

Effectiveness of educational interventions to increase voter turnout among politically marginalized populations in OECD countries

A systematic scoping review of studies published since 2006

L'efficacité des interventions éducatives pour accroître la participation électorale des populations marginalisées dans les pays de l'OCDE

Une revue systématique de la portée des études publiées depuis 2006

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Contexte:

La participation électorale est une composante essentielle pour évaluer le caractère démocratique d'un système politique. Au cours des dernières années, on a pu constater que les institutions politiques des pays de l'OCDE ont eu des difficultés à s'adapter à la diversité des électeurs. Cela s'est notamment traduit par des taux de participation électorale systématiquement plus bas chez certaines populations marginalisées sur le plan politique. Bien que plusieurs interventions aient été mises en place pour répondre à cet enjeu, aucun examen systématique n'a été réalisé pour évaluer l'efficacité des interventions éducatives visant à augmenter la participation électorale de ces populations.



Messages clés pour les politiques et les pratiques:

Neuf études évaluant l'impact des interventions éducatives sur le taux de participation électorale des populations marginalisées et respectant les critères d'inclusion ont été incluses dans cet examen systématique.

- La littérature scientifique sur l'efficacité des interventions éducatives visant à accroître le taux de participation électorale des populations marginalisées se penche presque exclusivement sur l'effet des cours d'éducation citoyenne sur les jeunes.
- Davantage de recherches sur les autres interventions éducatives devront être effectuées afin d'évaluer leur efficacité.
- De nouvelles études seront aussi nécessaires afin d'évaluer l'impact des interventions éducatives sur les populations marginalisées autres que les jeunes.
- Les cours d'éducation citoyenne traditionnels montrent des résultats encourageants en ce qui concerne la participation électorale des jeunes.
- Les résultats de cet examen systématique tendent à montrer que les décideurs souhaitant augmenter la participation électorale devraient prendre en considération l'âge auquel les étudiants suivent les cours d'éducation civique afin d'assurer leur efficacité.

Interprétation :

- Les résultats de cette revue systématique doivent être interprétés avec prudence considérant que peu d'études ont été répertoriées et que la qualité générale de la preuve (évaluée grâce à l'outil GRADE) est plutôt faible.



Nos résultats montrent que les cours d'éducation civique peuvent améliorer la participation électorale des jeunes.



Aucune étude évaluant l'efficacité des interventions éducatives sur d'autres populations marginalisées politiquement n'a été répertoriée dans le cadre de cette revue de littérature.



Résultats:

- Huit des dix interventions incluses dans cette revue de littérature étaient des cours d'éducation citoyenne. De ces huit interventions, six ont eu un impact positif et statistiquement significatif sur la participation électorale des jeunes.
- Une de ces études concluait que lorsque suivis à un plus jeune âge, les cours d'éducation citoyenne ont un effet moins durable sur les comportements électoraux.
- Des résultats mitigés ont été trouvés en ce qui concerne l'impact des simulations démocratiques sur la participation électorale des jeunes. Une seule des deux études analysant cette intervention présente des résultats positifs et statistiquement significatifs.
- La seule étude ayant évalué l'impact des immersions ne présente pas de lien significatif entre cette intervention et la participation électorale.
- Le faible nombre d'études ayant évalué des méthodes d'apprentissage alternatives comme les simulations et les immersions ne nous permet pas de tirer des conclusions quant à leur efficacité.



Méthodes:

Les études pertinentes furent identifiées à l'aide de six bases de données provenant de la science politique, des sciences de l'éducation et d'autres sciences sociales. Les recherches documentaires dans ces bases de données ont généré 1 203 notices bibliographiques qui ont d'abord été filtrées sur leur titre et résumé par deux évaluateurs travaillant indépendamment en utilisant des critères d'inclusion prédéfinis. Les deux évaluateurs ont ensuite utilisé les mêmes critères d'inclusion pour évaluer dans leur entièreté les articles ayant survécu à la première phase de sélection. Les notices bibliographiques et les articles ont été traités et filtrés à l'aide du logiciel *EPPI Reviewer 4*.



Risques de Biais:

- Une seule des neuf études incluses présente un faible risque de biais, les huit autres ayant un risque de biais modéré ou incertain.
- Manque d'objectivité dans la mesure des résultats puisque la participation électorale ou l'intention d'aller voter ont été autodéclarées par les participants.
- Quatre études n'utilisent pas de méthode d'échantillonnage probabiliste.
- Trois études effectuées à l'aide de sondages ne divulguent pas le taux de participation ou d'attrition.



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Effectiveness of educational interventions to increase voter turnout among politically marginalized populations in OECD countries: a systematic scoping review of studies published since 2006



2018

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Background:

Electoral participation is a central dimension to evaluate the strength of a democratic regime. Over the recent years, political institutions in OECD countries have had difficulties to adapt to the diversity of their electors. This has resulted in turnout rates being systematically lower for certain marginalized populations. While many interventions responding to this issue have been developed, no systematic review evaluating the effectiveness of educational interventions has been conducted.



Key messages for policy and practice:

This systematic review has identified nine studies which respected the inclusion criteria and evaluated the impact of educational interventions on the electoral participation of populations marginalized politically.

- The published peer-reviewed empirical literature on the effectiveness of educational interventions to increase voter turnout among marginalized populations focuses almost exclusively on the effect of civic education classes on young people.
- Further research on other types of educational interventions (democratic simulations, experiential learning, etc.) will be needed to assess their efficiency.
- New studies will also be needed to evaluate the effects of educational interventions on marginalized populations other than young people.
- Traditional courses of civic education have shown promising results to increase the electoral participation.
- Review findings suggest that decision makers wishing to increase electoral participation should take into account the age at which students take civics classes.

Interpretation:

- The results of this systematic review should be interpreted with caution as few studies were identified and the overall quality of the evidence (assessed with the GRADE approach) is rather low.



Our results seem to suggest that civic education courses can enhance electoral participation of young people.



No studies found in this systematic review assess the effectiveness of educational interventions on the electoral participation of other politically marginalized populations.



Results:

- Eight of the eleven interventions included in this review were civic education courses. Of these eight interventions, six had a positive and statistically significant impact on the electoral participation of young people.
- One of those studies found that citizenship courses taken at a younger age seem to have a less lasting effect on electoral behaviour.
- Mixed results were found for the impact of democratic simulations on electoral participation of young people. Only one of the two studies which assessed this educational intervention showed positive and statistically significant results.
- The only study which evaluated the impact of immersions did not show any significant link between the use of this method and electoral participation.
- The small number of studies assessing active learning and experiential learning precludes concluding that traditional methods are more effective than new ones.



Methods:

Relevant studies were identified using six bibliographic databases from Political Science, Education sciences and other social sciences. The literature search generated 1203 bibliographic records, which were firstly screened on their title and abstract by two reviewers who were working independently using the pre-defined selection criteria. The reviewers then applied the same predetermined inclusion criteria on the full text of the studies that survived the first screening phase. Studies were managed and screened using the web-based software *EPPI reviewer 4*.



