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Impact of an evidence-based training for educators on bystander intervention for the prevention of violence against LGBTI+ youth

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Research shows that teachers and educators receive scarce scientific evidence-based training and tools to implement effective strategies to stop and prevent violence against LGBTI+ youth in educational institutions. Nonetheless, no data examines pedagogical contents and training initiatives that are providing these professionals with effective strategies and skills. This paper will cover this gap by gathering data on the impact of training workshops that were carried out in five European countries as part of a REC programme project. These workshops were designed to train educators in formal and non-formal contexts about scientific evidence-based content aimed at reaching social impact, such as *bystander intervention* and *the dialogic model of violence prevention*. As part of the training, they participated in the debate of a scientific article first hand, thus engaging with direct research. The content, organisation and instruments for data collection were co-created with relevant end-users and researchers who engaged at different meetings in an Advisory Committee. Aimed at collecting the impact of this training, 208 online pre- and post-questionnaires, and 12 semi-structured interviews were analysed. Results show that participants gain knowledge and confidence empowering themselves as active agents in the problem. Thanks to this co-creative and community science approach, participants affirmed they are thinking of applying upstander actions in their working contexts. The trust in the rigour of the content and the interest sparked towards science are also expressed.

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Introduction

Formal and non-formal educational institutions are hostile environments for many LGBTI+ youth who suffer violence (Fundamental Rights Agency, 2020). The lack of evidence-informed professional training for educators perpetuates this situation (Oliver, 2014; Yuste et al., 2014). However, there exist science-based educational actions that help face and prevent violence. This study is possible thanks to decades of competitive research projects and publications on gender-based violence and its prevention (Flecha et al., 2013), LGBTI+ (Rios et al., 2022), the bystander intervention approach (Duque et al., 2021a; Villarejo-Carballido et al., 2019), (cyber) bullying prevention programs (Olweus and Limber, 2010; Williford et al., 2013); scientific teacher training (Roca Campos et al., 2021), and communicative methodology (Gómez et al., 2006; Gómez et al., 2019).

This study assessed bystander intervention training to educators to stop violence against LGBTI+ youth, which started with the research question: Does this evidence-based training on upstander approach impact the participants, so that they are more confident, empowered and therefore more likely to transfer the knowledge and skills to their professional contexts? Results help answer this question, showing quantitative and qualitative data from Spain, Cyprus, Ireland, Denmark, and Belgium.

The author's positionality goes in line with the communicative methodology of research used (Gómez et al., 2019): to contribute with scientific evidence to social impact, in this case in terms of better lives for LGBTI+ and all youth. This approach has been used in EC Framework Program projects such as ALLINTER-ACT, REFUGE-ED or SOLIDUS (European Commission - H2020, 2020-2023; 2021-2024; 2015-2018). The research team is made up of a diverse group where there are some teachers, professors, LGBTI+ youth and adults. From an egalitarian dialogue based on validity claims (Habermas, 1987) with participants, the Advisory Committee and this diverse team, hope to best interpret reality in order to foster social transformation. This study aims to realise goals established by society and not by researchers, such as Sustainable Development Goals 4 and 5 about quality education and gender equality. This idea of social impact was widely developed by Flecha (2022) and Flecha et al. (2022) in the framework of the theoretical conceptualization of a dialogic society.

On the other hand, our positionality in regard to gender takes into consideration the analysis of social construction and socialisation in the shaping of identities. Accordingly, Morgenroth and Ryan (2021) affirmed that gender identity is understood as a social process of self-categorization where non-binary people demonstrate that there are individuals who do not identify themselves as either exclusively male or exclusively female. This conception includes, although is not reduced to, the recognition of persons who are considered gender-fluid, multigender and agender. Butler (2002) detailed the relevance that performativity has in this social construction of gender. She underlined how non-heteronormative identities, such as drag queens, questioned the binary differentiation between male and female. In that vein, she insisted on the oppression that heterocentrism causes in those sexual and gender minorities. Referring to socialisation, Millett (2016) argued that this is a process affected by power relationships and patriarchal policies which give a higher status to male identities. This situation causes the stereotyping of sex categories based on the needs and values of a masculine dominant group. In this line, there is recent research on men's studies which showed the existence of alternative models of masculinities that are not reproducing this scheme (Flecha et al. 2013). Such research evidences that new alternative masculinities are diverse but at the same time have common elements connected with the struggle against gender discrimination and gender-based violence.

This manuscript is divided into the following sections: a literature review contains relevant scientific knowledge for the present study; the methods section explains in detail the training and the research processes, including the co-creation approach; the transformative results from the questionnaires and interviews are then presented in the different categories; last, a discussion and conclusion connect our data with other up-to-date evidence and establish future research lines.

State of the art

The following theoretical introduction is a state of the art on the main topics of this study: violence against LGBTI+ youth and consequences, and evidence-based measures to tackle and prevent such violence will be explored; then, training for teachers and educators on both former issues will be presented; more specifically educational actions and training which include a "bystander intervention" approach are described. Last, the advances and importance of community science are explained. Specific research gaps are described in the different sections.

Violence against LGBTI+ youth and consequences. Due to oppressive and discriminatory practices, LGBTI+ youth is a group that uses to suffer violence and bullying, especially intersex and trans people (European Union Agency for Fundamental Rights, 2020; Copp and Koehler, 2017; Taylor et al., 2020). This violence takes place in educational institutions, whether formal -high schools, universities (Coulter and Rankin, 2017)- or non-formal -leisure, sports clubs, youth associations, etc. This harassment takes different forms: from physical or sexual violence to psychological and verbal violence (Dueñas et al. 2021), and other more subtle but harmful forms (Nadal et al., 2011). These are ubiquitous in all educational contexts, they are rarely reported (Gallardo-Nieto et al. 2021), contribute to the normalisation and interiorisation of LGBTI+phobia and perpetuate non-inclusive environments. Moreover, cyberbullying and other types of digital violence is more prevalent than ever (Abreu and Kenny, 2017). Perpetrators are diverse but have in common a dominant profile and a sense of immunity (Rodrigues-Mello et al., 2021; Jackson and Sundaram, 2019).

These violent and discriminatory behaviours towards LGBTI+ people are an issue that has been also institutionalized by politics and governments. According to data on the analysis of the SOGI (Sexual Orientation and Gender Identities) policies, mostly implemented in Western societies, they are obtaining positive results to protect LGBTI+ rights (Rahman, 2020). However, there are several European countries, such as Hungary and Poland, which are facing challenging situations in this field. For instance, in Poland, numerous municipalities and districts have created the namely zones free from LGBTI+ ideologies and people. They are described as municipalities and regions that have defined themselves as unwelcoming about LGBTI+ issues and claims. Similarly, in Hungary, a law was approved in 2021 where paedophilia was directly linked to homosexuality and gender change (Monaco and Corbisiero, 2022).

This whole issue is having significant health and educational consequences that have been long studied. First, health effects include lower self-esteem, a higher probability of experiencing different diseases, suicidal thoughts among others (Tucker et al., 2016; Almeida et al., 2009). Second, victimisation is found to contribute to lower academic outcomes, higher truancy, and expectations to abandon high school or not to continue studying (Aragon et al., 2014; Kosciw et al., 2012). Lack of support has the worst consequences for victims and makes it harder for them to become survivors and overcome the harmful effects experienced.

Nonetheless, consequences of violence are not only suffered by first-order victims. Allied youth can and do suffer from Isolating Gender Violence (IGV), which consists of attacks of different forms to discourage bystander intervention (Nazareno et al., 2022; Vidu et al., 2021; Cooper and Blumenfeld, 2012).

Evidence-based measures. Ending violence and discrimination against LGBTI+ youth is an international priority, included in the fifth Sustainable Development Goal on Gender Equality (UNESCO, 2017). Regarding measures to overcome violence, while historically attention was paid to the aggressor, such approaches have long been overcome by much research that put the focus on the victims and on bystanders. Among the recommendations drawn from research for decades, Grossman et al. (2009) suggest clear policies and rules, peer education, or planning educational actions and training for school personnel to create inclusive communities. The mandatory applicability of anti-discrimination protocols shows improvements (Gallardo-Nieto et al. 2021). Protective factors have been studied in more detail. For instance, a literature review by Espelage et al. (2019) showed how youth who suffer homophobic bullying but have support from family and friends do not have such negative consequences. Furthermore, strong and positive school climates both deter violence. Other protective factors analysed in a study by Valido et al. (2021) include friendships with trusted adults; participating in healthy activities; helping others; spirituality; access to counselling; and access to medical services. Successful strategies can be found in different educational contexts, overcoming prejudices towards, for instance, religiously affiliated education institutions, where Gay-Straight Alliances have been fostered and positively assessed (Killelea McEntarfer, 2011).

Training for teachers and educators. More recent research stresses the importance of training educators (Ioverno et al., 2021), especially in the most successful evidence-based educational actions (Flecha et al., 2023). The last decade, in most countries, has seen the rise of many training initiatives organised by LGBTI+ entities who have increasing visibility and social validation (DG JUST, 2023; IGLYO, 2023). Universities and high schools are also promoting such training among different educational agents (Rivers and Swank, 2017). Nevertheless, its impact on the creation of safer spaces has not been very studied (Flecha et al., 2023, p. 30). Specifically, there is no in-depth analysis of the effects on the LGBTI+ collective providing impact evidence. This study fills this gap.

