Title
Effects of school-based outdoor education programmes on students’ health, physical activity, social and learning behaviour: A systematic review protocol

Identification
Protocol of a systematic review

Registration
PROSPERO Number: CRD42016033002

Authors

Corresponding Author:
Christoph Becker, Technical University of Munich, Department of Sport and Health Sciences

Mailing address:
Technical University of Munich, Department of Sport and Health Sciences, Georg-Brauchle-Ring 60/62, 80992 München

E-Mail address: chris.becker@tum.de

Additional authors:
Gabriele Lauterbach, Technical University of Munich, Department of Sport and Health Sciences, gabriele.lauterbach@tum.de; Mrs Lauterbach will screen all identified titles and access the risk of bias in included studies.

Dr Ulrich Dettweiler, Technical University of Munich, Department of Sport and Health Sciences, ud@tum.de; Dr Dettweiler will supervise the research.

Dr Sarah Spengler, Technical University of Munich, Department of Sport and Health Sciences, sarah.spengler@tum.de; Dr Spengler will supervise the research.

Professor Dr Filip Mess, Technical University of Munich, Department of Sport and Health Sciences, filip.mess@tum.de; Prof Mess will supervise the research.

The corresponding author Mr Christoph Becker is the guarantor of the review.

Support:
The PhD position of the corresponding author is founded by Dietmar Hopp Foundation, Project Number: 23016007
Rationale

School-based and curriculum-based outdoor education programmes can have several positive effects on students’ health status, physical activity levels, social competences and relations, learning motivation and academic achievement. However, the abstract concept of ‘outdoor education’ includes several different terms: outdoor education, learning outside the classroom, udeskole/uteskole, expeditionary learning, outdoor adventure education, experiential learning, place-based education, forest school, nature school, Draußenschule, etc. depending on countries and cultures. These terms are often understood in different ways and existing reviews focusing on ‘outdoor education programmes’ often considered only some terms or included only programmes conducted in a certain geographical area.

Objective

The purpose of this systematic review is to determine possible effects of school-based and curriculum-based outdoor education programmes on students’ health, physical activity, learning and social behaviour/social interactions and academic achievement.

The review has a focus on studies on children and adolescents (5 - 18 years) of all school types with regular weekly or bi-weekly classes in a natural or cultural environment outside the school building with at least four hours of compulsory educational activities per week with a duration with at least two months.

Eligibility criteria

We will include studies with all type of study designs, with our without a control group, reporting any type of curriculum-based outdoor education programme with at least one outcome, published or in press in peer-reviewed journals and available in the English or German language. We will exclude studies evaluating non-school or non-curriculum-based outdoor education programmes and studies regarding outdoor adventure education programmes. No restriction to publication period are given.

Information sources

We will search the following electronic bibliographic databases:

- PubMed;
- Green File, via EBSCO;
- PsycARTICLES, via EBSCO;
- Education Scource, via EBSCO;
- ERIC, via EBSCO;
- SPORTDiscus, via EBSCO;
- SociINDEX, via EBSCO;
- Scopus;

Search strategy

Following words will be used in different search term combinations, depending on database specifications:

Objective: outdoor education, outdoor learning, learning outside the classroom, experiential learning, expeditionary learning, udeskole, uteskole, friluftsliv, forest school, nature school,
environmental education, place-based education, Draußenschule, Draussenschule, out-of-classroom, outdoor teaching

Setting: school, curriculum

We will supplement our search by checking the reference lists of all included articles.

The following search terms will be used taking into account specifications within applied databases and according certain filters:

Language: English and/or German; Document Type: Journal Article; Source Type: peer-reviewed Journal; Published or in Press; Publication period: unlimited start date;

Pubmed:


Education Scourse, PsychINFO, SportDiscuss, SOCIndex, via EBSCO:

(TI "outdoor* education" OR AB "outdoor* education" OR TI "outdoor* learning" OR AB "outdoor* learning" OR TI "learning outside the classroom" OR AB "learning outside the classroom" OR TI "experiential learning" OR AB "experiential learning" OR TI "expeditionary learning" OR AB "expeditionary learning" OR TI udeskole OR AB udeskole OR TI uteskole OR AB uteskole OR TI "forest school" OR AB "forest school" OR TI "nature school" OR AB "nature school" OR TI Draußenschule OR AB Draußenschule OR TI Draussenschule OR AB Draussenschule[Title/Abstract] OR "environmental* education" OR AB "environmental* education" OR TI "place-based education" OR AB "place-based education" OR TI "out-of-classroom" OR AB "out-of-classroom" OR TI "outdoor* teaching" OR AB "outdoor* teaching") AND (TX curric* OR TX school)