Limitations:

- Only one of the nine included studies presents a low risk of bias; the eight others have a medium or uncertain risk of bias.
- There is a lack of objectivity in outcome measures as electoral participation or intention to vote in a future election were self-reported in most studies.
- Four studies do not use a probabilistic sampling method.
- Interventions included in this systematic review were conducted in a very small number of countries (i.e. United States, United Kingdom and Canada).
- Three of the studies that used surveys do not present participation rate or attrition.



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TABLE OF CONTENTS

List of tables	3
List of figures	3
List of appendices	3
Key messages	6
Executive summary	7
Context: the issue	9
Description of the problem	9
The interventions considered in the review	9
Why it is important to conduct this review	9
Objectives	10
Methods	11
Search methods for identification of studies	11
Electronic searches	11
Other searches	11
Criteria for including studies in the review	11
Subject/outcomes	11
Interventions	11
Target groups	12
Countries	12
Date of publication	12
Evidence	12
Study design	12
Data collection and analysis	12
Selection of studies	12
Coding and numeric data extraction	13
Quality assessment	13
Results	14
Bibliographic search	14
Description of the studies	14
General overview	14
Detailed description of the interventions	18
Quality assessment of included studies	20
Intervention effect	20
Discussion	23
Summary of main results	23
Overall reviews' completeness and applicability	23

Quality of evidence	23
Limitations and potential biases in the review process	24
Agreements and disagreements with other studies and reviews	24
Conclusion	26
Implications for practice and policy	26
Implications for research	26
References	27

List of tables

TABLE 1: ONLINE DATABASES SEARCHED	11
TABLE 2: DATA EXTRACTION FIELDS	13
TABLE 3: OVERALL STUDY CHARACTERISTICS	16
TABLE 4: INTERVENTION DESCRIPTION	19
TABLE 5: RISK OF BIAS ANALYSIS	20
TABLE 6: THEMATIC SUMMARY FOR INTERVENTIONS ASSESSED IN THE STUDIES INCLUDED IN THE REVIEW	21
TABLE 7: QUALITY OF EVIDENCE	25

List of figures

FIGURE 1: FLOW DIAGRAM	15
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List of appendices

APPENDIX 1: SEARCH STRATEGY	28
APPENDIX 2: RESULTS FOR STUDIES INCLUDED IN THE REVIEW	33

Key messages

- The published peer-reviewed empirical literature on the effectiveness of educational interventions to increase voter turnout among marginalized populations focuses almost exclusively on young people.
- There is a great diversity of educational interventions. The studies that were reviewed examine the effectiveness of traditional civic education courses and new approaches such as active and experiential learning.
- The vast majority of interventions assessed in the studies included in the review were civic education courses. Most of these interventions showed positive and statistically significant results.
- Only one study assesses immersions (experiential learning), but it did not show any conclusive result.
- Mixed results were found for democratic simulations (active learning) since only one of the two studies that assessed this intervention shows positive and statistically significant results.
- Overall, the studies included in the review do not allow concluding that new teaching methods such as active learning and experiential learning are effective ways of increasing electoral participation among young people.
- Traditional courses of civic education, the most tested type of interventions, have shown promising results. However, the small number of studies examining the effectiveness of the other types of methods precludes concluding that traditional methods are more effective than new ones.
- We found two longitudinal studies and five studies with control groups. Large heterogeneity among studies in terms of research design and measurements precluded the conduct of a quantitative meta-analysis.
- To our knowledge, there is no published peer-reviewed literature measuring the effect of educational interventions aimed at increasing voter turnout of marginalized populations beyond young people. Therefore, further research on these populations is needed.
- Some research findings suggest that decision makers should take the age factor into account, as we found indications that the effect of civic education interventions on voter turnout might depend on the age at which courses are taken. Review findings suggest that the most lasting effects on electoral participation are recorded among the students closest to being registered electors.
- The weak quality of evidence amassed in this systematic review means that the results should be interpreted with caution.

Executive summary

Context: the issue

Electoral participation is a central dimension to evaluate the strength of a democratic regime. Over the recent years, political institutions in OECD countries have had difficulties to adapt to the diversity of their electors. This has resulted in turnout rates being systematically lower for certain marginalized populations. While many interventions responding to this issue have been developed, no systematic review evaluating the effectiveness of educational interventions has been conducted.

Objectives

The objective of this knowledge synthesis is to summarize research findings concerning the effectiveness of educational interventions (civic educational classes, democratic simulations and immersions) aimed at enhancing electoral participation of marginalized populations.

Search methods

Relevant studies were identified using six bibliographic databases from Political Science, Education sciences and other social sciences. Bibliographic database searches were conducted on May 24th, 2017 by an information specialist trained in systematic literature reviewing. Additional sources were found after reviewing the bibliographic references of the included studies.

Selection criteria

To be included in the review, studies had to respect the following criteria: (1) they had to evaluate the effects of an intervention; (2) they had to be published not before 2006; (3) the intervention had to take place in an OECD country; (4) the type of intervention had to be part of a predefined list that we specified in the protocol; (5) the study had to evaluate the impact of an intervention on a marginalized population; (6) the study had to be published either in French or in English; (7) the study had to present substantial empirical evidence; and (8) all study designs were included, except opinion letters, lab experiments, conceptual and theoretical studies and essays.

Data collection and analysis

Studies were managed and screened using the web-based software *EPPI-Reviewer 4*. The literature search generated 1,203 bibliographic records, which were firstly screened on their title and abstract by two reviewers who were working independently using the pre-defined selection criteria. A total of nine studies were included at the end of the screening process. Relevant information was extracted and tabulated from each included study, using pre-defined extraction codes. Finally, in order to assess the overall quality of the evidence, the results were analyzed using the GRADE approach.

Results

All the interventions that were assessed in the studies included in the review covered only one marginalized population, namely young people. Several types of interventions were assessed in the studies retrieved. However, the vast majority of interventions assessed in the studies included in the review were civic education courses. Most of these interventions showed positive and statistically significant results.

In terms of active learning, two interventions were examined of which one shows positive and statistically significant results. Only one intervention of the experiential learning category was assessed, but it does not show any conclusive result.

Mixed results were found for democratic simulations (active learning) since only one of the two studies that assessed this intervention shows positive and statistically significant results. The other study finds no significant relationship between exposure to active learning and increased voter turnout among young people. Therefore, we cannot draw any general conclusion as to the effectiveness of this type of intervention.

Only one study that assessed immersions (experiential learning) met our inclusion criteria. This study does not show any significant link between the use of these methods and electoral participation rate. Therefore, the studies included in the review do not allow concluding that new teaching methods such as active learning and experiential learning are effective ways of increasing electoral participation among young people. However, traditional courses of civic education, the most tested type of interventions, have shown promising results. However, the small number of studies examining the effectiveness of the other types of methods precludes concluding that traditional methods are more effective than active ones.

The studies included in the review are of relatively high methodological quality. More precisely, we found two longitudinal studies and five studies with control groups. Large heterogeneity among studies in terms of research design and measurements precluded the conduct of a quantitative meta-analysis. The overall quality of the evidence is however rather low mostly due to the inconsistency and the imprecision of the results.

To our knowledge, there is no published peer-reviewed literature measuring the effect of educational interventions aimed at increasing the voter turnout of marginalized populations beyond young people. Therefore further research on these populations is needed.