Evidence shows how educators are role models and play a key role in perpetuating or transforming hostile environments for LGBTI+ youth (Molina et al., 2021). A study by Ioverno et al. showed how "students who observe teachers intervening during episodes of homophobic name-calling, and who perceive the representation of LGBT issues in class as positive, were more likely to intervene against homophobic name-calling" (2022, p. NP19564).

As it was abovementioned, there is a lack of evidence-based teacher training on violence prevention based on sexual orientation and gender identity (SOGI). Consequences of insufficient training include educators' and educational centres' improvisation, unfamiliarity with protocols, incoherence, lack of impact or even counterproductive effects (Gallardo-Nieto et al. 2021). Indeed, many educational measures are implemented once situations of bullying become apparent, but no prevention is done (Senden and Galand, 2019).

Research has been increasingly including non-scientific people in different phases and processes, due to ethical and scientific concerns: science is more accurate and relevant to end users and the beneficiaries when they are involved, especially in Social Sciences, this has also been studied (Gómez et al., 2019). When youth and LGBTI+ people are not considered when implementing an anti-bullying measure, it may not be tackling the most relevant and urgent issues they face. For instance, studies show how intersex and transgender youth benefit less from inclusive policies and practices, whose needs must be met by addressing them directly (Day et al., 2019). Complementarily, Greytak et al. (2013) evaluated the effects of four resources: Gay-Straight alliances (GSAs), and comprehensive anti-bullying/anti-harassment policies which include specific protections for LGBTI+ students had the strongest effects on trans youth. GSAs are a form of students' school involvement which has shown academic improvement and fear-based absenteeism decrease (Seelman et al., 2012). Co-creation processes with beneficiaries include all steps, such as the development of an evidence-based risk assessment survey tool which, thanks to this community science approach, included Isolating Gender Violence as a variable in the survey (Gómez et al., 2022).

Bystander intervention in educational actions and teacher training. Despite the importance of educators becoming examples of bystander intervention, evidence clearly states that it is the intervention among peers and the whole community which has the most impact. For example, Ioverno et al. (2021) concluded that students who saw other peers intervene were more likely to do so themselves. Training towards educators should therefore focus on engaging everyone as upstanders. The scientific evaluation of bystander intervention training implemented for employees of a large healthcare organisation showed positive results in bystander beliefs and attitudes (Kuntz and Searle, 2022). In this regard, the role of the facilitator and spaces to practise bystander intervention strategies is crucial although effects declined as time passed.

Among the educational actions that have been scientifically assessed with positive results in violence prevention, with a bystander intervention approach and which includes scientific evidence, the "Dialogic model of violence prevention and resolution" stands out (Duque et al., 2021a; Villarejo-Carballido et al., 2019). This model holds the whole community accountable for violence prevention, has its main focus on prevention and on changing the norms of the group, and so that bystander intervention is promoted by being socially valued among peers. This model fosters positive relationships and bystander intervention by transforming the models of attraction towards egalitarian people (López de Aguileta et al. 2020), acting as a strong prevention for any type of violence (Elboj-Saso et al., 2020). Relevant evidence-based keys for success are included in this model (Flecha et al., 2023): fostering friendship (Iñiguez-Berrozpe et al., 2021; León-Jimenez et al., 2020), protecting upstanders to avoid Isolating Gender Violence (Melgar et al., 2021b), language of desire (Melgar et al., 2021a), the importance of ideal love (Torras-Gómez et al., 2020); not trivialising or letting pass any form of violence (Valls et al., 2016); promoting New Alternative Masculinities (Rodríguez-Navarro et al., 2014), and educating on consent (Flecha et al., 2020).

Community science and social sciences. A community science approach has been included in an ever-increasing number of research projects (Bonney et al., 2014), with the aim of improving research and achieving higher scientific, political, and social impact (Reale et al., 2017). Most of them engage citizens in being direct agents in different processes of research beyond mere data collection (Phillipps et al., 2019), such as in the design of the research objectives, the elaboration of the data collection

techniques, the analysis of the data or the dissemination of the results. Further, citizen engagement can include individuals or community-based organisations in individual or collective actions (The ICBO and Allies Workgroup, 2022); an example of the latter is the Advisory Committees created by non-scientific end-users (Gómez, 2019). Research regarding environmental and health issues has acquired this approach (King et al., 2019), and so is social sciences in the last decade.

For instance, the communicative research approach used in social sciences and endorsed by the European Commission follows the same standpoint and aims: co-creation with all citizens, especially those directly benefited from the research and usually silenced, to increase the quality and ethics of science and to transform world challenges, while also achieving a distributed awareness and ownership of the importance of science to change the world. For example, Carrillo et al., (2019) present the impact of involving Moroccan immigrants in a collective "Dream process" for community development, engaging through communicative methodology researchers and citizens in an egalitarian dialogue that empowers the families and improves the neighbourhood. Natural leaders from the Moroccan community assisted the meetings, whose initial feelings of distrust dissipated as they realised their ideas were being considered. Furthermore, in light of the community demands, researchers trained neighbours on successful cooperative initiatives and gave them agency through scientific advice to start a cooperative.

In another study, Flecha (2014) evidences how through this co-creative approach silenced and marginalised communities such as Roma do engage in science and improve their situations. In that case, A Roma's mother, a member of the Advisory Council, was key to ensuring that the research findings were oriented towards solutions and not only problems: her contribution led to a focus on family education, which resulted in many empirical contributions (p. 251).

Research gap and objectives. Taking into consideration the analysis carried out of the literature on violence against LGBTI+ youth, general evidence-based strategies, the bystander intervention approach and training for educators with social impact, the specific research gap that this study aimed to cover is to provide evidence on the impact of the combination of co-created and evidence-based training based on bystander intervention for the whole community to prevent violence against LGBTI+ youth in formal and non-formal educational institutions.

In coherence, the objectives of the study are the following:

1. To assess the trainees' perception of the quality, applicability and transference of the training, analysing the elements that fostered or hindered such effects.
2. To assess the impact of the training attendees in terms of improvement in awareness about bullying against LGBTI+ youth and effective strategies to overcome it.
3. To assess the impact of the training in terms of empowerment and intention of education professionals to implement upstander interventions in their organisations and contexts.

Methods
The Communicative Methodology (Gómez et al., 2019) was followed throughout the whole study and the project lifespan. This community science approach to research focuses on co-creation of knowledge by having an egalitarian dialogue between participants and researchers (Flecha, 2014). Engaging citizens in different research processes is a Key Impact Pathway considered to increase the societal impact of such research, as proposed by the

expert report from the European Commission which set the guidelines for co-creation and social impact in the Horizon Europe Program (2018). As proposed by Gómez et al., (2006) and proven successful (Yuste et al., 2014; Tellado et al., 2014), an Advisory Committee (AC) was created at the beginning of the project, formed by non-researchers belonging to the collectives that benefit from the project outcomes and training (Munté et al., 2011), as well as scientists from the project consortium. Along with the project coordinators, 9 people participated in the online meetings, among which there was a teacher, a professor, a policy advisor, an education officer and administrator, a researcher, and two activists and volunteers from LGBTI+ and youth entities.

This advisory group validated the training content, organisation, and instruments for data collection by engaging in their dialogic design (Tellado et al., 2014). They met at three online gatherings where processes and proposals were introduced by the project members and researchers and then put into dialogue. They were also informed during the two years of the milestones achieved and received documents to contribute to their creation. Some of them attended and spoke at a panel in the project's Final Conference. Specific details on the AC contributions will be in the next sections, we now cite a female teacher member of the AC who expresses the impact of her participation: "As the three meetings and everything went by, it was like I began to appreciate the importance of this network, this connection between different countries, this rigorousness in what is being done, so, in a way, I got a bit hooked on it."

Methodological design and intervention. The research followed a pre-experimental pretest-posttest design with a single group of participants (Campbell and Stanley, 2011). This group is the one that received the training intervention. This intervention consisted of a ten-hour training divided into two or three sessions of 2.5 to 4 h and some individual tasks. The content of the training was essentially drawn from the pedagogical modules created by the project's consortium. The main contents of the training, divided into five modules, were:

1) LGBTI+ concepts, the reality of LGBTI+ youth, the violence they suffer and its consequences; and the European legislation and strategic actions.
2) A more in-depth explanation of violence in the digital era
3) The bystander intervention approach, its benefits, impediments, and how to foster it in educational institutions
4) What is behind violence: an understanding of its persistence and how to overcome it from the roots with preventive socialisation of gender-based violence, including the keys of friendship, addressing isolating violence, masculinities, and consent, among others.
5) Community involvement in violence prevention, deepening into the Dialogic Model of Violence prevention and resolution, and strategies to engage families and other agents.

The sessions consisted of a part of teaching the main contents and ideas, with the support of official power points based on the published modules, with a dialogical approach that encouraged questions and experiences being shared. Moreover, some practical and dialogue-based activities were proposed in each session: pertinent to this study, there was a dialogical brainstorming to find out ways to protect upstanders and prevent isolating violence. Apart from that, some individual tasks consisted of the preparation of a brief final document with upstander actions they could implement as an individual, in their youth group or in their institution. Trainers had previously participated in a "Train the trainers" event, where each project member taught their area

of expertise. Four of the eight training events also included the individual reading of a scientific article on some key contents (Racionero et al., 2021a, b), which was then debated in the last session in the format of a pedagogical dialogic gathering (Roca-Campos et al., 2021; Ruiz-Eugenio et al., 2021). The content and pedagogy reflect some Successful Teaching Actions (Flecha García et al., 2014). As previously explained, both the contents and the methodology were discussed with and validated by the Advisory Committee. Thanks to their feedback, the training included specific examples of standing up in digital contexts and a country-level introduction to LGBTI+ issues.

