ideas expressed by the students when participating in 'mock sessions of policy makers'

Categorised ideas	Intervention 2, %	Intervention 3, %
Participation in governance	11	14
New school structure	11	13
Equal access to quality education	11	9
Public funds distribution	17	11
The new content of education	23	27
Motivated teacher	27	26

As can be seen, the simulation of the bottom-up approach in the courses entitled "Educational policy" and "National Education Policy" accelerated the desire of the students to participate in the processes of shaping education policy, legislation, and regulation. It also brought a change to the students' vision of the school structure, the content of education, and the way the teacher is motivated.

The observers also reported a change in students' behaviour as citizens. They noticed that due to the delivery format of the courses, the students articulated their opinions with greater confidence in the class and outside the class. Their actions became more proactive and they demonstrated active citizenship patterns in discussions.

Discussion

For Ukraine, the study was unique in the use of the bottom-up approach to producing and shaping educational legislation and its simulation in the classroom. This was because no evidence of any relevant (benchmark) research was found in the literature in Ukraine.

It attempted to explore how effective the bottom-up approach to producing and shaping educational legislation is in Ukraine and to identify what observed changes can take place in students if the bottom-up approach is simulated in the classroom. It was found that the bottom-up approach to shaping educational legislation can be considered an option or an alternative to the conventional law-making procedure, at least in the sphere of education, in Ukraine. The baseline study made it possible to make more than a hundred amendments to the Law on Education in 2017 that were related to the structure of education, quality assurance, self-governance of the institutions, standards of education, academic integrity, and outsourcing of services provided by practitioners, ensuring instruction and scientific activity. It goes in line with conclusions of Dellavalle (2017) and Khelif (2019) stating that the bottom-up approach – in some sources it is associated with 'soft governance' – can bring benefits if the conventional top-down policy making culture has changed and if all educational stakeholders view themselves as implementers of policies.

This study found a relative dissatisfaction and disinterest of students and academics in reforms which agrees with the previous research of Sabatier (2005) and Kauko (2013) who claim that there are frequent cases of 'passive resistance' to in less democratic nation-states. The focus group interview provided data on perceptions of the educational reform of the three key stakeholders who were students, instructors, and employers. The results of the interview implied that the reform was still insufficient to bring improvements in educational content and classes and the way the latter both were delivered. There were found claims about involving the students in the governance and decision-making process, using technology to make the learning process more flexible so that it was less time-consuming, making studies more entrepreneurial.

The study also attempted to address insufficient student engagement in lecture courses through the use of mock policy making experience which has proven to be an efficient teaching tool (Hurwitz, 1978; Sweet, 1999). The use of simulation of the bottom-up approach in the courses entitled "Educational policy" and "National Education Policy" showed the potential to encourage students to participate in the processes of shaping education policy, legislation, and regulation. It also brought a positive change to the students' behaviour as citizens, their vision of the school structure, the content of education, and the way the teacher is motivated. It was proved by the results of observations of the 'mock sessions of policy makers'. In the third intervention, the sampled students were more positive about participation in governance, and the introduction of the new school structure. They demonstrated an accepting attitude to the new content of education.

The results go in line with Conte et al (Eds.) (1997) explaining how the presented simulations work in different fields. The students showed greater confidence as citizens and public opinion leaders in the field of education. The use of simulations dispelled a myth about the monopoly of policy making in Ukraine. This type of student training provided them with a traceable structure of law-making and reform implementation (governance of the education system,

funding, accreditation, quality assurance, etc.). This agrees with the previous research conducted by M'hamdi & Nemiche (2018) and revealing the use of bottom-up and top-down approaches to simulate complex social phenomena. The results obtained in the study are also consistent with views of Justice Scalia on a bottom-up approach to shaping the Law (Ryan, 2016).

The study contributed to the investigation of the problem of using the bottom-up approach to shaping educational legislation (Honig, 2004; Marsh & Bowman, 1989) and to use a simulated version of this approach in the vocational training at university (Brailas et al., 2017; Burns, 2003; Gomez-Rey et al., 2018).

Conclusions

The results of the study suggest the bottom-up approach to shaping educational legislation can be considered an option or an alternative to the conventional law-making procedure, at least in the sphere of education, in Ukraine.

The use of mock policy-making experience which has proven to be an efficient teaching tool. The application of the simulation of the bottom-up approach in the courses entitled "Educational policy" and "National Education Policy" was found to have the potential to encourage students to participate in the processes of shaping education policy, legislation, and regulation. The approach accelerated the desire of the students to participate in the processes of shaping education policy, legislation, and regulation. It also brought a change to the students' vision of the school structure, the content of education, and the way the teacher is motivated. The intervention also brought a positive change to the students' behaviour as citizens and their motivation as teachers-to-be.