Conclusions

Implications for practice and policy

Few studies included in the review assessed the effectiveness of new teaching methods such as active learning and experiential learning. Therefore, decision makers who might be interested in investing in the implementation of these educational interventions should also be investing in impact evaluation. Review findings suggest that the most lasting effects on electoral participation might be recorded among the students who are close to becoming registered electors.

Implications for research

More rigorous evaluations of educational interventions to increase voter turnout are needed. To the best of our knowledge, there is no published peer-reviewed literature on educational interventions aimed at increasing voter turnout of populations beyond young people. Therefore further research on these other populations is needed.

Context: the issue

Description of the problem

Democracy is a concept that does not have a unique definition. Indeed it may refer to multiple characteristics such as sovereignty of the people, defense of rights and freedoms or capacity of electors to designate their leaders. Nonetheless, participation of the citizens in the electoral process is a central dimension in every democratic regime.

Marginalized populations such as young people seem to have a lower level of electoral participation. Indeed the average turnout rate for 18-24 years old in OECD countries is 16 percentage points lower than for 25-50 years old. This situation is especially alarming for countries like the United Kingdom and Norway where this difference reaches respectively 22.7% and 20.1%. We can find a similar pattern in Canada where the 18-24 years old had a turnout rate of 57.1 as opposed to a 68.3% national average (OECD, 2016). While many other indicators can be used to evaluate electoral participation, we consider that voter turnout remains one of the most direct measures that allow comparing democratic strength from one country to another.

Over the recent years, some countries have attempted to develop policies in order to increase electoral participation of marginalized populations. This study provides the first systematic literature review of studies that assessed the effects of educational interventions on this democratic outcome.

The interventions considered in the review

This review analyzes studies that specifically assessed the effects of different educational interventions on electoral participation of marginalized populations. In this review, we were interested in a wide range of educational and pedagogical practices, such as active and experiential learning, which go beyond the traditional ways of teaching civic knowledge. Three categories of educational interventions were reviewed: civic education classes (e.g. traditional teaching, courses including practical approaches, etc.), democratic simulations (e.g. mock elections, debates, etc.) and immersions (e.g. internship with a deputy, community service, etc.). These educational interventions can be initiated by educational institutions, the government or non-governmental organizations (NGO).

Why it is important to conduct this review

Electoral participation of marginalized populations is an essential pillar to ensure legitimacy of democratic institutions and the consideration of citizens' interests. Nowadays, many OECD countries are faced with low turnout rates of certain discriminated groups. Policy-makers are looking for evidence-informed solutions to fix this democratic deficit.

Though there are many individual studies on the types of interventions we concentrated on, no study has yet systematically synthesized and compared the effects of educational and pedagogical interventions on electoral participation of marginalized populations. There is a lack of information regarding the impact of these interventions on turnout rates among marginalized people. The majority of studies take a global perspective by assessing the effects of pedagogical approaches on political attitudes in general rather than on voter turnout in particular. Thus, this systematic scoping review aims at providing reliable and structured results favouring the comparability of interventions.

Objectives

This knowledge synthesis aimed at evaluating the effectiveness of different learning methods such as active learning and civil education on electoral participation among marginalized populations. Our overarching goal is to provide global and reliable evidence informing the adoption of measures to overcome democratic deficits in Canada. Therefore, this review fills the need for evidence-based decision-making in organizations promoting democratic strength.

Methods

Search methods for identification of studies

Electronic searches

Literature searches were conducted using six common online databases from different academic disciplines (see Table 1).

TABLE 1
Online databases searched

Discipline	Resource
Education	• Educational Resources Information Center (ERIC)
Political science	• International Bibliography of the Social Sciences (IBSS) • Worldwide Political Science Abstracts
Interdisciplinary	• Érudit • Pascal et Francis • Persée

For each database, we applied the same search strategy. The search terms for the two French databases Érudit and Persée were translated while a bilingual search strategy was used for Pascal et Francis. The search strategy was based on two categories of concepts: "educational interventions" and "electoral participation" (see Appendix 1). For each category used, we developed a corpus of different search terms using controlled vocabulary and database's thesaurus. Quotation marks and asterisks were used to refine the searches. The search strategies were developed and applied by an information specialist with extensive experience in systematic literature reviewing.

Other searches

In order to make sure that the search strategy did not miss any relevant academic publications, additional searches were performed in the web-based engine *Google Scholar*. The reference list of all included studies were also screened, a practice called "branching". We also searched in the database *EBSCO Education Source*. The relevant publications found through these alternative methods were screened with the same inclusion and exclusion criteria as the initial studies.

Criteria for including studies in the review

Subject/outcomes

Studies had to report findings on the effectiveness of an intervention on voter turnout rates.

Interventions

The studies were included when they report findings on the effectiveness of civic education, experiential learning and/or active learning.

Target groups

The studies were included only if they report findings regarding marginalized populations. In the reviews, marginalized populations include women, youth, ethnic minorities, low-income people and Aboriginals (or First Nations). Studies that solely report the effects of interventions on the general population as a whole were excluded.

Countries

The review focuses on interventions taking place in at least one of the OECD countries, namely Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and the United States.

Findings for the national, subnational, regional and local levels were considered.

Date of publication

In compliance with the funder rule (i.e. SSHRC), only studies that were published since 2006 were included.

Evidence

The studies were included only when two of the co-authors (FB and SV) considered that the reported evidence was sufficiently strong and when there was enough information in the publication to apply the extraction codes.

Study design

The following study designs were considered in the review: randomized controlled field experiments, non-randomized controlled field experiments, controlled before-and-after studies, uncontrolled before-and-after studies, interrupted time series, longitudinal studies, cross-sectional studies, qualitative studies, and mixed-method studies.

Data collection and analysis

Selection of studies

After receiving the search results from the information specialist, bibliographic records were imported in the web-based systematic review software *EPPI-Reviewer 4*, which allows managing all the steps of a systematic review. Two reviewers (FB and SV) who achieved a A grade in the master's level course in systematic literature reviewing (Ouimet, Lapointe and Léon, 2015) first screened each title and abstract working independently. Studies incompatible with the predetermined inclusion criteria were excluded, but records that were considered irrelevant by only one of the reviewers were not automatically excluded; they were rather discussed in a meeting to meet an agreement. The reviewers then applied the same predetermined inclusion criteria on the full text of the studies that survived the first screening phase. Disagreements were resolved using the same procedure as for the screening on title and abstract.

Coding and numeric data extraction

A coding sheet was elaborated in order to extract relevant information. Coding disagreements were resolved by discussion during a meeting. Studies were coded independently by two reviewers (FB and SV) using the software *EPPI-Reviewer 4*. Data extraction fields are presented in Table 2.