Instruments. Mixed methods were employed, both quantitative and qualitative. A Google Forms questionnaire was designed as a pre-test, which participants completed within the first session of the training, after a brief introduction of the project, to facilitate attendants to fill it out and solve any doubts regarding the questions. The same questionnaire was replicated for the post-test, which included questions regarding the evaluation and impact of the training. Attendants were also given time at the end of the last session to complete this second questionnaire. Both questionnaires were translated from English to national languages: Danish, Greek, Dutch, Spanish and English.

Questionnaires were designed to be brief and focus on key and general issues regarding the training. They do not respond to a quantitative logic of achieving representative results but to a descriptive exploration of the impact on the participant's professions which was one of the main purposes of UP4Diversity project. Then these results were complemented by the qualitative data. Both questionnaires shared 16 initial questions, and 11 more were included in the post-test. They asked for basic demographic information about age, country, gender identity, educational institution, and role in it. Then, they contained mostly quantitative questions: combining the pre- and post-test, ten questions with a Likert scale 1–6 with a narrow dispersion and no middle values; three multiple choice questions with Yes/No/I don't know options ("What is being an upstander?") or different text options ("What is the role that professionals can have to prevent or deal with violence against LGBTI+ youth?"). Four short open-answer questions were also included: they asked for a definition of being an upstander, educational practices that are based on scientific evidence to prevent violence, and whether they were already implementing any upstander actions in their institution and which was the impact achieved; the post-test included "Name three things you learnt in the training, or would like to highlight, regarding educational practice". The survey template with answer options can be found in Annex 1.

On the other hand, interviews with a communicative approach were semi-structured and carried out by each project partner in the local language, to facilitate natural communication by participants. The main topics of dialogue were their perceived personal impacts in terms of upstander empowerment after the training; and upstander past, present and future impacts of the training with their groups of youth, with their colleagues or within their educational institutions. Thus, the interviews focused on helping respond to research objectives 2 and 3. Questions and items can be found in Annex 1.

Participants. The sampling method for this study is intentional: all participants were attendees to the project training events.

Questionnaire participants. The sample is a group of participants in the training who decided to voluntarily respond to the pre and post questionnaires. Around 150 participants attended one of the 8 national training events -both Spain and Ireland training was

carried out in two different events each-, of which 118 responded to the voluntary pre-training test and 90 responded to the post-training questionnaire. All respondents to the post-training questionnaire answered the pre-training survey.

82.2% of the respondents in both the pre and post-test were from the trainings in Spain and Cyprus, and the remaining of the respondents were from Ireland, Belgium, and Denmark. Some participants were from other countries, such as Greece, China, Mexico, UK, and the USA. This participation difference responds in a proportionate manner to the number of trainees by country in the workshops. National training was the responsibility of each consortium partner: some of them found difficulties with the educators' conciliation of professional training outside of working hours and personal lives in their contexts. Two of the partners were a youth and a LGBTI+ entity, and not research teams. Moreover, trainers from Cyprus University engaged their teaching education students. Last, the Spanish project members were the project coordinators and leaders of dissemination efforts, and therefore their allocated working hours for those purposes were longer. Nonetheless, the aim of the project and the study was not to achieve representativity of the European countries involved, but rather to reach as many educators as possible over 100 attendees, and see the impact on them, a goal achieved. This was the agreement that the consortium reached with the EC.

An 80% of respondents were women, 15% men, 2.5% non-binary, 1.25% gender-fluid, and 1.25% preferred not to respond. Ages went from 18 to 66. Participants belonged to different formal and non-formal educational institutions, such as high schools, universities, NGOs, LGBTI+ entities and educational associations.

Interview participants. The post-training questionnaire included a last question regarding respondents' interest in participating in an interview. Among those who responded positively, trainers suggested two of them by country who had, as key informants, attended the majority of the training and they would provide diverse profiles and insights. In the end, 12 education professionals of different contexts and profiles (LGBTI+ and not, educators, activists, etc.) and all consortium countries, as explained in Table 1, participated in the interviews. Their insight helped deepen the answers provided in the questionnaires. Interviewers were members of the project consortium of each country, involved in the training workshops carried out.

Procedure. Participants in the training were introduced to the questionnaires and given time to fill them out within the sessions, which took around five to ten minutes. After the end of the training, among those trainees who had provided their email for a possible interview, the ones selected by the Consortium for the reasons previously described were reached and asked if they confirmed their willingness to participate in an interview after being informed of its objectives and provided with the informed consent. Those who confirmed their participation were asked to send back the consent signed. The interviews were carried out through videoconference and had a duration from twenty minutes to one hour. They took place the following weeks up to three months after the last training session, from March to June 2022. The interviewer, following the communicative and community science approach (Ramis-Salas, 2020), included some key scientific evidence of the issues at hand, so that the participants could compare them with their personal experience and provide their knowledge of the lifeworld (Padros et al., 2011). The knowledge was co-created in an egalitarian dialogue between both the interviewee and the researcher. For instance, an interviewee talking about the training's impact on her was doubting whether it would be better not to stand up so much directly to an

Table 1 Interviewees' profiles.		
Litsa	Cyprus	Female kindergarten teacher and MA student at UCY. Activist at an NGO that works with people with special capabilities. Involved in a feminist movement as an active member
Stela	Cyprus	Female English teacher. Original interview about the whole project and network, but with valuable information regarding the project's network.
Sandra	Spain	Female primary school teachers belonging to the collective implementing the dialogic model of conflict prevention
Leo	Spain	Male school teacher and headmaster from a rural school implementing preventive upstander actions
Ester	Spain	Policewoman linked to education working in an association for the visibility of LGBTI and committed to human right
Teresa	Spain	Female teacher who was learning for the first time about upstanders
Hugo	Spain	University professor and researcher. Original interview about the whole project and network.
Eveleen	Ireland	Female lecturer from an Irish University. She attended all sessions, and in her final task included a proposal for institutional upstander intervention in her faculty
Mike	Ireland	Male PhD student and lecturer at university, with professional experience with young students
Jakob	Belgium	Teacher trainee
Aya	Belgium	Teacher trainee
Anndrea	Denmark	IT-consultant, an active member of Danish NGO working for diversity, equality, and women's rights

aggressor; the researcher provided the evidence that direct positioning, if non-violent, may sometimes be necessary, even though there are indeed other ways to be an upstander such as to delegate or distract.

Ethical aspects. Regarding the instrument design, the end-user citizens from the Advisory Committee (AC) were an active part. They were emailed a draft to which they sent suggestions, which were deeply discussed in a specific meeting. They proposed questions and language changes so that the instruments were easier to understand and more relevant. For instance, members of the AC suggested we did the questionnaires within the workshop, and they expressed that it was important to translate them, even in Nordic countries with good English levels, to ensure the inclusiveness of all potential participants.

Ethical procedures were agreed among the Consortium and approved by the European Commission before the implementation of the data collection instruments. The confidentiality of the data provided was ensured, and responses were anonymised using pseudonyms for the interviews. Participants voluntarily decided whether to complete the questionnaires or not, as well as to participate in the interviews. The informed consent at the beginning of the questionnaires and before the interviews included information on the project objectives and the procedures of the questionnaire or interview, and they were informed that quotes from the data provided might be included only for research purposes. Once the official paper draft was elaborated it was sent to them so that they could validate the results and conclusions.

Analysis. Data from the different questionnaires was combined into one Excel with two tabs for pre and post results. Transcriptions of the interviews were carried out, and the analysis was done manually. The categories of analysis have been created inductively, as they have emerged from the data collected, while connecting to the three objectives of the study, which refer to the assessment of the training, its learning impacts and its professional impacts. The connection between objectives and categories can be found in Table 2.

Individual changes in respondents are not analysed, since questionnaires were anonymous and researchers could not identify the questionnaires to match same-person pre- and post-answers; instead, a whole-group comparison was carried out.

Results
Results are presented in four sections which correspond to the categories and to the research objectives. Generally, quantitative

data is initially introduced in each section; the qualitative part of the pre-post questionnaires, and mainly the semi-structured interviews, allowed the emergence of deeper results that relate to and expand the quantitative data.

Training assessment. In this first section, the data presented answers to objective 1. The overall assessment of the training in the questionnaires was a 9.1 on a scale 0–10. Respondents averaged 5.45 on a scale 1–6 in assessing that the training was useful because they had developed upstander strategies to implement.

On top of that, attendees describe having been provided with useful scientific knowledge on these issues as a key to foster their professional confidence: Leo says that "having access to evidence-based training, well, that's not always the case and so it is very much appreciated to always have that source, and that rigorous source". Another one expresses the potential of being taught "what the research has said so far that works in programs that work against violence".

The scientific pedagogical gathering that took place in some training events was assessed as very effective, practical, cohesive and coherent, and as a first-hand experience of their transformative potential in training that can be easily transferred to the participants' contexts.

