



## The TEACHOUT intervention TIDieR checklist<sup>1</sup>

### 1. Brief name

TEACHOUT

### 2. Why

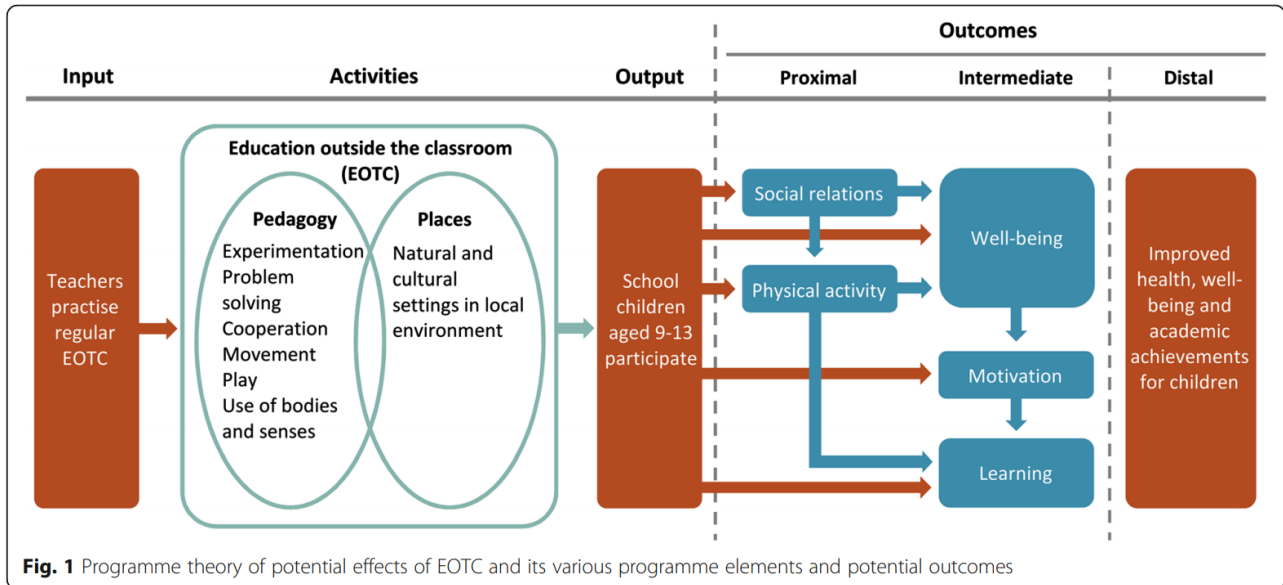
The TEACHOUT intervention describes as a specific and regular use of education outside the classroom (EOtC) (i.e. *udeskole*). Regular use of EOtC is defined as one day weekly or fortnightly. A day is defined by a schoolday, e.g. lasting from 8:00 to 15:00 hours.

Generally, EOtC targets primary and lower secondary school children and is characterized by curriculum-based educational activities practiced outside the school buildings in natural (e.g. a park or forest) or cultural (e.g. a museum or library) settings. Other examples are public open spaces, visits to campagnas, or on school property. EOtC has typically been practiced in natural settings with the aim to teach abstract academic skills and concepts in a more hands-on and illustrative way. EOtC is characterised by collaborative, action-centred, experiential, inquiry based, and thematic learning processes involving outdoor teaching and learning activities in agreement with teachers' curricular obligations. These activities aim to promote learning and wellbeing through practical activities and the use of one's body and senses in authentic situations, and through interaction between one's actions and thoughts. Examples could be measuring and calculating a tree's volume in mathematics, teaching language skills through poetry writing in and about nature, and teaching history or religion while visiting places of historic significance. Other examples include the use of the properties in the local neighborhood to teach geometry (e.g., identifying square or triangular objects, ref.), writing poems in and about the city, investigating local history in the neighborhood, doing STEM education at science centers, or learning about biological and chemical processes through school gardening.

The program theory proposed to explain the effects on participating children, considered to be consequences of EOtC practice, involves changing the physical setting to allow for different use of pedagogies, as described above. In this way, regular use of EOtC is proposed to provide a motivating school setting that facilitates learning processes in children. For more information, please see the TEACHOUT study protocol ([Nielsen et al., 2016](#)).

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<sup>1</sup> <https://www.equator-network.org/wp-content/uploads/2014/03/TIDieR-Checklist-PDF.pdf>



Source: [Nielsen et al., 2016](#).

### 3. What (materials)

At a two-day course, teachers who had accepted to teach with the use of EOTC on a regular basis for one school year is introduced to how to adopt these practices to teach curriculum-based lessons outside the school buildings. One hour of homework in advance of the course is planned, mainly videos on EOTC pedagogy and didactics. Additionally, teachers are provided sheets, and PDF-versions, with references to materials for inspiration, such as books, web pages, videos (all in Danish).

### 4. What (procedures)

Individual information meetings on content and teachers' obligations as participants in the TEACHOUT intervention for all participating teachers is held (physical or online) at each school prior to the TEACHOUT intervention school year.