TABLE 2
Data extraction fields

-
- Country
 - Unit of analysis
 - Sample size
 - Intervention (type, size, duration, etc.)
 - Outcome variable
 - Measurement frequency
 - Data source
 - Study design
 - Key findings
 - Results: statistical significance and effect size
 - Context of the intervention
 - Intervention's initiative
 - Constraint
-

Quality assessment

A risk of bias analysis was conducted after data extraction to evaluate the reliability of included studies. Each study included was evaluated using a list of questions related to the study protocol. These questions were used to assess criteria such as sampling methods, objectivity of the measures, accounting of confounding variables and the reporting of the confidence interval. The nature of the questions and their number vary according to the type of study (e.g. randomized controlled field experiment, before-and-after study, etc.). These critical appraisal checklists were adapted from existing tools (AMSTAR, CONSORT, Cochrane, etc.) and are used in a full semester master's level course in systematic literature reviewing (Ouimet, Lapointe et Léon, 2015). The quality assessment was conducted by two co-authors (FB and SV), each being assigned half of the included studies. Each reviewer then verified the assessment made by his colleague. Disagreements about ratings were resolved through discussions between the two reviewers.

Each question (criterion) included in a critical appraisal checklist is answerable using a three-point scale, one meaning a low-risk of bias and three a high risk of bias. Two points were allocated if the information provided in the publication regarding a criterion was uncertain or not applicable. The total amount of points and an average score were then calculated for every study for comparison purposes.

Finally, the GRADE approach was used to assess the overall quality of the evidence (Dijkers, 2013). The main intervention and outcome variables were grouped to determine whether the quality of the evidence was very low, low, moderate or high. The evidence was judged on four criteria: risk of bias, inconsistency of results, indirectness of evidence and imprecision. For each of those criteria, the overall quality was downgraded by one level for serious concerns and by two levels in case of very serious concerns.

Results

Bibliographic search

The search strategy was conducted on May 24th, 2017 by the information specialist. The searches in WPSA, IBSS, *Érudit*, *Persée*, *Pascal et Francis* and ERIC generated 1,569 results. On July 31st, 2017, we conducted additional searches in *EBSCO Educational Source* in order to capture studies from the field of education. During the searching process, we found a systematic review of the literature on the effectiveness of citizenship education courses to increase political participation (Manning and Edwards, 2014). We screened the reference list of this systematic review and selected studies that we did not capture through the other searches and that focus on voter turnout. After having removed all of the duplicates, 1,203 studies were eligible for the screening on title and abstract. From these studies, 1,105 studies were excluded, which left us with 98 studies that qualified for the full-text screening. From these studies, 89 studies were excluded. In total, nine studies were therefore included in the review.

Description of the studies

General overview

Of the nine studies included in the review, five focus on educational interventions that took place in the United States, two in the United Kingdom and two in Canada. It should be noted that the study designs used in the included studies vary considerably, as we included two longitudinal studies, one before-and-after study, two quasi-experimental studies, and four observational studies usually based on surveys. Of these nine studies, five include a control group that allows the comparison of results for individuals affected by the intervention and those who were unexposed (see Table 3 for the overall characteristics of the studies included in this review).

As for the outcome variable measured in the studies, we remained flexible in our selection criteria since there are many ways to evaluate electoral participation. Therefore, we included three studies that evaluate the impact of an intervention on the self-reported voter turnout in the last election (voted or not), four studies that have for outcome variable the self-reported intention of voting in the future, one that calculates the probability of voting, and finally one study which determines the electoral participation directly from electoral registries. Considering the large heterogeneity in outcome measurement, it was not possible to aggregate the results in a meta-analysis. Besides, included studies did not always report effect size or the statistical significance in a clearly manner. Only seven of the nine studies present this information.

Concerning the interventions per se, it can be noted that most of the studies evaluate the impact of civic education courses (eight out the nine studies). However, we should note that two of these civic education courses include an immersive dimension since students have to do community services. Two other courses evaluated include activities such as debates and discussions, while the four remaining courses are described as mostly traditional classes. Two studies assessing the effects of democratic simulations were included and only one focusing on the impact of immersions could be included in the review. Finally, all but one study only analyzes the effects of an educational intervention that took place in high schools.

