

A Design for Social Change framework: Improving the educational climate of students with depressive symptomatology

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Abstract. The mental health of university students is increasingly in the spotlight, particularly after the Covid-19 pandemic. This phase of their lives coincides with the presence of specific psychiatric challenges, and depressive symptoms are particularly relevant in these students. This study aims to develop a design framework for social change that seeks to intervene in the educational climate of students with depressive symptoms. Integrating the social change model with design methodologies aims to lead to positive changes in the school environment for young people, involving the participation of the school community.

Keywords: Depressive Symptomatology, Educational Climate, Design for Social Change.

1 Introduction

Students' mental health can be affected due to stress during the university phase of education (January et al., 2018). This phase happens at an age when several psychiatric disorders emerge, such as depressive and anxious symptoms (Medlicott et al., 2021; Hamaideh et al., 2022). University students with low levels of mental health are

associated with poor academic performance, as well as the risk of dropping out of studies (Bruffaerts et al., 2019). Depressive symptoms have a negative correlation with emotional stability and a positive correlation with vulnerability to stress factors (Zivin et al., 2009). There are indecisions related to asking for a professional to help among students who present those symptoms, which represents a challenge in implementing early interventions (Bruffaerts et al., 2019; Lipson et al., 2019; McLafferty et al., 2017; Rickwood et al., 2007). If they do not receive orientation, symptoms may persist for extended periods (Newbury-Birch et al., 2002). The most common barriers that exist for students to ask for professional help are stigma, embarrassment and low mental health literacy (Bonabi et al., 2016; Clement et al., 2015; Gulliver et al., 2010).

In a collaborative study between RYSE and ANEP - National Association of Psychology Students (2023), a mental health inventory was applied to the university population in Portugal, which revealed that almost half, 48%, have low mental health values and severe psychological symptoms such as depression, anxiety, or loss of control. Another study carried out by the University of Évora focusing on depression and anxiety in Portuguese university students demonstrated that this target group presents higher levels of depressive and anxiety symptoms (Amaro et al., 2024) compared to studies carried out before the COVID-19 pandemic (Bártolo et al., 2017) and during the pandemic (Laranjeira et al., 2021; Machado et al., 2023). This study also revealed that one in four students have suicidal ideation and the desire to hurt themselves in some way, and 27% reported that depressive symptoms cause great or extreme difficulty in academic life.

The Programme for the Promotion of Mental Health in Higher Education (2023) revealed that 15% of higher education institutions still lack mental health services, highlighting economic reasons such as a lack of space and human resources. Only 19% of the services have specific itineraries for access to preventive/therapeutic responses, most focusing on identifying urgent care or referring situations of greater risk or severity.

Mental health technologies, such as mobile apps and websites for depression and anxiety care, have been developed and tested with university students (Firth et al., 2017; Lattie et al., 2019), but a gap between what research discovered and what in practice still exist shows that most technological tools end up not being used in real-world environments. Through monitoring emotions, Lee and Hong (2017) impacted the mental health of university students. They expressed several emotions using plasticized clay and considered the solution helpful for observing and reflecting on their emotional state. Researchers also identified opportunities for peer support through technology to impact mental health by conducting interviews with people with mental health problems who use technology and a design activity where these people imagined a tool to help someone with these problems participate in peer support (O'Leary et al., 2017). Another solution was the "Reviving Pod", a design solution to create a private place for students to communicate virtually, relax or meditate. The results of this solution revealed a positive effect on students' mental health and well-being (Mohamed et al., 2023). The authors of this solution used literature review and focus groups to understand how they can respond to the relationship between students' mental health and their performance; they also used the Grasshopper program to design, simulate and

visualize and then presented the proposal, using feedback for the final proposal. Another study revealed that using student vignettes can show barriers regarding mental well-being and support the community in identifying learning design considerations; an online platform was also created where students can create their vignettes (Lister et al., 2021).