At the two-day course prior to the TEACHOUT intervention school year, teachers are provided with knowledge and understanding of the practice and theory of EOTC. The course included theoretical lectures, supplemented by illustrative examples in workshops and videos, plenum discussions on local implementation on the subjects the participating teachers teaches. The course is supplemented by two one-hour inspirational webinars during the first half of the school year.

### 5. Who provides

Workshops and presentations are held by experienced Danish EOTC teachers with at least five years of experience in using EOTC and teacher education specialists.

Participating teachers (1-2 per class) teaches the actual EOTC in the classes throughout the intervention school year by themselves.

### 6. How

The two-day course is delivered to the participating EOTC teachers face-to-face and in groups. Information meetings prior to the start of the intervention is delivered face-to-face or online in groups of 1-6 teachers

at a time. Webinars is held online with teaches logging-in alone or sitting two at the time in front of the screen.

Actual EOtC sessions is provided to the pupils by their teachers with the classroom as starting point.

## **7. Where**

The two-day course is held at a cultural institution facility or at a nature school. The webinar is held online, with course providers placed at their institution and with teacher sitting at home or at their workplace.

Teacher using EOtC is allowed to freely choose the subject(s) to teach outside the school buildings and the place(s), and eventual mode of transportation, for each EOtC session.

## **8. When and how much**

EOtC class teachers is asked to provide the class with an average of at least 300 min of EOtC practice through one or two weekly sessions, during the school week, Monday through Friday) during the full school year (mid-August through the end of June).

The amount of exposure of 300 min weekly EOtC as minimum is selected so that it constitutes as a substantial contributor to children's school time, and to separate the practice from occasional field trips. The extent of the TEACHOUT intervention is equivalent to approximately 15% of primary school hours on a weekly basis or equivalent to 7% of children's waking hours Monday through Friday.

Teachers is instructed to include time spent on briefing before and de-briefing after the educational activities outside the school's buildings when reporting minutes of EOtC practice.

## **9. Tailoring**

N/A

## **10. Modifications**

N/A

## **11. How well (planned)**

A one school year implementation (2014-2015) of the TEACHOUT intervention have been evaluated as a part of the Danish TEACHOUT study – a mixed methods, quasi-experimental, cross-disciplinary study that aimed to understand how regular use of EOtC influenced physical activity, learning, social relations, motivation, and well-being among school participants attending grades three to six (9-13 years old) (please, see TEACHOUT intervention program theory, *Ad. 2 "Why?"*). In the study, an assigned intervention group was compared with a matched control group consisting of parallel classes. Comparison class teachers was asked not to regularly practice EOtC with the class during the same period.

The two-day course was organized by the TEACHOUT research group (for contact information, please see the TEACHOUT study protocol, [Nielsen et al., 2016](#)).

Within the Danish school setting, each school is allowed so-called "freedom of methods" to align with ministerial-decided curricula targets for each subject.

## 12. How well (actual)

The TEACHOUT study, monitoring of the teachers' use of EOtC was done at class-level with an internet-based registration tool on weekly basis for one school year. For every school day, teachers self-reported whether their class had received EOtC. If 'yes', additional options were given, for instance, choosing the type of place where the teaching was located outside the school buildings.

During one week, once during the evaluation of the TEACHOUT intervention (The TEACHOUT study, the school year 2014-2015), three pupils in each participating class were given time to write class-level diaries.

In the TEACHOUT study it was found that national language and science education was the two subjects most often taught during the EOtC sessions. Physical education and mathematics were the second most used subjects. Multidisciplinary teaching was used in several sessions.

EOtC sessions were mostly conducted in nature and green settings (approx. between 1.5 and 1.8 hours a week). The second most used setting was cultural institutions (approx. 1 hour per week). Setting-exposure time included time used for transportation. Sometimes, various settings were used during an EOtC session.

On average, 28 TEACHOUT intervention classes in the EACHOUT study used EOtC 4.72 hours (SD=  $\pm 1.19$  hours) and 1.29 sessions (SD=  $\pm 0.49$  sessions) per week during the period of the monitoring (38 weeks of a total of 180 possible school days, excluding weekends and holidays).

In comparison, 20 control group classes, who were not intended to use EOtC, used EOtC 1.64 hours (SD=  $\pm 1.73$  hours) and 0.65 sessions (SD=  $\pm 0.53$  sessions) per week during the same period.

The amount of teaching hours used for EOtC sessions each week were on average positive associated with amount of sessions implemented.

Variation in study sample sizes and exposure to EOtC varies across outcomes (please, see individual published studies below). Overall, the sample in the TEACHOUT study included children across 3<sup>rd</sup> to 6<sup>th</sup> grade (9-12 years of age) mostly from a middle to high socioeconomic background. The intervention group teachers had mostly little or no previously experience with regular use of EOtC.