FIGURE 1
Flow diagram

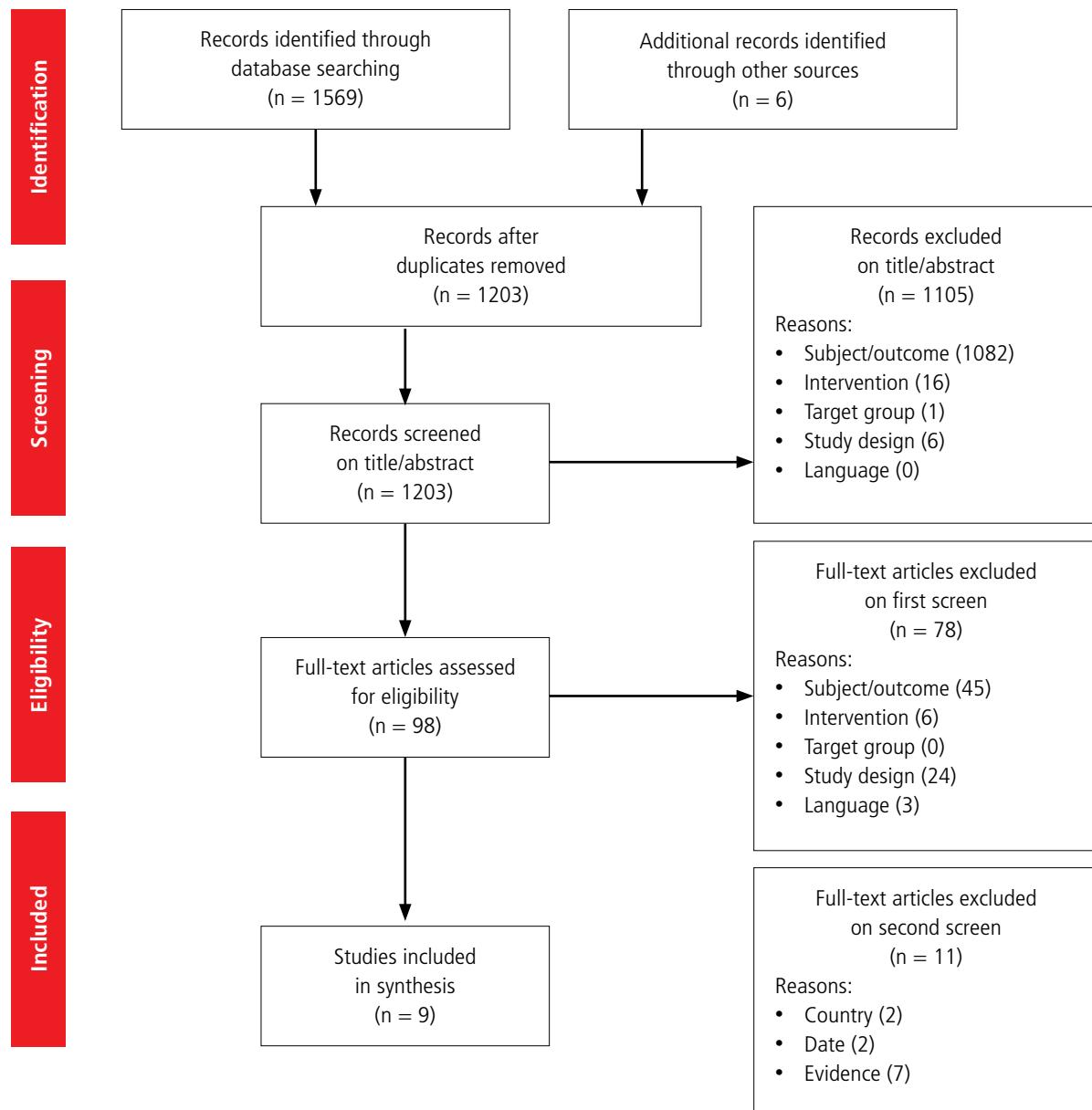


TABLE 3
Overall study characteristics

Study	Country	Population	Study design	Sample	Intervention	Outcome variable
Bachner (2010)	United States	NELS 1988: Eighth grade students NELS 2002: High school sophomores	Longitudinal study with a control group	NELS 1988: Students from 1052 public and private schools; NELS 2002: Students from 752 public and private schools	Civic classes	Probability of voting
Gershenson, Rainey and Rainey (2010)	United States	Students at the university level	Controlled before-and-after study	Intervention group: 28 students as well as two control groups	Citizens' Assembly on Critical Thinking about the United States (CACTUS): lectures, discussion boards and deliberations on institutional reforms	Intention to vote on a scale from 1 to 5
Henderson, Brown and Pancer (2012)	Canada	Students in high school (intervention exposure) Students in their second year of University (outcome measurement)	Quasi-experimental design with control group	1 250 students	Civic classes that include volunteering	Vote (declaration)
Kahne, Crow and Lee (2013)	United States	California: High school juniors; Chicago: Students in 9th, 10th and 11th grade	Quantitative observational study (survey)	California: 1 203 students; Chicago: 4 314 students	1. Courses with open discussions 2. Community service for school projects	Intention to vote
Keating and Janmaat (2016)	United Kingdom	Wave 1: 11-12 years old; Wave 3: 15-16 years old; Wave 5: 19-20 years old	Longitudinal study	746 students	Simulations (debating clubs, mock elections and school councils)	Vote (declaration)
Martens and Gainous (2013)	United States	Students in 9th grade (Mostly 14 years old)	Quantitative observational study (survey)	2 615 students	1. Traditional civic education classes 2. Active learning methods (role playing, writing letters to officials and guest visits)	Intention to vote

Study	Country	Population	Study design	Sample	Intervention	Outcome variable
Milner and Lewis (2011)	Canada	Students in 10th grade	Quantitative observational study with control group	Samples prepared by Elections Canada (number not specified)	Civic education classes	Vote (Electoral results per age category)
Pasek, Feldman, Romer and Jamieson (2008)	United States	Sudents at high school level	Quasi-experimental design with control group	487 students	Civic education classes combining theoretical and practical learning (service-learning and problem solving)	Vote (declaration): 2 points for people who voted, 1 point for people who did not but had the intention to and 0 point for people who did not vote
Tonge, Jeffery and Mycock (2012)	United Kingdom	11 to 25 years old	Quantitative observational study (survey)	1 102 people	Civic education classes	Likelihood to vote (Unlikely = 0 and Very or fairly likely = 1)

Detailed description of the interventions

A detailed description of the interventions assessed in the studies included in the review is presented in Table 4. The intervention examined in Bachner (2010) is a traditional civic education course in high school. The courses analyzed by the authors were non-mandatory and can be classified into four categories: American Government/Civic, American Problems, American Government & Economics and Other Government.

Gershenson *et al.* (2010) assess the impact of the Citizens' Assembly for Critical Thinking about the United States (CACTUS), a course offered at the Eastern Kentucky University. This course on institutional reforms lasted one semester and was essentially composed of lectures, debates, discussions and deliberations.

For their part, Henderson *et al.* (2012) evaluate the impact of a civic education course that was implemented in high schools following the initiative of the Ontario Ministry of Education (Canada). This compulsory course aimed at improving students' civic skills and increasing their knowledge about the constitution and charter of rights. The course also involves 40 hours of civic engagement.

In Kahne *et al.* (2013), the authors do not seek to determine the effect of one specific and standardized intervention. They rather observe, in a general manner, whether students who had civic education classes that included open discussions or community service were more likely to vote.

Keating *et al.* (2016) assess the impacts of school activities that might improve students' civic and democratic skills. Among the hands-on experiences studied, we can mention mock elections and debating clubs.

Just like Kahne *et al.* (2013), Martens and Gainous (2013) do not evaluate a specific civic education course. Instead they focus on the effects of different teaching methods for this particular subject. They evaluate the impact of traditional classes (use of a textbook, required reports, basic discussion, etc.) and active learning (role-playing, writing letters to officials and guest visits) over a school-year period.

The intervention studied by Milner and Lewis (2011) is the mandatory six-week course in Ontario named "Profile for Civics". This civic education course, which uses mostly traditional teaching methods, is intended for Grade 10 students and helps them understand how to become active citizens.

Pasek *et al.* (2008) evaluate the impact of the program Student Voices implemented in certain Philadelphia public high schools. This program uses an approach that combines community service with knowledge transmission about political institutions. This method is supposed to help students become better at understanding and solving problems in their community.

Finally, Tonge *et al.* (2012) examine whether the mandatory citizenship education course implemented in England has any effect on students' future electoral participation. This course uses a traditional teaching approach and mainly put emphasis on democracy.

TABLE 4
Intervention description

Study	Intervention type	Intervention duration	Context of intervention	Initiative	Mandatory
Bachner (2010)	Civic classes	At least 1 semester	School	School	No
Gershenson, Rainey and Rainey (2010)	Citizens' Assembly on Critical Thinking about the United States (CACTUS): lectures, discussion boards and deliberations on institutional reforms	1 semester, once a week for 16 weeks	School	School	No
Henderson, Brown and Pancer (2012)	Civic classes which include volunteering	Half a semester	Community organization	Government (Reform by Ontario Ministry of Education)	Yes
Kahne, Crow and Lee (2013)	1. Courses with open discussions 2. Community service for school projects	N/A	School and Community organization	N/A	N/A
Keating and Janmaat (2016)	Simulations (debating clubs, mock elections and school councils)	No defined duration	School (extracurricular activities)	Government	No
Martens and Gainous (2013)	1. Traditional civic education classes 2. Active learning methods (role playing, writing letters to officials and guest visits)	One school year	School	School	Yes
Milner and Lewis (2011)	Civic education classes	Six weeks	School	Government (Reform by Ontario Ministry of Education)	Yes
Pasek, Feldman, Romer and Jamieson (2008)	Civic education classes combining theoretical and practical learning (service-learning and problem solving)	Either 1 or 2 semesters	School	Government	N/A
Tonge, Jeffery and Mycock (2012)	Civic education classes	Statutory secondary school (11-16 years old)	School	Government	Yes

Quality assessment of included studies

Only one study included in the review presents a low risk of bias (Kahne, Crow and Lee, 2013). All of the other studies have a medium or uncertain level of risk of bias. One of the most frequent methodological weaknesses is the lack of objectivity in the outcome measures: in eight of the nine studies, electoral participation or intention to vote in a future election was self-reported. The declaration on intention of voting seems particularly problematic since it may lead to interpretation biases. Another potential risk of bias concerns sample construction. Indeed four studies (Henderson *et al.*, 2012; Tonge *et al.*, 2012; Pasek *et al.*, 2008; Martens and Gainous, 2013) use a non-probabilistic sampling method. Finally, three studies using surveys (Keating and Janmaat, 2016; Tonge *et al.*, 2012; Henderson *et al.* 2012) do not present participation rate or attrition.