The training had diverse professional profiles, but participants explained that it was the methodology of promoting a dialogic and interactive environment which made it possible to benefit from such heterogeneity. For instance, Aya describes how having teachers explain the theory being implemented in their classrooms was very helpful to visualise it. Eveleen expresses the benefits of other profiles:

"It was great to have so many different partners involved because I learned from the different experiences. I had no idea some of them existed, and now I know where to go if I ever need them. (…) And I actually found it very helpful to actually look at all of the places where this kind of intervention can be made. So, for example, (…) it was really interesting to hear the perspectives of people who work in voluntary services, you know, in youth services (…). And actually, useful in terms of clarifying my own perspective on things, because sometimes when you just work with people who work in the same area as you do, you have a very kind of narrow focus."

Awareness of violence against LGBTI+ youth and evidence-based successful strategies. This section provides data to answer objective 2. Among the questions included in both the pre and post-test, respondents show an average increase from 4.51 to 5.12

Table 2 Categories of results in relation to the research objectives.	
Objectives	**Categories**
SO1: To assess the trainees' perception of the quality, applicability and transference of the training, analysing the elements that fostered or hindered such effects	1. Training assessment
SO2: To assess the impact of the training on attendees in terms of improvement in awareness about bullying against LGBTI+ youth and effective strategies to overcome it.	2. Awareness of violence against LGBTI+ youth 3. Awareness of evidence-based successful strategies
SO3: To assess the impact of the training in terms of empowerment and intention of education professionals to implement upstander interventions in their organisations and contexts	4. Professional empowerment 5. Impact on the workplace

on a scale of 1–6 in awareness of violence suffered by LGBTI+ youth; they also have a mean increase from 3.61 to 4.81 on a scale of 1–6 in feelings of preparedness to intervene when aware of cases of such violence. Moreover, they averaged 5.35 on a scale of 1–6 on feeling that participation in the training had improved their awareness of the effective practices that can help overcome violence against LGBTI+ youth.

The percentage of respondents who know any evidence-based educational practices to prevent violence goes from 30'7% ($n = 118$) to 67'8% ($n = 90$). Regarding the bystander intervention approach specifically, participants were asked if they knew what "bystander intervention" or "being an upstander" meant: from the pre-test respondents ($n = 118$), 40% answered "no", 31.3% answered "I'm not sure" and only 28.8% answered "yes"; however, post-test results show a 95.6% of respondents answered "yes" and only a 4.4% answered "no" or "I'm not sure".

One question in the questionnaires asked about the role that professionals can have in preventing or dealing with violence against LGBTI+ youth. From the analysis of the respondents of the Spanish events, a substantial difference is seen in checking the hoax-statement option of 'focusing on the aggressors': 49.15% marked it in the pre-test while 21.05% marked it in the post-test.

The training confirmed some past and present educational actions that were in fact based on the evidence, while also clearly acknowledging what was wrong in their professional practice and how to improve it. It is made evident that people who joined the training were already sensitised to these issues. As a matter of fact, various participants expressed "I have been an upstander all my life"; thus, what the training has done for them, so they say, is to provide them with more impactful approaches and actions. A quote by Eveleen serves as an example:

"I was already motivated to try and do something to change it. (…). So, I came to the training (…) with the desire to make things better. So, I couldn't say that the training actually changed that. But the training certainly changed what I thought was the appropriate thing to do."

Deeper on that idea, Aya, a Belgian pre-service teacher, expresses that, despite previously stepping up against violence, the training has given her keys and tools to be a good upstander and carry out correct actions:

"I would not be shy to speak up, I never have been. But I never really knew what to say, or how to do it in a way that makes things better, not worse. I think this workshop really helped me with that. It's not going to be easy, and it will take practice, but I now know that I don't need to be too rushed, I can delay, I can distract, I can ask questions, and then I can think about what I can do on a more structural level afterwards." (Aya)

Opening spaces for dialogue about acting upon violence against LGBTI+ people, among youth or other agents of the community, is another widespread action as expressed by several participants. Nevertheless, Hugo mentions that even though the training has provided him with the motivation to do so, he is also more aware of the need of those spaces to be safe: "the issue must be put on the table, but with great care to ensure that no danger is created for anyone."

An Irish university professor expresses her change in her professional approach within her daily teaching dynamic: "Before I undertook the program (…) I would have been more focused on the perpetrators than the bystanders (…); after doing the program, I suppose I'd be more focused on empowering bystanders to take action." (Eveleen). She and another colleague participating in the training did together the final task where they committed to reaching all students and staff from a teacher postgraduate module on sexual health promotion.

In that same line, another attendee draws on Isolating Violence -attacks suffered by defenders- and reflects on teaching for successful intervention: "give it a couple of twists and turns to provide in which situations and how not to, mostly to avoid [bad] experiences which make people close themselves off and not want to be an upstander anymore" (Ester). Very much connected, other participants realise that backlash for defending is likely to happen, and therefore it is necessary that everyone is aware and prepared for those attacks: first, so that it does not come as a shock after doing something good if they understand they are not the only ones experiencing reprisal and if they become aware of the impunity control underneath those attacks; and second, so that they have the tools to overcome those situations, namely creating solidarity networks and building supportive friendships. Ester expresses it in these terms: "If the majority of people start to be upstanders, to have the "enough is enough" attitude, then those people [who have been harassed] are not left alone, right?"

An important professional impact stated by participants is the increase in critical thinking on training that is not focused on scientific evidence and achieving social impact: this was especially reflected by professionals already trained on such evidence, who gained concern with possible training opportunities for the educational centre that, by not being scientific and rigorous, might turn out to be contradictory, confusing and counter-productive, because some of their colleagues show resistances to implementing evidence-based actions.

Different participants, especially those participating in other continuous teacher training based on successful educational actions, emphasise that constant dialogue around this preventive evidence is key to overcoming obsolete approaches:

"That work of prevention. Very constantly, because we have it very deep inside us, and so we not only have to be aware that it exists, but we have to work on it with great persistence; because we are so socialised in this [wrong assumptions] that turning it around requires a lot of dialogue." (Hugo)

The necessity of learning together, and the willingness to continue the project's network and learning for real impact, is also mentioned:

"If spaces for dialogue about the research that is being carried out with respect to the bystander intervention with the LGTBI+

collective were organised, then it would really be a continuity of teacher training, because otherwise, how can teachers continue to be trained? (…) Because there are a hundred thousand [training] materials. So, what is going to ensure quality teacher training? Research and educational actions with a transformative impact, which is what really makes it effective. Well, yes, if we want to do it in the long term, we must generate these spaces (…)". (Sandra)

Last, the need to establish a dialogic learning environment among educators within each education institution is reflected as key, because they can have more frequent and closer meetings, through pedagogical dialogic gatherings, to fully understand the profound educational actions and therefore be able to correctly apply them:

"Everything we have talked about in the training is like clues to continue working with the teaching staff on the basis of the dialogue that we all need to have, right? In the end, what generates concreteness is talking about what you are doing [specific daily educational actions with youth], and I think this is what happens in the [pedagogical dialogic] gatherings, right? We are talking about a subject or giving opinions, we are growing in the argument, in the depth of what we are doing. And to generate the pretext, all the resources you have given us to generate these debates are great. It seems to me that it is going to be very transformative in the staff meetings. In fact, I think that teachers who have never worked in this way of training, when they come to the centres and there is this climate of dialogue between teachers to improve practice based on evidence, I think they always, always, always appreciate it a lot. So, I think it is very important to have concrete strategies, but when you do the [zero-violence] brave club, to give an example, it seems that if you don't talk about it if you don't go into it in depth, it is difficult, it is very difficult to do it correctly." (Leo)

Professional empowerment. This section and the last one provide evidence to respond to objective 3. 97.6% of questionnaire respondents answered that after the training they felt more confident to implement upstander actions in their organisation or class. From the qualitative data, participants mention feeling more comfortable once they start teaching the next year, with more confidence due to the many tools and advice received. Sandra, a Spanish teacher who belongs to the LGBTI+ collective, said: "It has really helped me to empower myself." As a school headmaster, Leo expressed this as feeling "very relieved", and explained it with the fact that the written modules are open access and available "to everyone, but especially to families who need to see it, read it and comment on it.". That self-confidence is also translated into overcoming tabus by breaking the silence and talking explicitly about LGBTI+ or personal upstander behaviours so that students have real and close testimonies that inspire them.

The atmosphere of the training and its empowering effects are highlighted by Jakob, a Belgian pre-service teacher: "I appreciate being told that this is hard. And if I can't fix all of it straight away, that's okay. I will try, and I will learn, and hopefully I can help more and more each year". Specifically, having the research and global and local data on violence gives professionals the strength to stand up in conversations with sceptics:

"Having the black-on-white findings from the research was so useful. I have created a folder on my desktop with all the materials, so that if I need them when I start teaching, or if someone asks me 'Hey, this is not important, why do you care', I can point them to these things. It's much more persuasive that way, and I will use it for sure." (Jakob)

Connected to this, Hugo, a Spanish male university professor expresses how the training clearly stated that everyone has an important role as upstanders for LGBTI+, also heterosexual men. This was especially empowering, given some exclusive discourses that people in his university or in other contexts have, which conclude that people who do not belong to the collective have nothing to say or do in these regards. Further, his increased motivation draws on the reflection that his teaching around the upstander approach could be easily included in many university subjects in a transversal way, impacting hundreds of pre-service teachers. He expressed that in the following terms: "So it is about talking to people and, well, this is something that is not going to stop, I mean, it is only going to get bigger and bigger."