ERIC and GREENFile, via EBSCO:

(TI "outdoor* education" OR AB "outdoor* education" OR TI "outdoor* learning" OR AB "outdoor* learning" OR TI "learning outside the classroom" OR AB "learning outside the classroom" OR TI "experiential learning" OR AB "experiential learning" OR TI "expeditionary learning" OR AB "expeditionary learning" OR TI udeskole OR AB udeskole OR TI uteskole OR AB uteskole OR TI "forest school" OR AB "forest school" OR TI "nature school" OR AB "nature school" OR TI Draußenschule OR AB Draußenschule OR TI Draussenschule OR AB Draussenschule[Title/Abstract] OR "environmental* education" OR AB "environmental* education" OR TI "place-based education" OR AB "place-based education" OR TI "out-of-classroom" OR AB "out-of-classroom" OR TI "outdoor* teaching" OR AB "outdoor* teaching") AND (TI curric* OR AB curric* OR TI school OR AB school)
Scopus:

TITLE-ABS("outdoor* education" OR "outdoor* learning" OR "learning outside the classroom" OR "experiential learning" OR "expeditionary learning" OR udeskole OR uteskole OR "forest school" OR "nature school" OR Draußenschule OR Draussenschule OR "environmental* education" OR "place-based education" OR "out-of-classroom" OR "outdoor* teaching") AND ALL(school* or curric*) AND ( LIMIT-TO(DOCTYPE,"ar" ) OR LIMIT-TO(DOCTYPE,"re" ) OR LIMIT-TO(DOCTYPE,"ip" ) ) AND ( LIMIT-TO(LANGUAGE,"English" ) OR LIMIT-TO(LANGUAGE,"German" ) ) AND ( LIMIT-TO(SRCTYPE,"j" ) )

Study records

Data management

Throughout the review process the literature management software EndNote X7.4 will be used to manage records and data.

Selection process

Two reviewers (CB/GL) will screen independently all titles of studies identified for eligibility according to the criteria. Studies not meeting the eligibility criteria will be excluded. The abstracts of included studies will be screened by the same procedure. Remaining studies will be assessed based on their full text for inclusion or exclusion using the criteria indicated above. Any disagreement between reviewers concerning the eligibility of particular studies will be resolved through discussion or by involving a third reviewer where necessary.

Data collection process

For each included study, one reviewer (CB) will extract data from full text articles using a piloting form regarding required items (see Data items). If required information cannot be obtained from full texts the corresponding authors will be asked to provide this information.

Data items

Details for the following datasets will be extracted if possible:

1) Study: citation, author, date of publication, journal, study design
2) Population: age, gender, sample size, nationality of participants
3) Methodology and analytic process
4) Outcomes and times of measurement
5) Main results of the study and barriers
6) Information for assessment of the risk of bias
7) Source(s) of research/project funding and potential conflicts of interest
Outcomes and prioritisation

Main outcomes:
students’ health, physical activity, learning behaviour, social behaviour

Additional outcomes:
students’ academic achievement and any other reported effects

Risk of bias in individual studies

Two reviewers (CB/GL) will independently assess the risk of bias in included studies using the CASP (Critical Appraisal Skills Programme, 2015) appraisal tools. Any disagreement between reviewers concerning methodological quality will be resolved through discussion or by involving a third reviewer where necessary. We will not exclude studies in general on the grounds of poor methodological quality. However, weaknesses in used methods and in the study design will be identified and we will therefore interpret the reported results with caution.

Data synthesis

A quantitative synthesis of the findings from the included studies concerning type of intervention, population, reported outcomes and intervention content will be provided in tables. Due to an anticipated heterogeneity of study designs and measured outcomes we will provide narrative and, if possible, quantitative summaries of reported effects for each included study calculating risk ratios/standardised mean differences, respectively.

Options for meta-analysis are limited because of the range of different outcomes measured across the anticipated small number of existing studies.

Confidence in cumulative evidence

The strength of the body of evidence will be assessed through an independent literature search and rating of reported major outcomes within included studies. Therefore, we only include peer-reviewed journal articles published or in press available in the English or German language and no grey literature or reports. However, it has to be assumed that certain research articles are not published in English or German and we will not be able to translate and include these articles.