The university community is a significant part of university students' social lives. The connection between students and that community is also called “school belonging”, which refers to the extent to which students feel accepted, respected, included, and supported in the school social environment (Goodenow & Grady, 1993). A lack of this sense of belonging is associated with worse mental health (Gopalan & Brady, 2020). Young adults are particularly affected by loneliness (Cacioppo et al., 2006, 2010; Matthews et al., 2016), and studies have identified that a lack of this sense of belonging can lead to depressive symptoms (Parr et al., 2020). How an educational environment is understood or experienced is called "climate", which influences students' behaviour and can contribute to their performance, satisfaction, and success. (Genn JM, 2001) The learning environment includes different dimensions: physical - classrooms and facilities; social - interaction with teachers and peers; and psychological - perceptions and individual attitudes towards learning (Zakaria et al., 2010).

This article aims to present a design for social change framework to improve the educational climate of students with depressive symptomatology. It is part of a project that aims to understand the role of Human-Centered Design (HCD) and Co-Design in this context.¹ This article intends to answer this question: How can a multifaceted support system be designed and implemented within educational institutions to address the specific needs of students exhibiting depressive symptomatology while promoting a positive and inclusive educational climate?

2 Methodology

There is a growing trend for designers to use design discipline as an intervention tool in social issues through design methods that answer complex social challenges (Yee, J. et al., 2013). Design began to be perceived as an incentive for significant changes in areas such as education and health, among others (Irwin T. et al., 2015). Non-experts in the field of design play a fundamental role in creating new forms of organization, due to their needs or their natural ability to design. This number of non-experts but with experience and knowledge is increasing and when accompanied by design experts they lead to a new form of co-design process. (Manzini, 2015)

This article proposes the creation of a design framework for social change related to the improvement of the educational climate for students with depressive symptomatology. It aims to merge the Social Change Model (SCM) with Design Thinking processes.

The SCM framework (Figure 1) was created to teach leadership (HERI, 1996); it provides a framework where leadership is viewed more democratically (Dugan &

¹ Project approved by the ethics committee of the Polytechnic of Leiria.

Komives, 2007), designed to be inclusive of all levels of leaders and to be seen as a process (HERI, 1996). It advocates for the principles of social justice, equality, self-awareness, empowerment, cooperation, civic engagement, and dedication to the public good, encompassing three separate dimensions of leadership development: Individual, Group, and Community values (HERI, 1996).

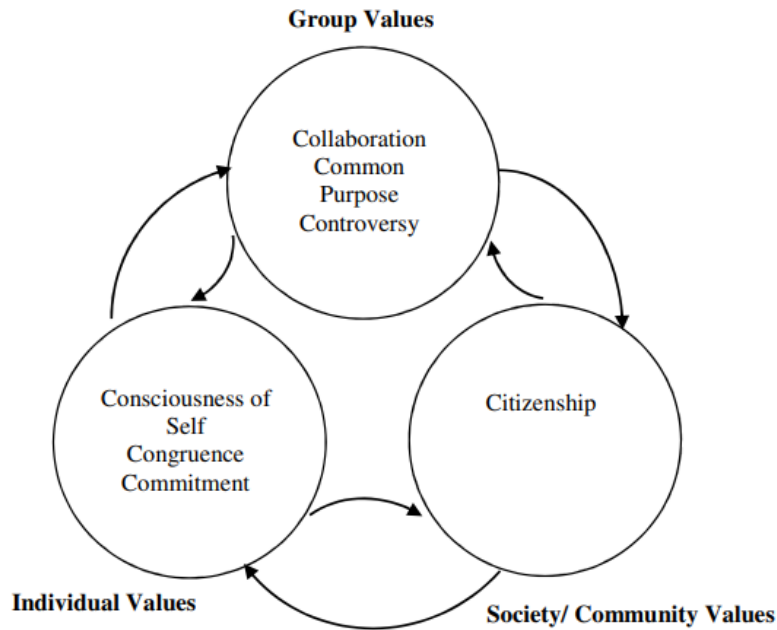


Fig. 1 - Social Change Model (Helen & Alexander Astin, 1993)

With the proposed framework (Figure 2), we intend to reinforce the importance of individual values using HCD. This creation process starts by identifying a need and developing around the needs felt by the user, in this case, the educational climate of young people with depressive symptoms. HCD is increasingly recognized as a valuable contributor when intervening in today's complex health challenges (Bijl-Brouwer et al., 2017). HCD aims to play a decisive role in discovering and understanding the problems, challenges, and opportunities that exist in the experiences of young people with depressive symptoms in the educational environment.