An appropriate summary of this empowerment is an idea from this teacher: "It's like I already had the "glasses" on, and what the course has also done is to reinforce them on me." (Sandra). Furthermore, that empowerment is turned to actions beyond the professional field: participants described having had conversations about being a bystander or either an upstander with young family members or friends or identified stronger and non-violent upstander responses to inappropriate behaviours by peers or acquaintances:

"This training workshop gave me the understanding that we need to stand up in every situation, even if we do not believe that something will change. (…) I realised that my silence sometimes has been taken as agreement with conservative opinions. Right after the workshop, I found myself in situations where I consciously thought: "You have to speak and support the people that are being verbally bullied, right now". And so, I did." (Litsa)

Impact on the workplace. An average 5.51 on a scale of 1–6 was obtained when asked in the questionnaires if they would be implementing some upstander actions in their professional activity to help end, among other forms of violence, LGBTI+ phobic violence. Among the upstander actions that respondents planned to implement in their institutions, the following three options received more than 80% of the responses: being an upstander themselves (94.7% of Spanish respondents); opening dialogue spaces with their colleague professionals about upstander actions (78.9% of Spanish respondents); and opening dialogue spaces with youth about being upstanders (84.2% of Spanish respondents). Reading and discussing with their colleague professionals the project's training materials for educators was also highly selected (60.5% of Spanish respondents).

The conversations raise many diverse comments that refer to educational changes introduced in their everyday dynamic with youth, or as institutional changes, thanks to the training. These changes have the potential to impact not only students: many participants analyse that the main barriers in promoting upstander approaches for LGBTI+ are found in families and staff, even in the institution boards; therefore, families and professionals become a key target of training. Focus on prevention and involving the whole community are emphasised when aiming for zero violence and safe spaces:

"Training helps, and being preventive is really important. It can't just be up to one or two teachers; you have to create a whole environment so that things don't get out of hand. I'm still a bit nervous about seeing a really bad situation and maybe not knowing exactly what to do. But I do know what I can do in my classroom, and what is possible to prevent these things" (Jakob).

Indeed, many participants express their plans to include the contents, doing "something similar to this training" (Aya), with students and teachers. Concerned by the level of normalised homophobic hostility in their educational centres, and inspired by the training, teachers like Sandra or Leo see the need and possibility to do awareness training for the whole educational community, also thanks to the teaching resources provided.

Among the contents, the challenge but importance of teaching skills to stand up in digital contexts is highlighted: "It is important, when talking about courage and being able to break the silence, that upstanders can also do it in the digital space" (Sandra).

Ester, a Physical Education teacher, expresses how the dynamics in this specific subject allow her to differentiate those who impose themselves as "leaders" from actual leaders: people involved with other vulnerable people or who enjoy solidarity. The training helped her identify the transformative potential of giving value to those students: "(…) detecting those potential leaders (…), also involving them in these things, would help a lot, since the rest will already start to see things as they are, right?". Then she connects contents taught in module 4 of the training with these ideas around solidarity leadership for group change: "And also to encourage another type of masculinity".

Teresa, a high school teacher, expresses her special interest in involving families and creating mixed commissions where they are relevant. For that, she aims at discussing the idea in faculty meetings and working with other colleagues to make it a reality:

"That is why I also centred my final task so that this sector [families] would also have more visibility and could also show itself or be an example. And also, to show their disagreement with what is happening, right? (…) because together they make more of an impact, and many ideas can also arise."

The training was focused on benefiting LGTBI+ youth, but several participants expressed the interdisciplinarity nature and usefulness of bystander intervention for anyone, which increases the chances of its transferability to multiple contexts and for many minorities such as refugees or intellectual diversity:

"The subject -diversity- is really important to me because I come from a 'diverse' background myself. I don't think it really matters if you are of a different ethnicity, or you look different to others, or you are LGBT; learning how you can become an upstander and using those techniques is important for all of those. I'm definitely going to use what I learned when I start teaching." (Aya)

Teachers who work on or join educational centres which are already implementing the bystander intervention approach in different measures and actions, such as the Dialogic Model of Violence Prevention and Resolution, state that the training has nonetheless motivated the inclusion of the LGBTI+ dimension in the school. The training sparked dreams that combine professional and personal dimensions:

"With a work that is already being done there [at the school], drawing on bystander intervention, you can see it, (…), [this helps] establish a starting point of how the LGTBIphobias issue has been specifically worked and if it has been worked, and if not, then give them this approach. I mean, that is one of my dreams." (Sandra)

Participants such as Teresa express how they are already implementing successful educational actions mentioned in the training such as dialogic gatherings. In this sense, she sees it as an opportunity to incorporate what was learnt in the training within those dialogues. The previous general knowledge on bystander intervention and preventive socialisation of gender-based violence has been concretised in this specific vulnerable collective: a headmaster mentions it has helped pay more attention to LGBTI+ students and the relationships around them.

The motivation gained is translated into faculty decisions to continue learning, and to train new teachers and families. The content of the project reinforces the work they are already doing:

"At the faculty level, it seemed pertinent to us how to do this in the first weeks of class, training the new faculty and the new families, because it is true that we are implementing the dialogic model of prevention and conflict resolution, so somehow, we

have it more or less incorporated, but the training is with this LGTBI+ approach, it gives us an extra importance to what we are doing." (Leo)

This school headmaster expresses how the modules and presentations offered by the project would enable them to facilitate a more comprehensive and structured training which would be approved in a staff meeting to be included in the Annual general plan of the centre so that it is carried out yearly as part of the training dynamic.

Given the diversity of roles and professional profiles of attendees to the training, transference to training reaches further than teachers' actions: for instance, Ester, a LGBTI+ police woman expressed how she will incorporate all that evidence in the training she carries out with students, teachers and families, with the aim of involving more and more those passive, sceptic and conservative people and non-LGBTI+ people: "I see this as gold, applying this, teaching these tools". She expressed taking advantage of the confidence that her police status provides to some more conservative people, to incorporate the same content:

"(…) at a talk on hate crimes, there was a heterosexual mother of children from the group (…) And, well, it occurred to me, because, of course, if these mothers are there at that talk, they are potential upstanders, right? If they are there, learning everything they can to help…. So, they are the ideal people, within the families".

Universities may also benefit from training initiatives derived from the project's training. Hugo foresees the organisation of a conference at his Spanish campus for its potential impact on the whole university and the regional media. A different context that benefited from this training programme is a Belgian university:

"Moving forward, the KU Leuven's diversity department will consider how it can offer a shorter programme next year, to staff and students, based on this programme. As such, we are confident that the current program is there to stay in the future!"

Teresa, a secondary education teacher, expresses her willingness to be more coordinated with entities she knows that support adolescents' struggles. Another lesbian teacher expresses a dream that grew in her from the training, which consists of making the knowledge and strategies gained regarding bystander intervention reach a LGBTI+ collective where she is a member so that the extensive training this organisation carries out in educational centres includes all this evidence. In a similar vein, contents developed in the training are already being shared with other networks of educators, for instance, the final individual task where participants were asked to plan strategies they would implement in the future in their contexts:

"The work I have done to send it to you, I have shared it in safety groups, for example, in the "Women's group Sherezade Dialoguing Feminism", in case it would be useful for them to work on it in their centres because I know they already have this [theoretical and scientific] base." (Sandra)

Discussion

This study provides both quantitative and qualitative evidence of the quality and impact of training for educators to gain scientific knowledge and implement science-based educational actions with an upstander approach to help end violence against LGBTI+ youth. With the evidence provided, we consider that the training and research goals are met, and the research question is positively addressed. Respondents show they are more empowered, skilful, and likely to transfer the skills and strategies learnt in their professional contexts. Regarding the learning acquired, quantitative data demonstrates that participants show a substantial decrease in marking the statement 'focusing on the aggressor' when offered different options to address violence. Drawing on

previous research, these focusing actions on aggressors are not effective, and therefore this result is explained as an increase in scientific competence to differentiate appropriate from counter-productive solutions to violence (Dekker et al., 2012).

Regarding the goals that refer to empowerment and transference, participants express that the confidence gained is partially explained by knowing that some of the best available science on the issue is provided to them. Very much linked, different trainees expressed that the training had already motivated upstanders to guide their actions in order to increase their impact through evidence-based actions that effectively tackle school violence (Castellví et al., 2022). In a complementary manner, some trainees expressed having a mindset towards caring especially for more vulnerable groups but lacking some basic training on LGBTI+ issues: the training has, in this sense, provided them with this lens on gender and sexuality minorities to be included in all the successful educational actions, such as the dialogic model or dialogic gatherings, which they already carry out. Connected to the research by Tuyakova et al., (2022) on emotional intelligence, participants show signs of increased self-motivation, empathy, and managing one's and other people's emotions.