TABLE 5
Risk of bias analysis

	Low risk of bias (3)	Medium risk of bias or uncertain (2)	High risk of bias (1)	Average / 3
Controlled before and after studies (9 questions)				
Gershenson, Rainey and Rainey Jr. (2010)	3	3	3	2.00
Longitudinal study (14 questions)				
Bachner (2010)	7	2	5	2.14
Keating and Janmaat (2016)	5	4	5	2.00
Quantitative observational study (12 questions)				
Kahne, Crow and Lee (2013)	7	4	1	2.50
Martens and Gainous (2013)	7	2	3	2.33
Milner and Lewis (2011)	4	4	4	2.00
Pasek, Feldman, Romer and Jamieson (2008)	6	2	4	2.17
Tonge, Jeffery and Mycock (2012)	3	5	4	1.92
Quasi experimental design (12 questions)				
Henderson, Brown and Pancer (2012)	5	2	5	2.00

Intervention effect

Bachner (2010) observes that students who take a civic course tend to have a higher probability of voting. Indeed, students who attended a half-year course had a higher probability of voting than other students ranging from 1.3% to 2.7%. The same phenomenon was observed for students who completed a one-year course as they had an increase in the probability of voting from 2.5% to 5.5% compared to students who did not attend any civics class. These results were statistically significant for three of the six elections under study.

Gershenson *et al.* (2010) show that attending the civic course named CACTUS had an effect of increasing the likelihood of voting in elections. However, the increase in the likelihood of voting was rather small (1.67%). In comparison, students who attended a simple political science course were only 0.27% more likely to vote after the course than before.

In their study on the impact of community service, Henderson *et al.* (2012) obtained results showing that volunteering has a positive impact on electoral participation. More precisely, 70% of the students who volunteered in high school voted, while the turnout rate for those who did not volunteer was 61%. However, a smaller difference in turnout rates was found between students who were mandated to volunteer (67.8%) and those who were not (71.9%).

TABLE 6**Thematic summary for interventions assessed in the studies included in the review**

Intervention	Number of interventions	Positive results	Significant results	Studies
Civic education classes				
Traditional teaching in high school	4	3	3	Bachner (2010); Martens and Gainous (2013); Milner and Lewis (2011); Tonge, Jeffery and Mycock (2012)
Traditional teaching in high school including practical activities (e.g. community service)	2	2	2	Henderson, Brown and Pancer (2012); Pasek, Feldman, Romer and Jamieson (2008)
Traditional teaching in high school including debates and discussions	1	1	1	Kahne, Crow and Lee (2013)
Traditional teaching in university including debates and discussions	1	1	N/A	Gershenson, Rainey and Rainey Jr. (2010)
Democratic simulations				
Active learning in high school (e.g. role playing, mock elections, debates)	2	1	1	Keating and Janmaat (2016); Martens and Gainous (2013)
Immersions				
Community service as high school project	1	0	0	Kahne, Crow and Lee (2013)

Kahne *et al.* (2013) test the impact of different interventions on electoral participation. It was found that civic education courses with open discussions have a positive and statistically significant impact on democratic attitudes, which included measure of intent to vote. The study shows that service learning has no significant effect on the intent to vote among students.

Keating and Janmaat (2016) stress the importance of taking into account the age of the students who attend a civic education course. Indeed, this kind of intervention seems to have a greater impact on older students. The authors observe that not having attended a citizenship course in year 11 has a negative and significant effect on the intention to vote. Moreover, political activities at school such as mock elections and debates have a larger effect on voting among students in Grade 11 than those in Grade 7. Authors assume that students are more receptive to this kind of learning starting from a certain age. This would explain why these activities do not have a lasting effect on students in Grade 7.

Martens and Gainous (2013) observe a positive and significant relationship between the intention to vote and having followed a traditional civic education course. However, the study shows that active learning does not seem to have an impact on the intention to vote. As opposed to Keating and Janmaat (2016)'s study, this study does not attempt to divide the effects by age.

In a study on the implementation of a civics course in Ontario (Canada), Milner and Lewis (2011) show that citizenship education has a minor effect on voter turnout among youth. In the 2004 election, young people who were eligible to vote and who completed the course voted at 38.2%, while people who did not follow the course voted in a proportion of 38.8%. As for the 2006 elections, young people who attended the course actually had a turnout rate that was 5 percentage points lower than for people who did not take the course. Therefore, this civics class does not seem to increase voting, it might in fact reduce it.

Pasek *et al.* (2008) find that Student Voices, a program combining community service and traditional civic education teaching in certain schools of Philadelphia, has a positive effect on turnout. Indeed, people who completed this course declared having voted in a greater proportion than people who attended a regular civics course, but this difference was not statistically significant. Therefore, Student Voices did not have a significant effect on the tendency to vote compared to traditional civic education courses. However, taking two semesters of this course had a positive and significant effect on voting compared to solely taking the course for one semester.

Finally, Tonge *et al.* (2012) find that citizenship education courses increase the intention to vote among young people. This effect was particularly large among students who had just completed the course and tends to decrease over time.

Discussion

Summary of main results

The vast majority of interventions assessed in studies included in the review (eight out of a total of eleven interventions) were civic education courses. This category of interventions includes courses taught at different scholar levels and with different educational methods. The included studies focus on a single segment of the population: youth.

For civic education courses, most of the interventions examined in the studies were effective in increasing voter turnout. Six of the eight interventions had a positive and statistically significant effect on voter turnout. One study finds a relationship between the age at which citizenship education class is taken and its impact on future electoral participation. These specific courses taken at a younger age seem to have a less lasting effect on electoral behaviour.

Mixed results were found for democratic simulations (active learning) since only one of the two studies that assessed this intervention shows positive and statistically significant results (Keating and Janmaat, 2016). The other study finds no significant relationship between the use of active learning methods and increased voter turnout among young people (Martens and Gainous, 2013).

Finally, only one study that assessed immersions (experiential learning) met our inclusion criteria (Kahne *et al.*, 2013). This study does not show any significant link between the use of these methods and electoral participation rate. However, considering that only one study on this subject has been identified, we cannot judge with full knowledge of the effectiveness of this type of teaching method.

In sum, the assessment of educational methods to increase voter participation among marginalized populations shows mixed results. Based on review findings, the most tested and proven method would be civic education courses. However, the small number of studies examining the effectiveness of the other types of methods precludes concluding that traditional methods are more effective than active ones.

Overall reviews' completeness and applicability

Nine studies were included the review. We are confident of the selected studies fairly good quality, particularly because of the diversity and robustness of their study designs. We covered all the types of intervention originally identified in the research protocol.

In addition, the interventions listed were conducted in a small number of countries (i.e. United States, United Kingdom and Canada). Besides, the findings are limited to one section of the population (Youth), which precludes any generalization of the review findings to other population segments. Nevertheless, the evidence summarized in the review allows us to adequately address part of the research questions originally set out in the protocol.