Co-Design aims to highlight group values, and diverse experts and potential users come together to cooperate creatively. Users are involved in the design process, with their experiences placed at the center (Visser et al., 2005). This methodology allows the opinions and concerns of students affected by the problem to be incorporated (Saad-Sulonen et al., 2018). When the community is involved in decision-making, it tends to be more supportive of maintaining the solution in a long term (Armstrong et al., 2021).

Participatory Design is considered a matter of social justice, which changes students' mindsets, leading them to take an active role through participatory and inclusive design (Reynant et al., 2021). The development of collaborative strategies involving the school community (teachers, students, and staff) and the designer intends to improve the school environment for young people with depressive symptoms.

The empathy phase of Design Thinking includes the community values of the social change model, namely social relationships, learning interactions, and a sense of belonging and security. During this phase, the literature review can be a valuable tool for understanding these issues. Studies on mental health in educational institutions and effective interventions can be analyzed.

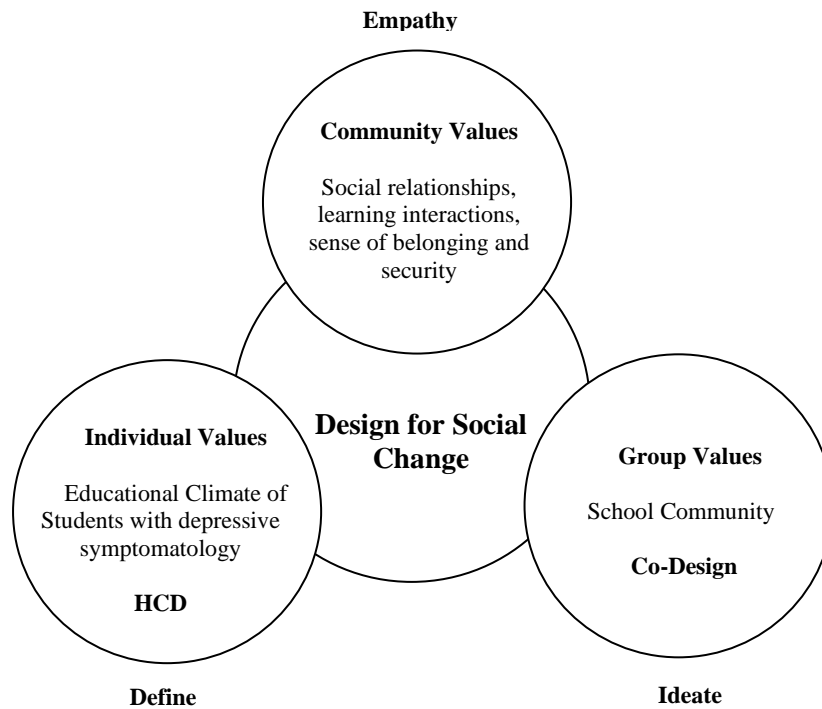


Fig. 2 - Design for Social Change Framework

The school community, when participating in co-design processes, can lead to transformative experiences in the lives of students with depressive symptoms. By using these processes, the aim is to create a climate of empathy and support in the school community. In summary, Design Thinking and SCM framework share the same focus on understanding needs and searching for solutions. The steps of Design Thinking can be related to the community, individual, and group values presented in this model.