As expressed by men, but also different women, the training helped internalise the importance of empowering everyone to stand up to violence, including heterosexual men (Rostosky et al., 2015), for which research shows it has been a bigger challenge to become allies for LGBTI +, for fear that their attractiveness and male identity will be called into question (Goldstein, 2017; Dessel et al., 2017). The New Alternative Masculinities' approach explained in the training course helps in this regard, showing that men who stand up are not only more egalitarian and fairer but more confident and attractive at different levels (Duque et al., 2021b; Zubiri-Esnaola et al., 2021). This focus on "leader traits", such as confidence, strength, and attractiveness, as it has been affirmed by some participants, helps engage popular opinion leaders both within the staff bodies and teachers or within youth groups.

Another repeated result found, consistent with European and international approaches to science communication (European Commission, 2018), is the need to share scientific results open-access for everyone to benefit from them, such as the modules and other results that were shared with participants, which can be found on the project's website (Up4Diversity Consortium, 2022) and which will continue to be disseminated through social media and in other events with citizenship. Teachers who received the training can then recreate it in their communities thanks to the freely available resources, as expressed by different participants like Sandra or Leo.

A pedagogical dialogic gathering was carried out at half of the training events with great evaluation by participants. This training action allows the direct access of citizens to science, as it follows a community science approach where co-creation takes place to create knowledge together in egalitarian dialogue (Ruiz-Eugenio et al., 2021); moreover, it is easily replicable in all contexts (Roca-Campos et al., 2021). Indeed, the headmaster of a school explained that this is the best way they have found to fully understand the educational and personal changes needed, and also the most effective action to help new teachers and professionals in the successful educational actions they carry out as a school project (García-Carrión et al., 2020).

Involving the whole community for violence prevention can be done by organising open dialogic gatherings or other training, or by starting a mixed committee with families, volunteers, staff, and youth (Rodríguez-Oramas et al., 2021; Flecha, 2015; Flecha and Soler, 2013). A Gay-Straight Alliance can also be launched in any context, with great results in involving straight allies and creating safe spaces for conversation and learning (McCormick et al.,

2015; Killelea McEntarfer, 2011). As has been evidenced by the diversity of participants and by research, acting to end harassment towards LGBTI+ youth is a common fight of everyone who is against violence, women, men, and other LGBTI+ people. Creating solidarity networks to fight isolating violence was highlighted by trainees and by research (Melgar et al., 2021b).

The research gap that this study contributes to cover, as identified in the literature review, is the existence of training materials that combine an evidence-based approach of bystander intervention, from a preventive and resolution perspective, with a specific focus on violence against LGBTI+ youth, which involves all educational agents; designed in co-creation and taught in a dialogic learning context. Beyond the initial research goals, it is worth mentioning that the project network of educators has continued meeting for dialogic training sessions every 3 months a year after the end of the project lifespan: this has been a great contribution from this research, a group of people learning from scientific evidence in Europe which did not previously exist. Both the network and the positive impact of the training can contribute to an increase in training initiatives and research in diverse contexts which can provide a multiplying impact in the lives of LGBTI+ youth.

Conclusions
Diverse literature has shown that educators lack scientific training that connects LGBTI+ issues and bystander intervention to create safer spaces (McShane and Farren, 2023). The current study has shown similar results to other research on bystander intervention training (Kuntz and Searle, 2022). Evidence-based training towards educators can contribute to overcoming prejudices and hoaxes which, in the end, foster the implementation of evidence-informed approaches. Learning about Successful Educational Actions with a bystander intervention approach has a strong potential impact on the reduction and prevention of violence towards LGBTI+ youth, as many educational centres are already evidencing (Flecha et al., 2023; Flecha, 2015).

With the evidence available, some policies are proposed. Formal and non-formal educational institutions can benefit from implementing training based on bystander intervention, dialogic gatherings with books and articles about LGBTI+ realities and successful actions; as well as implementing the zero-violence brave club and gay-straight alliances. These measures should involve primarily students and educators, but all agents of the community. These dialogic spaces will help give visibility to realities that LGBTI+ students face, while also reinforcing upstander attitudes. All actions carried out ought to have the final aim of creating safe and free spaces for everyone, where violence is not tolerated and solidarity is fostered and reinforced.

The research process and results have strengthened the important role of the Advisory Committee in designing the modules, the training and the instruments for data collection. Moreover, the communicative methodology that guides the interviews explicitly allows participants to benefit from the evidence available regarding the topic: the researcher would include in the dialogue such evidence. All these actions are part of a community science approach which is key to improving training processes and results.

Lastly, some limitations can be drawn from this study. First, regarding the intervention, the content was too condensed given the 10-h time frame agreed, where more time could have allowed for a deeper explanation and, most of all, longer dialogues around the contents of the training. Second, with regards to the instruments, the questionnaire could have included more hoaxes and evidenced statements to have more proof of the overcoming of non-scientific approaches by trainees. Questionnaires could have

included individual identification to allow same-person comparison between pre- and post-questionnaires' answers. Furthermore, long-term assessment of the impacts would help check if there is actual transference to educational actions. Future studies can combine both elements to provide evidence of sustainable transference and, ultimately, impact on upstander behaviour increase and violence reduction.

Data availability

The data supporting the results and analyses presented in the current study are not publicly available due to the fact that they contain personal information. However, they will be made available from the corresponding author on reasonable request.

References

Abreu RL, Kenny MC (2017) Cyberbullying and LGBTQ youth: a systematic literature review and recommendations for prevention and intervention. J Child Adolesc Trauma 11:81–97. https://doi.org/10.1007/s40653-017-0175-7

Almeida J, Johnson RM, Corliss HL et al. (2009) Emotional distress among LGBT youth: The influence of perceived discrimination based on sexual orientation. J Youth Adolesc 38:1001–1014. https://doi.org/10.1007/s10964-009-9397-9

Aragon SR, Poteat VP, Espelage DL et al. (2014) The influence of peer victimization on educational outcomes for LGBTQ and non-LGBTQ high school students. J LGBT Youth 1 11(1):1–9. https://doi.org/10.1080/19361653.2014.840761

Bonney R, Shirk JL, Phillips TB et al. (2014) Next steps for citizen science. Science 343:1436–1437. https://doi.org/10.1126/science.1251554

Butler J (2002) Gender trouble. Routledge

Campbell DT, Stanley JC (2011) Experimental and quasi-experimental designs for Research. Cengage Learning, Ciudad de Méjico

Carrillo A, Girbés-Peco S, De Botton L et al. (2019) The role of communicative acts in the dream process: engaging Moroccan migrants in a community development initiative in urban Spain. Community Dev J 54(2):197–214. https://doi.org/10.1093/cdj/bsx049

Castellví J, Massip Sabater M, González-Valencia GA et al. (2022) Future teachers confronting extremism and hate speech. Hum Soc Sci Commun 9. https://doi.org/10.1057/s41599-022-01222-4

Cooper RM, Blumenfeld WJ (2012) Responses to cyberbullying: A descriptive analysis of the frequency of and impact on LGBT and Allied Youth. J LGBT Youth 9:153–177. https://doi.org/10.1080/19361653.2011.649616

Copp HL, Koehler WJ (2017) Peer attitudes toward LGBT-identified university students as mediated by demographic factors. J Gay Lesbian Mental Health 21:277–291. https://doi.org/10.1080/19359705.2017.1320697

Coulter RW, Rankin SR (2017) College sexual assault and campus climate for sexual- and gender-minority undergraduate students. J Interpers Violence 35:1351–1366. https://doi.org/10.1177/0886260517696870

Day JK, Ioverno S, Russell ST (2019) Safe and supportive schools for LGBT youth: addressing educational inequities through inclusive policies and practices. J School Psychol 74:29–43. https://doi.org/10.1016/j.jsp.2019.05.007

Dekker S, Lee NC, Howard-Jones P et al. (2012) Neuromyths in education: prevalence and predictors of misconceptions among teachers. Front Psychol 3. https://doi.org/10.3389/fpsyg.2012.00429

Dessel AB, Goodman KD, Woodford MR (2017) LGBT discrimination on campus and heterosexual bystanders: Understanding intentions to intervene. J Divers High Educ 10:101–116. https://doi.org/10.1037/dhe0000015

DG JUST (2023) Progress Report on the implementation of the LGBTIQ Equality Strategy 2020-2025. https://commission.europa.eu/document/98551259-7873-4d91-940c-323e4cd7d390_en. Accessed 21 Jun 2023

Dueñas JM, Racionero-Plaza S, Melgar P et al. (2021) Identifying violence against the LGTBI+ community in Catalan Universities. Life Sci Soc Policy 17. https://doi.org/10.1186/s40504-021-00112-y

Duque E, Carbonell S, de Botton L et al. (2021a) Creating learning environments free of violence in special education through the dialogic model of prevention and resolution of conflicts. Front Psychol 12. https://doi.org/10.3389/fpsyg.2021.662831

Duque E, Melgar P, Gómez-Cuevas S et al. (2021b) "Tell someone" to both women and men. Front Psychol 12. https://doi.org/10.3389/fpsyg.2021.673048

Elboj-Saso C, Iñiguez-Berrozpe T, Valero-Errazu D (2020) Relations with the educational community and transformative beliefs against gender-based violence as preventive factors of sexual violence in secondary education. J Interpers Violence 37:578–601. https://doi.org/10.1177/0886260520913642

Espelage DL, Valido A, Hatchel T et al. (2019) A literature review of protective factors associated with homophobic bullying and its consequences among children & adolescents. Aggress Violent Behav 45:98–110. https://doi.org/10.1016/j.avb.2018.07.003