Recommendations

Though being a rare opportunity, the bottom-up approach to shaping educational legislation is recommended as a powerful instrument at the initial phase of this process combining the information and consultancy levels as it enhances decision-making transparency, brings initiatives, increases responsibility and gives the renewed confidence to all the stakeholders for the future outcome (society's common good) of the Law. To increase the efficiency of the tool, we recommend using a strategy relying on written communication so that the "copyright" issue regarding the respondents' initiatives was prevented. Moreover, the intervention of this kind should involve public announcements of attracting target volunteers to the law-making and explaining the importance of their participation in this intervention. We suggest using the semi-automated and audience-targeted "customer funnel" that is based on CRM AutoWebOffice to organise the collection of data. The semi-automated "customer funnel" can include such elements as *an announcement* (in the social media, through Telegram, YouTube video clip, or orally before the lectures); *a landing page* (to collect volunteers' email addresses and bio to create a contacts database); *a reminding letter* about the start of the survey and brief instruction on how to complete it and when the submission deadline is; *and a letter* acknowledging the importance of the volunteers' participation in the survey. The CRM AutoWebOffice can be accessed via the following link: <https://autoweboffice.com/>?

The simulation of the bottom-up approach in the classroom is recommended as an effective pedagogic tool that can make a lecture interactive and help the students leave the lecture with some tangible outcome. This approach requires a lecturer a thorough preparation like making handouts, using clicker system based quizzes and quests along with mind-sessions and brainstorming techniques. It would be advisable if the number of students was 30 people maximum. Also, this research recommends further work to address the methodology loopholes of the application of the bottom-up approach in policy making and for the instructional purpose.

Limitations of the study

The little opportunity to use the bottom-up approach to shaping educational legislation in Ukraine, sample size and majors of the institutions involved in the interventions could be considered a limitation to this study.

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Conflicts of Interest

The authors declare having no conflict of interest.

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Appendix A. Baseline study questionnaire design

Dimension	Questions
Legal and regulatory support	<p>The legislation is strict for educational institutions.</p> <p>The financial autonomy of the institution is recognised in legislation.</p> <p>The institution is allowed to invest the raised funds into tangible (e.g. motivating personnel) and intangible assets (e.g. premises).</p> <p>Regulatory concerns of the institution are addressed by authorities.</p> <p>Inner regulations motivate personnel to succeed in the quality of teaching and scientific activity.</p>
Organisational flexibility	<p>The programmes are regularly revised and updated.</p> <p>The institution cooperates locally and internationally with different stakeholders.</p> <p>The practitioners take part in designing and updating the programmes</p> <p>The institution uses a customer-tailored approach in management and service delivery.</p> <p>Reputation and brand management are part of the institutional policy.</p> <p>The external audit of the quality of business and educational processes in the institution is performed regularly.</p>
Scientific effectiveness	<p>The institution is involved in international research projects.</p> <p>The students are involved in financially advantaged experimental work.</p> <p>The institution brings innovations in the field.</p> <p>Scientific achievements are publicised locally and internationally.</p> <p>Scientific activity is marketed by the institution to raise funding.</p>
Instructors' effectiveness	<p>Lecturers/teachers are practitioners.</p> <p>Instructors educate and motivate students to succeed in their subjects.</p> <p>Teaching staff regularly upgrade their skills.</p> <p>The teaching staff shows academic integrity.</p> <p>Instructors contribute to their area of expertise scientifically.</p>
Quality of the programmes	<p>Programmes are competitive and develop skills of the 21st century.</p> <p>Programmes are of an international job market value.</p> <p>Programmes are of practical value.</p> <p>Programmes are cross-disciplinary.</p> <p>Programmes are effective.</p>
Technological capability	<p>My institution is well equipped technologically.</p> <p>Hardware and software are licensed and regularly updated.</p> <p>Free Wi-Fi access is provided both in the university and on campus.</p> <p>Teachers and lecturers use technology skilfully.</p> <p>The students learn through technology all the time.</p> <p>Cloud computing services are used for documentation and communication.</p>

Appendix B. The distribution of responses to the questionnaire based on a seven-point Likert scale, by items

Dimension	Item	A seven-point Likert scale						
		1	2	3	4	5	6	7
LRS	LRS1	0	0	0	27	76	146	216
	LRS2	113	191	75	37	49	0	0
	LRS3	110	221	83	51	0	0	0
	LRS4	0	51	87	111	178	38	0
	LRS5	128	119	98	48	45	27	0
OF	OF1	0	0	58	152	137	106	12
	OF2	275	76	63	32	19	0	0
	OF3	349	116	0	0	0	0	0
	OF4	310	128	27	0	0	0	0
	OF5	31	117	143	87	39	48	0
	OF6	42	272	118	4	8	21	0
SE	SE1	27	61	253	58	55	11	0
	SE2	406	23	31	5	0	0	0
	SE3	122	193	93	57	0	0	0
	SE4	0	0	2	110	247	92	14
	SE5	1	441	3	0	0	0	0
IE	IE1	0	42	69	309	28	17	0
	IE2	0	0	0	0	340	99	26
	IE3	0	0	0	0	0	29	438
	IE4	0	0	0	259	111	95	0
	IE5	0	0	0	395	70	0	0
QP	QP1	0	0	375	67	23	0	0
	QP2	23	402	31	9	0	0	0
	QP3	0	31	36	301	79	18	0
	QP4	0	0	0	121	254	79	11
	QP5	0	0	0	328	86	51	0
TC	TC1	0	35	186	109	79	56	0
	TC2	58	388	11	8	0	0	0
	TC3	0	119	269	63	14	0	0
	TC4	0	32	291	94	36	12	0
	TC5	0	0	56	297	74	21	17
	TC6	0	411	43	11	0	0	0