In the TEACHOUT study, it was found that

- The TEACHOUT intervention was associated with better reading competences, regardless of gender, and regardless of the subjects taught in EOtC ([Otte et al., 2019a](#)).
- One year of EOtC mathematics teaching, corresponding to 17.9% of mathematics lessons was not found to be associated with a change in mathematics skills ([Otte et al., 2019b](#)).
- The TEACHOUT intervention was associated with better pro-social behaviour, independent of gender or social background. ([Bølling et al, 2019a](#)).
- The TEACHOUT intervention was not associated with any changes in pupils' emotional symptoms, hyperactivity/inattention, or peer relationship problems. For pupils of low socio-economic status, the TEACHOUT intervention was associated with less hyperactivity-inattention problems and less peer problems ([Bølling et al, 2019a](#)).

- The TEACHOUT intervention was associated with more new in-class dyadic peer friendship-like affiliations and transportation time during EOtC sessions was associated with maintaining dyadic peer friendship-like affiliations ([Bølling et al., 2019b](#)).
- The TEACHOUT intervention was associated with better intrinsic school motivation, independent of gender and social background. The association was strongest for pupils with the highest level of intrinsic motivation at the beginning of the intervention ([Bølling et al., 2018](#)).
- Regular practice of EOtC was positively associated with objectively measured PA; for boys, moderate-to-vigorous PA (MVPA) was higher on a weekly basis, and light-intensity PA (LPA) was higher among boys and girls compared to normal schooldays without physical education lessons (Schneller et al., [2017a](#), [2017b](#)).
- EOtC in nature and green areas appears on average to result in 7% less sedentary behavior and 6% more light physical activity during the school day compared to school days with outdoor school at cultural institutions or companies ([Bølling et al., 2021](#)).

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## Changes made to the TEACHOUT intervention TIDieR checklist between version 1.00.00 to version 2.00.00

### *Introduction:*

What is meant by a “day” explicated: “A day is defined by a schoolday, e.g. lasting from 8:00 to 15:00 hours.”

### *2. Why:*

Examples of EOtC added: “Other examples are public open spaces, visits to campagnas, or on school property.”; “Other examples include the use of the properties in the local neighborhood to teach geometry (e.g., identifying square or triangular objects, ref.), writing poems in and about the city, investigating local history in the neighborhood, doing STEM education at science centers, or learning about biological and chemical processes through school gardening.”

### *3. What (materials):*

*Seminar* changed to a *course*.

The length of the intervention added: “for one schoolyear”.

Empathized that EOtC concerns teaching curriculum-based lessons outside the school buildings – not just outside the classroom.

Video materials and homework added: “One hour of homework in advance of the course is planned, manly videos on EOtC pedagogy and didactics”.

The lower limit for the use of EOtC registered in monitoring ("a minimum of 45 minutes") omitted. Likewise, information about the 2014 Danish School reform omitted ("The cut-point of 45 minutes was chosen as a new public school reform was initiated simultaneously with the evaluation of the TEACHOUT intervention (August 2014). Among other objectives, the school reform included requirements of 45 min of daily physical activity on average for children.")

#### 4. *What (procedures)*

The mode of meetings added "(physical or online)".

Description of the course adjusted: "At the two-day course prior to the TEACHOUT intervention school year, teachers are provided with knowledge and understanding of the practice and theory of EOtC. The course included theoretical lectures, supplemented by illustrative examples in workshops and videos, plenum discussions on local implementation on the subjects the participating teachers teaches. The course is supplemented by two one-hour inspirational webinars during the first half of the school year."; [previous] "practical workshops, had supervised yearly planning of use of EOtC in their teaching in groups and subsequent presentations of examples with discussion, and attended a 30-minute presentation on how to use selected inspirational websites ([www.skoveniskolen.dk](http://www.skoveniskolen.dk) and [www.udeskole.dk](http://www.udeskole.dk)). The workshops included three 1.5 hours sessions showcasing examples of EOtC practice and sharing of thoughts and experiences by instructors and subsequent discussion of EOtC in subjects, including mathematics, Danish and natural science."

Information about course webinars added: "The course is supplemented by two one-hour inspirational webinars during the first half of the school year."

#### 5. *Who provided*

Who provides the course is supplemented by "and teacher education specialists".

#### 6. *How:*

"Online" added to modes of meetings.

Group size for Information meetings changed from 2-10 to 1-6.

Information on webinars added: "Webinars is held online with teaches logging-in alone or sitting two at the time in front of the screen."

#### 7. *Where:*

Generic location for the course is added "cultural institution facility or at a nature school" and specific place omitted ([previous] "The Forest and Landscape College is situated in Nødebo and includes a canteen, teaching rooms, workshops, conference and accommodation facilities, and a number of outdoor facilities, such as shelters, fire cabin, and nature playground. A wide variety of these facilities were used during the seminar activities.").

Location of webinar added: “The webinar is held online, with course providers placed at their institution and with teacher sitting at home or at their workplace.”

*12. How well (actual):*

Findings from a nye paper published based on the TEACHOUT study added: “EOtC in nature and green areas appears on average to result in 7% less sedentary behavior and 6% more light physical activity during the school day compared to school days with outdoor school at cultural institutions or companies (Bølling et al., [2021](#)).”