European Commission, Directorate-General for Research and Innovation, Flecha R et al. (2018) Monitoring the impact of EU Framework Programmes – Expert report, Publications Office. https://data.europa.eu/doi/10.2777/518781. Accessed 01 Sept 2023

European Commission H2020 (2015-2018). SOLIDUS: "Solidarity in European societies: empowerment, social justice and citizenship". https://doi.org/10.3030/649489

European Commission H2020 (2020-2023). ALLINTERACT: Widening and diversifying citizen engagement in science. https://doi.org/10.3030/872396

European Commission H2020 (2021-2024). REFUGE-ED: Effective practices in education, mental health and psychosocial support for the integration of refugee children. https://www.refuge-ed.eu/. Accessed 26 Jun 2023

European Union Agency for Fundamental Rights (2020) EU LGBT survey. Available at: https://fra.europa.eu/sites/default/files/eu-lgbt-survey-results-at-a-glance_en.pdf. Accessed 22 Feb 2023

Flecha R (2014) Using mixed methods from a communicative orientation: researching with grassroots Roma. J Mix Method Res 8(3):245–254. https://doi.org/10.1177/1558689814527945

Flecha R (2015) Successful educational actions for inclusion and social cohesion in Europe. Springer, New York

Flecha R (2022) The Dialogic Society. The sociology scientists and citizens like and use. Hipatia press. https://hipatiapress.com/index/2022/12/04/the-dialogic-society/. Accessed 31 August 2023

Flecha R, Puigvert L, Rios O (2013) The new alternative masculinities and the overcoming of gender violence. Int and Mult J of Soc Sci 2(1):88–113. https://doi.org/10.4471/rimcis.2013.14

Flecha R, Soler M (2013) Turning difficulties into possibilities: engaging Roma families and students in school through dialogic learning. Camb J Educ 43:451–465. https://doi.org/10.1080/0305764X.2013.819068

Flecha R, Saso CE, Torras-Gómez E et al. (2022) The time of dialogic sociology. Int Sociol 37:457–474. https://doi.org/10.1177/02685809221111890

Flecha R, Tomás G, Vidu A (2020) Contributions from psychology to effectively use, and achieving sexual consent. Front Psychol 11. https://doi.org/10.3389/fpsyg.2020.00092

Flecha R, Puigvert L, Racionero-Plaza S (2023) Achieving student well-being for all: Educational contexts free of violence. NESET report. Luxembourg: Publications Office of the European Union. https://doi.org/10.2766/463854

Flecha García R, Racionero-Plaza S, Tintoré M et al. (2014) Successful actions in universities. Towards excellence taking into account the best universities as a model. multidisciplinary. J Educ Res 4(2):131–150. https://doi.org/10.4471/remie.2014.08

Fundamental Rights Agency (2020) EU-LGBTI II. A long way to go for LGBTI equality. https://fra.europa.eu/sites/default/files/fra_uploads/fra-2020-lgbti-equality-1_en.pdf. Accessed 01 Sept 2023

Gallardo-Nieto EM, Gómez A, Gairal-Casadó R et al. (2021) Sexual orientation, gender identity and gender expression-based violence in Catalan universities: Qualitative findings from university students and staff. Arch Public Health 79. https://doi.org/10.1186/s13690-021-00532-4

García-Carrión R, Padrós Cuxart M, Alvarez P et al. (2020) Teacher induction in schools as Learning Communities: Successful Pathways to teachers' professional development in a diverse school serving students living in poverty. Sustainability 12:7146. https://doi.org/10.3390/su12177146

Goldstein SB (2017) Stigma and stigma by association in perceptions of straight allies. J LGBT Youth 14:345–358. https://doi.org/10.1080/19361653.2017.1326867

Gómez A (2019) Science with and for society through qualitative inquiry. Qual Inq 27(1):10–16. https://doi.org/10.1177/1077800419863006

Gómez A, Padrós M, Ríos O et al. (2019) Reaching social impact through communicative methodology. researching with rather than on vulnerable populations: The roma case. Front Educ 4. https://doi.org/10.3389/feduc.2019.00009

Gómez-González A, Girbés-Peco S, Jimenez -González JM et al. (2022) "Without support, Victims Do Not Report": The co-creation of a workplace sexual harassment risk assessment survey tool. Gender Work Organ. https://doi.org/10.1111/gwao.12840

Gómez J, Latorre A, Sánchez M et al. (2006) Metodología Comunicativa Crítica. Barcelona, Spain: Hipatia

Greytak EA, Kosciw JG, Boesen MJ (2013) Putting the "T" in "resource": The benefits of LGBT-related school resources for transgender youth. J LGBT Youth 10:45–63. https://doi.org/10.1080/19361653.2012.718522

Grossman AH, Haney AP, Edwards P et al. (2009) Lesbian, gay, bisexual and Transgender Youth talk about experiencing and coping with school violence:

a qualitative study. J LGBT Youth 6:24–46. https://doi.org/10.1080/19361650802379748

Habermas J (1987) Theory of Communicative Action. Vol. I-II. Madrid: Taurus

IGLYO (2023) IGLYO Annual Report 2022. https://www.iglyo.com/resources/iglyo-annual-report-2022. Accessed 01 Sept 2023

Ioverno S, Bishop MD, Russell ST (2021) Does a decade of school administrator support for educator training on students' sexual and gender identity make a difference for students' victimization and perceptions of school climate? Prev Sci 23:108–118. https://doi.org/10.1007/s11121-021-01276-x

Ioverno S, Nappa MR, Russell ST et al. (2022) Student intervention against homophobic name-calling: the role of peers, teachers, and inclusive curricula. J Interpers Violence 37:19549–19575. https://doi.org/10.1177/08862605211042817

Iñiguez-Berrozpe T, Orejudo-Hernández S, Ruiz-Eugenio L et al. (2021) School networks of positive relationships, attitudes against violence, and prevention of relational bullying in victim, bystander, and aggressor agents. J Sch Violence 20:212–227. https://doi.org/10.1080/15388220.2021.1875842

Jackson C, Sundaram V (2019) Lad Culture in Higher Education: Sexism, Sexual Harassment and Violence (1st ed.). Routledge. https://doi.org/10.4324/9780203702901

Killelea McEntarfer H (2011) "Not going away": approaches used by students, faculty, and staff members to create gay–straight alliances at three religiously affiliated Universities. J LGBT Youth 8:309–331. https://doi.org/10.1080/19361653.2011.607623

King AC, Winter SJ, Chrisinger BW et al. (2019) Maximizing the promise of citizen science to advance health and prevent disease. Prev Med 119:44–47. https://doi.org/10.1016/j.ypmed.2018.12.016

Kosciw JG, Greytak EA, Bartkiewicz MJ et al. (2012) The 2011 National School Climate Survey: The experiences of lesbian, gay, bisexual and transgender youth in our nation's schools. Gay, Lesbian and Straight Education Network (GLSEN). https://files.eric.ed.gov/fulltext/ED535177.pdf. Accessed 01 Sept 2023

Kuntz F, Searle F (2022) Does bystander intervention training work? when employee intentions and Organisational Barriers Collide. J Interpers Violence 38:2934–2956. https://doi.org/10.1177/08862605221104530

León-Jiménez S, Villarejo-Carballido B, López de Aguileta G et al. (2020) Propelling children's empathy and friendship. Sustainability 12:7288. https://doi.org/10.3390/su12187288

López de Aguileta G, Torras-Gómez E, García-Carrión R et al. (2020) The emergence of the language of desire toward nonviolent relationships during the dialogic literary gatherings. Lang Educ-UK 34:583–598. https://doi.org/10.1080/09500782.2020.1801715

McCormick A, Schmidt K, Clifton E (2015) Gay-straight alliances: understanding their impact on the academic and social experiences of lesbian, gay, bisexual, transgender, and questioning high school students. Child Sch 37:71–77. https://doi.org/10.1093/cs/cdu028

McShane S, Farren M (2023) An exploration of teachers' knowledge and awareness of issues and barriers encountered in supporting LGBT+ students: a study in a catholic secondary school in Ireland. Equity Excell Educ 56(1-2):114–128. https://doi.org/10.1080/10665684.2023.2170301

Melgar Alcantud P, Puigvert L, Rios O et al. (2021a) Language of desire: a methodological contribution to overcoming gender violence. Int J Qual Meth 20:160940692110345. https://doi.org/10.17583/rimcis.2021.8305

Melgar P, Geis-Carreras G, Flecha R et al. (2021b) Fear to retaliation: the most frequent reason for not helping victims of gender violence. Int Multidiscip J Soc Sci 10:31–50. https://doi.org/10.1177/16094069211034597

Millett K (2016) Sexual politics. Columbia University Press

Molina A, Shlezinger K, Cahill H (2021) Asking for a friend: Seeking teacher help for the homophobic harassment of a Peer. Aust Educ Res:1-21. https://doi.org/10.1007/s13384-021-00492-2

Monaco S, Corbisiero F (2022) Urban sexuality across Europe. Do LGBT neighborhoods matter? Pol Sociol Rev 219:351–366. https://doi.org/10.26412/psr219.04

Morgenroth T, Ryan MK (2021) The effects of gender trouble: an integrative theoretical framework of the perpetuation and disruption of the gender/sex binary. Perspect Psychol Sci 16(6):1113–1142. https://doi.org/10.1177/1745691620902442