Quality of evidence

Seven of the nine studies include a statistical analysis of the effect of educational methods on voter turnout. The studies included in the review are of relatively high methodological quality. More precisely, we found two longitudinal studies and five studies with control groups. Large heterogeneity among studies in terms of research design and measurements precluded the conduct of a quantitative meta-analysis.

Despite the methodological quality of the included studies, the overall quality of the evidence is rather low. The inconsistency of the results and the interventions have led us to downgrade the quality as educational

interventions evaluated in the studies differ from one another. We also observe heterogeneity in research designs and target populations. The quality of the evidence also had to be downgraded by one level since most studies focus solely on the effect of interventions on young people. In addition, the quality of evidence had to be downgraded because most studies did not present confidence intervals, therefore preventing us from analyzing in detail the precision of the results. The weak quality of evidence of this systematic review means that the results should be interpreted with caution.

Limitations and potential biases in the review process

As in all systematic reviews, it is possible that the list of search terms used in our search strategy leads to potential selection bias. The search strategy used in the review may also not have been optimal, as the majority of the studies included were not found from searches in the bibliographic databases, but rather from external searches. Incidentally, some of these studies came from a systematic review of literature found through our search strategy.

Agreements and disagreements with other studies and reviews

Review findings provide an update and are coherent with those obtained by Manning and Edwards (2014). Our findings are complementary to this previous review insofar as these authors defined political participation more broadly than we have. In our review, we focused on voter turnout.

TABLE 7
Quality of evidence

Number of Studies	Study Design	Quality Assessment				Quality of Evidence
		Risk of Bias	Inconsistency of Results	Indirectness of Evidence	Imprecision	
Civic education courses						
8	Longitudinal study, quantitative observational study, before and after study, quasi experimental design	Serious limitations (-1)	Serious inconsistency (-1) Interventions differ from one another, different outcome measurements	Serious indirectness (-1) Interventions only target young people	Serious imprecision (-1) Confidence intervals not presented in all studies	Very low (1)
Democratic simulations						
2	Quantitative observational study and longitudinal study	Serious limitations (-1)	Serious inconsistency (-1) Interventions differ from one another	Serious indirectness (-1) Interventions only target young people	Serious imprecision (-1) Confidence intervals not presented	Very low (1)
Immersion						
1	Quantitative observational study	No serious limitation	N/A	Serious indirectness (-1) Interventions only target young people	Serious imprecision (-1) Confidence intervals not presented	Low (2)

Conclusion

Implications for practice and policy

There seem to be a difference in effectiveness between types of educational interventions to increase voter turnout. The studies included in the review do not allow concluding that new teaching methods such as active learning and experiential learning are effective ways of increasing electoral participation among young people. However, traditional courses of civic education have shown promising results. Therefore, decision makers who might be interested in investing in the development of citizenship education should also be investing in impact evaluation. Finally, some research findings suggest that decision makers should take the age factor into account, as we found indications that the effect of citizenship education on voter turnout might depend on the age at which courses are taken. Review findings suggest that the most lasting effects on electoral participation are recorded among the students who are close to becoming registered electors.

Implications for research

We found mixed effects for the different types of educational interventions. However, the small number of studies on new teaching methods (active learning and experiential learning) prevents us from comparing them with confidence in terms of their effectiveness. More rigorous evaluations of these new methods are needed. Also, to our knowledge, there is no published peer-reviewed literature on educational interventions aimed at increasing the voter turnout of populations beyond young people. Further research on these populations is needed.

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APPENDIX 1

Search strategy

WPSA (ProQuest)

Conducted on May 24th 2017

#	Request	Results
S1	TI(((citizen* or civil or "experience based") N/3 education) or ((experien* or interactive or active or informal or action or activity or "hands on") N/3 learning)) OR AB(((citizen* or civil or "experience based") N/3 education) or ((experien* or interactive or active or informal or action or activity or "hands on") N/3 learning))	1 888
S2	TI("turn out" or "turnout" or ((political or electoral or vot*) N/3 (participation or engagement or behavior or behaviour or attitude))) OR AB("turn out" or "turnout" or ((political or electoral or vot*) N/3 (participation or engagement or behavior or behaviour or attitude))) OR SU.EXACT("Voter Turnout" OR "Political participation")	24 563
S3	S1 AND S2	158
S4	Limite Anglais et français	144

IBSS (ProQuest)*Conducted on May 24th 2017*

#	Request	Results
S1	TI(((citizen* or civil or "experience based") N/3 education) or ((experien* or interactive or active or informal or action or activity or "hands on") N/3 learning)) OR AB(((citizen* or civil or "experience based") N/3 education) or ((experien* or interactive or active or informal or action or activity or "hands on") N/3 learning)) OR SU.EXACT("Active learning" or "Experiential learning" or "Interactive learning")	6 924
S2	TI("turn out" or "turnout" or ((political or electoral or vot*) N/3 (participation or engagement or behavior or behaviour or attitude))) OR AB("turn out" or "turnout" or ((political or electoral or vot*) N/3 (participation or engagement or behavior or behaviour or attitude))) OR SU.EXACT("Voter Turnout" OR "Political participation" or "Political Behavior" or "Voting Behavior")	38 534
S3	S1 AND S2	158
S4	Limite Anglais et Français	142

Érudit et Persée (Érudit)

Conducted on May 24th 2017

#	Request	Results
1	<p>Titre, résumé, mots-clés : (intervention* OR strategie* OR mesure* OR solution* OR implementation OR ((citoyen* OR civil*) AND educat*) OR (apprentissage AND (interacti* OR inform* OR actif* OR experient*)))</p> <p>ET Titre, résumé, mots-clés : (genre* OR femme* OR feminis* OR sexe* OR pauvre* OR pauperis* OR "faible revenu" OR defavorise* OR noir* OR "afro-americain" OR "afro-americains" OR asiatique* OR immigrant* OR autochtone* OR "premieres nations" OR indien* OR amerindien* OR minorite* OR marginalise*)</p> <p>ET Titre, résumé, mots-clés : ((participation OR mobilisation OR comportement* OR engagement OR attitude)AND (scrutin OR electoral* OR election* OR suffrage OR politique))</p> <p>ET Titre, résumé, mots-clés : (amelior* OR aggrav* OR degrad* OR augment* OR diminu* OR reduction* OR redui* OR efficac* OR efficien* OR impact* OR effet* OR evalu*)</p>	177

Francis (Pascal et Francis en accès libre – CNRS)

Conducted on May 24th 2017

#	Request	Results
1	(title.*: (((citoyen* OR citizen* OR civil* OR "experience based") AND educat*) OR ((apprentissage OR learning) AND (interacti* OR inform* OR actif* OR active OR experient* OR action OR activity OR "hands on")))) OR abstract.*: (((citoyen* OR citizen* OR civil* OR "experience based") AND educat*) OR ((apprentissage OR learning) AND (interacti* OR inform* OR actif* OR active OR experient* OR action OR activity OR "hands on"))))) AND (title.*: (((participation OR mobilisation OR comportement* OR engagement OR attitude OR behavior OR behaviour) AND (scrutin OR electoral* OR election* OR suffrage OR political OR politique)) OR turnout OR "turn out") OR abstract.*: (((participation OR mobilisation OR comportement* OR engagement OR attitude OR behavior OR behaviour) AND (scrutin OR electoral* OR election* OR suffrage OR political OR politique)) OR turnout OR "turn out")))	824