Munté A, Serradell O, Sordé T (2011) From research to policy: roma participation through communicative organization. Qual Inq 17(3):256–266. https://doi.org/10.1177/1077800410397804

Nadal KL, Issa MA, Leon J et al. (2011) Sexual orientation microaggressions: "Death by a thousand cuts" for lesbian, gay, and bisexual youth. J LGBT Youth 8:234–259. https://doi.org/10.1080/19361653.2011.584204

Nazareno E, Vidu A, Merodio G et al. (2022) Men tackling isolating gender violence to fight against sexual harassment. Int J Env Res Public Health 19:1924. https://doi.org/10.3390/ijerph19041924

Oliver E (2014) Zero violence since early childhood: the dialogic recreation of knowledge. Qual Inq 20(7):902–908. https://doi.org/10.1177/1077800414537215

Olweus D, Limber SP (2010) Bullying in school: evaluation and dissemination of the Olweus Bullying Prevention Program. Amer J Orthopsych 80:124. https://psycnet.apa.org/doi/10.1111/j.1939-0025.2010.01015.x

Padrós M, Garcia R, de Mello R et al. (2011) Contrasting scientific knowledge with knowledge from the lifeworld: the dialogic inclusion contract. Qualitative Inq 17(3):304–312. https://doi.org/10.1177/1077800410397809

Phillips TB, Ballard HL, Lewenstein BV et al. (2019) Engagement in science through citizen science: moving beyond data collection. Sci Educ 103:665–690. https://doi.org/10.1002/sce.21501

Racionero-Plaza S, Duque E, Padrós M et al. (2021a) "Your friends do matter": Peer group talk in adolescence and gender violence victimization. Children 8:65. https://doi.org/10.3390/children8020065

Racionero-Plaza S, Tellado I, Aguilera A et al. (2021b) Gender violence among youth: an effective program of preventive socialization to address a public health problem. AIMS Public Health 8:66–80. https://doi.org/10.3934/publichealth.2021005

Rahman M (2020) What Makes LGBT Sexualities Political? In Bosia MJ, McEvoy SM, Rahman M (Eds.) The Oxford handbook of global LGBT and sexual diversity politics (p. 15). Oxford University Press

Ramis-Salas M (2020) The debate about the human papilloma virus vaccine: the impact of an evidence-based communicative method on increasing free choice. Qual Inq 26(8–9):989–995. https://doi.org/10.1177/1077800420938861

Reale E, Avramov D, Canhial K et al. (2017) A review of literature on evaluating the scientific, social and political impact of Social Sciences and Humanities Research. Res Evaluat 27:298–308. https://doi.org/10.1093/reseval/rvx025

Rios O, Font-Palomar M, Flecha A et al. (2022) Violence against LGBTIQ+ people at universities: the need to uncover a silent reality. Trauma Violence Abuse, 15248380221111471. https://doi.org/10.1177/15248380221111471

Rivers B, Swank JM (2017) LGBT ally training and counselor competency: a mixed-methods study. J LGBT Issues Couns 11:18–35. https://doi.org/10.1080/15538605.2017.1273162

Roca-Campos E, Renta-Davids AI, Marhuenda-Fluixá F et al. (2021) Educational impact evaluation of professional development of in-service teachers: The case of the dialogic pedagogical gatherings at Valencia "On Giants' shoulders. Sustainability 13:4275. https://doi.org/10.3390/su13084275

Rodrigues-Mello R, Bonell-García L, Castro-Sandúa M et al. (2021) "Three steps above heaven? really? that's all tactic!" new alternative masculinities dismantling dominant traditional masculinity's strategies. Front Psychol 12. https://doi.org/10.3389/fpsyg.2021.673829

Rodríguez-Navarro H, Ríos-González O, Racionero S et al. (2014) New methodological insights into communicative acts that promote new alternative masculinities. Qual Inq 20:870–875. https://doi.org/10.1177/1077800414537209

Rodríguez-Oramas A, Morla-Folch T, Vieites Casado M et al. (2021) Improving students' academic performance and reducing conflicts through family involvement in Primary School Learning Activities: A Mexican case study. Camb J Educ 52:235–254. https://doi.org/10.1080/0305764X.2021.1973374

Rostosky SS, Black WW, Riggle ED et al. (2015) Positive aspects of being a heterosexual ally to lesbian, gay, bisexual and transgender (LGBT) people. Am J Orthopsychiat 85:331–338. https://doi.org/10.1037/ort0000056

Ruiz-Eugenio L, Toledo del Cerro A, Gómez-Cuevas S et al. (2021) Qualitative study on dialogic literary gatherings as co-creation intervention and its impact on psychological and social well-being in women during the COVID-19 lockdown. Front Public Health 9. https://doi.org/10.3389/fpubh.2021.602964

Seelman KL, Walls NE, Hazel C et al. (2012) Student school engagement among sexual minority students: Understanding the contributors to predicting academic outcomes. J Soc Serv Res 38(1):3–17. https://doi.org/10.1080/01488376.2011.583829

Senden M, Galand B (2019) Is peer mediation an appropriate response to school bullying? Rev Sci Education 45(3):112–139. https://doi.org/10.7202/1069642ar

Taylor K, Coulombe S, Coleman TA et al. (2020) Social Support, discrimination, and self-esteem in LGBTQ+ high school and post-secondary students. J LGBT Youth 19:350–374. https://doi.org/10.1080/19361653.2020.1812465

Tellado I, López-Calvo L, Alonso-Olea MJ (2014) Dialogic design of qualitative data collection for researching the mirage of upward mobility. Qual Inq 20(7):856–862. https://doi.org/10.1177/1077800414537207

The ICBOs and Allies Workgroup (2022) Understanding the impact of equitable collaborations between science institutions and community-based organizations: improving science through community-led research. BioScience 72(6):585–600. https://doi.org/10.1093/biosci/biac001

Torras-Gómez E, Puigvert L, Aiello E et al. (2020) Our right to the pleasure of falling in love. Front Psychol. https://doi.org/10.3389/fpsyg.2019.03068

Tucker JS, Ewing BA, Espelage DL et al. (2016) Longitudinal associations of homophobic name-calling victimization with psychological distress and alcohol use during adolescence. J Adolesc Health 59:110–115. https://doi.org/10.1016/j.jadohealth.2016.03.018

Tuyakova U, Baizhumanova B, Mustapaeva T et al. (2022) Developing emotional intelligence in student teachers in universities. Hum Soc Sci Commun 9. https://doi.org/10.1057/s41599-022-01173-w

UNESCO (2017) Moving forward the 2030 Agenda for Sustainable Development. Diversity of Cultural Expressions. https://en.unesco.org/creativity/files/unesco-moving-forward-2030-agenda-sustainable. Accessed 22 Feb 2023

Up4Diversity Consortium (2022). Up4Diversity website. https://imse.urv.cat/up4diversity/training-for-educators/. Accessed 01 Sept 2023

Valido A, Rivas-Koehl M, Espelage DL et al. (2021) Protective factors of homophobic name-calling and sexual violence perpetration and victimization among LGB, trans, and heterosexual high school students. Sch Ment Health 13:602–615. https://doi.org/10.1007/s12310-021-09453-7

Valls R, Puigvert L, Melgar P et al. (2016) Breaking the silence at the Spanish universities: the first research about violence against women. Violence Against Women 22(13):1519–1539. https://doi.org/10.1177/1077801215627511

Vidu A, Puigvert L, Flecha R et al. (2021) The concept and the name of isolating gender violence. Multidisc J Gender Studies 10:176–200. https://doi.org/10.17583/generos.2021.8622

Villarejo-Carballido B, Pulido C, de Botton L et al. (2019) Dialogic model of prevention and resolution of conflicts: evidence of the success of cyberbullying prevention in a primary school in Catalonia. Int J Environ Health Res 16:918. https://doi.org/10.3390/ijerph16060918

Williford A, Elledge LC, Boulton AJ et al. (2013) Effects of the KiVa antibullying program on cyberbullying and cybervictimization frequency among Finnish youth. J Clin Child Adolesc Psychol 42(6):820–833. https://doi.org/10.1080/15374416.2013.787623

Yuste M, Serrano MA, Girbés S et al. (2014) Romantic love and gender violence: clarifying misunderstandings through communicative organization of the research. Qual Inq 20. https://doi.org/10.1177/1077800414537206

Zubiri-Esnaola H, Gutiérrez-Fernández N, Guo M (2021) "No more insecurities": New alternative masculinities' communicative acts generate desire and equality to obliterate offensive sexual statements. Front Psychol 12. https://doi.org/10.3389/fpsyg.2021.674186

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Author contributions

OR-G has contributed to the conception and design of the work, he has rewritten the discussion and the state-of-the-art after the peer review, and he has established the final approval of the version to be published. JCP-A and LNS have been involved in the final revision of the manuscript. GLT has written the state-of-the-art, methods and results. He has also conducted the fieldwork in Spain. AA has collected the data in Cyprus and has contributed to its analysis.

Competing interests

The authors declare no competing interests.

Ethical approval

The study was performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

Informed consent

Freely given, informed consent to participate in the study was obtained from all participants. Participants in the questionnaire responded affirmatively to providing consent in order to continue with the survey; participants in the interviews signed a specific informed consent.

Additional information

Supplementary information The online version contains supplementary material available at https://doi.org/10.1057/s41599-023-02117-8.

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