ERIC (OVID)

Conducted on May 24th 2017

#	Request	Results
1	((((citizen* or civil or "experience based") adj3 education) or ((experience* or interactive or active or informal or action or activity or "hands on") adj3 learning) or intervention* or strategy or strategies or measures or solution* or implementation).ti,ab. or citizenship education/ or experiential learning/ or active learning/ or informal education/)	340 542
2	(("turn out" or "turnout" or ((political or electoral or vot*) adj3 (participation or engagement or behavior or behaviour or attitude))).ti,ab. or political attitudes/ or voting/)	8 967
3	((gender* or woman or women or female or feminis* or sex or poor* or underprivileged or (low* adj3 (income or class)) or pauper* or disadvantaged or youth or young or immigrant* or ethnic* or (cultur* adj3 communit*) or "foreign born" or blacks or "african american*" or latino* or asian* or "first nations" or indian* or "native american*" or minorit* or marginalized).ti,ab. or sex/ or females/ or economically disadvantaged/ or low income groups/ or exp disadvantaged/ or immigrants/ or exp ethnic groups/ or african americans/ or african american community/ or asians/ or asian americans/ or arabs/ or hispanic americans/ or blacks/ or indigenous populations/ or youth/ or young adults/ or minority groups/)	363 350
4	((Improve* or unimproved* or decrease* or increase* or reduce* or reduction* or enhanc* or efficiency or efficacy or impact* or effect* or ineffective or evaluat* or assess*).ti,ab. or efficiency/ or program evaluation/ or program effectiveness/)	772 940
5	1 AND 2 AND 3 AND 4	306
6	limit 5 to ((english or french)	282

Overall Search Results

Database	Results	Total
WPSA	144	
IBSS	142	
Érudit	177	1 569
Francis	824	
ERIC	282	

APPENDIX 2

Results for studies included in the review

Study	Intervention	Outcome variable	Key findings		Statistically significant results
Bachner (2010)	Civic classes	Probability of voting	Students having followed a half-year course have a higher probability of voting than students who have not. The differences in probability of voting are: 1992: 2.3%* 1993-94: 2.6%* 1996: 1.6% 1998-2000: 2.7%* 2004: 1.7% 2004-2006: 1.3%	Students having followed a year course have a higher probability of voting than students who have not. The differences in probability of voting are: 1992: 4.5%* 1993-94: 5.2* 1996: 3.2% 1998-2000: 5.5%* 2004: 3.4% 2004-2006: 2.5%	Positive and significant for 3 elections out of 6
Gershenson, Rainey and Rainey (2010)	Citizens' Assembly on Critical Thinking about the United States (CACTUS): lectures, discussion boards and deliberations on institutional reforms	Intention to vote on a scale from 1 to 5	Average likelihood of voting CACTUS students – Before: 4.800 – After: 4.880 – % change: 1.67 Political science students – Before: 4.674 – After: 4.686 – % change: 0.27	Forensics students – Before: 4.615 – After: 4.436 – % change: -5.83	N/A
Henderson, Brown and Pancer (2012)	Civic classes which include volunteering	Vote (declaration)	Proportion of students that voted in the 2004 federal election Volunteered: 70%* Did not volunteer: 61% Among high school volunteers: Non-mandatory: 71.9% Mandatory: 67.8%		Positive and significant only for volunteering
Kahne, Crow and Lee (2013)	1. Courses with open discussions 2. Community service for school projects	Intention to vote	Courses with open discussions: 0.26*** Service learning: -0.1	Positive and significant for courses with open discussions and non-significant for service learning	

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Keating and Janmaat (2016)	Simulations (debating clubs, mock elections and school councils)	Vote (declaration)	<p>Electoral participation: Year 7 school based political activities: 0.167 (t-ratio = 0.93) Year 11 school based political activities: 0.286* (t-ratio = 2.35)</p> <p>Traditional citizenship education: Year 7: 0.010 (t-ratio = 0.05) Year 11: 0.042 (t-ratio: 0.22)</p> <p>No citizenship education: Year 7: -1.06* (t-ratio = -2.08) Year 11: -1.021* (t-ratio = -2.11)</p>	<p>Positive and significant for political activities during year 11 (15-16 years old). Absence of citizenship education has a significant negative effect on electoral participation.</p>
Manning and Edwards (2014)	Civic classes (different modalities)	Political participation (Vote in an election, register to vote, electoral indicators, canvassing, sign a petition, etc.)	<p>The authors obtain mixed results among their included studies concerning the effectiveness of civic education courses on voting.</p> <ul style="list-style-type: none"> – Bers and Chau (2010): No significant effect – McDevitt and Kiousis (2006): No significant effect – Pasek <i>et al.</i> (2008): No significant effect – Centre for Civic Education: Positive effect, but no statistical test – Gershenson <i>et al.</i> (2010): Positive effect for political science students (significant), but no significant effect for other intervention classes – Callahan <i>et al.</i> (2008, 2010): No significant effect for native-born students but a positive significant effect for children from immigrants' parents – Bachner (2010): Positive significant effect 	N/A
Martens and Gainous (2013)	1. Traditional civic education classes 2. Active learning methods (role playing, writing letters to officials and guest visits)	Intention to vote	<p>Intention to vote:</p> <ul style="list-style-type: none"> – Traditional teaching: 0.27*** (Odds ratio: 1.31) – Active learning: -0.03 	Positive and significant for traditional teaching and non-significant for active learning

Study	Intervention	Outcome variable	Key findings	Statistically significant results
Milner and Lewis (2011)	Civic education classes	Voter turnout (Electoral results per age category)	<p>2004 general election: Age 18 - 19.5 (Affected by the reform): – Ontario: 38.2% (+/- 7.9) – Other provinces: 37.1% (+/- 2.5) – Canadian average: 37.5% (+/- 3.4) Age 19.5 - 21.5: – Ontario: 38.8% (+/- 6.8) – Other provinces: 34.5% (+/- 2.9) – Canadian average: 36.1% (+/- 3.1)</p>	<p>2006 general election Age 18 - 20.1 (Affected by the reform): – Ontario: 41.8% (+/- 4.3) – Other provinces: 40.2% (+/- 3.4) – Canadian average: 40.8% (+/- 2.6) Age 20.1 - 25.1: – Ontario: 46.8% (+/- 8.9) – Other provinces: 40.0 (+/- 4.2) – Canadian average: 42.5% (+/- 4.2)</p>
Pasek, Feldman, Romer and Jamieson (2008)	Civic education classes combining theoretical and practical learning (service-learning and problem solving)	Vote (self-reported): 2 points for people who voted, 1 point for people who did not but had the intention to and 0 point for people who did not vote	Any number of semester vs. 0 coefficient: 0.024 2 semesters vs. 1 coefficient: 0.059+ Linear exposure coefficient: 0.051+ (+: p < 0.10)	Positive and significant
Tonge, Jeffery and Mycock (2012)	Civic education classes	Likelihood to vote (Unlikely = 0 and Very or fairly likely = 1)	r = -0.31 (p < 0.01) Age 22-25 (0) 19-21: -0.33 16-18: -1.13** 14-15: -2.15*** 	Positive and significant