3 Preliminary Studies

Preliminary studies conducted by the authors in 2023 in the Portuguese Polytechnic, Caldas da Rainha School of Arts and Design (ESAD.CR), revealed the importance of understanding the university institution's student experience and the school community's participation. These studies follow a strategy that leads to the design of elements of the system that increase its visibility, thus making visible through forms of communication, what is not visible in itself (Manzini, 2015).

3.1. "The Sound of War – Design for the Prevention of Suicidal Ideation"

A project called "The Sound of War - Design for the Prevention of Suicidal Ideation" was carried as part of the 'User Experience Design in Health' discipline, of the 'Design for Health and Well-being' master's programme in 2023. This project started by using podcasting. Podcasting is a way to provide informative content about mental health to the public. One advantage of using podcasting for suicide prevention is that the content can be automatically subscribed and delivered to listeners. Then, listeners receive the updated episodes without effort and are available whenever crises arise. These podcasts provide information about the warning signs of suicide and provide prevention tools (Luxton et al., 2011). The podcast "The Sound of War" wanted to reach young people who are at risk through the approach of various perspectives involving suicide. Throughout the episodes, three guests personally recruited at the school aged between 19 and 29, two male and one female who had already dealt with these issues, told their stories and provided listeners with a tool that could help them through simple activities that promote well-being. Three episodes were held, and each guest presented the tools that helped them: creating a list of difficulties, a support group, and a list of mental health-themed films.

After finishing this podcast, a communication strategy (Figure 3) was disseminated using the concept of transmedia, which represents a process when various elements of the same narrative are systematically dispersed across different platforms to create a unique entertainment experience (Jenkins, 2003). Two posters were placed on the walls of a corridor; the first poster presented the quote, "I have an anxiety disorder, and I have difficulty taking public transport; I still managed to get to the School of Arts and Design", and then the question, "And you, what difficulty have you overcome in recent times?". Afterwards, students could participate by posting post-it's with their difficulties overcome. The poster also briefly explained the podcast and a QR code to access it.

Then, students would participate in one of the tools existing in the podcast without knowing it, and there is a complement in this means of communication to the podcast. Another poster was put up with the same dynamic but concerning another tool of the podcast with the quote, "Jonah Hill's documentary *Stutz* helped me understand the importance of therapy and inspired me to create my podcast", and then the question "what about you, what film/documentary has inspired you in recent times?" Regarding the first question, "And you, what difficulty have you overcome in recent times?" the students highlighted their university experience, namely the relationship

with teachers and the educational institution itself; they also highlighted the emotional control, namely the control of feelings of anger; negative love relationships and friendships; monetary issues involving the payment of university; their self-esteem, including body acceptance; anxiety, particularly in public speaking and giving oral presentations; family issues. The students also revealed a case of sexual abuse, living with an ostomy, the fact of being homosexual, being run over and a job.



Fig. 3 — Communication strategy to disseminate the project “The Sound of War” using the concept of transmedia.

3.2. Canteen Meal Experience at School of Arts and Design, Caldas da Rainha

Another study conducted by the authors in the same Portuguese Polytechnic wanted to understand the students' experience in the canteen. Entering higher education can involve several risks to the health of university students (Macaskill, 2018). Academic context food services could be a source of stress, particularly for individuals with specific dietary needs who find few suitable alternatives (Brown et al., 2010; Olarnyk & Elliot, 2016). Healthy options may be limited, which causes students to make poor healthy food choices (Price et al., 2016; Prodegeon & Whitehead, 2013). Studies reveal (Geaney et al., 2013; Peterson et al., 2010; Thorsen et al., 2010) that university canteens are essential places for health interventions. Some studies (Binge et al., 2012; Gramling et al., 2005; Rutzler et al., 2012; Tian et al., 2008; Tian et al., 2014) highlight the link between university food service provision, student experiences and well-being. An online survey sent by e-mail to students in the second semester was carried out to collect data about the experience in the canteen, which revealed that only 5.7% of students eat in the canteen every day, 48.7% usually bring food from home and 27.5% are not aware of the existence of the ticket purchase platform. Also, during lunch hour, five contextual interviews were carried out with students, three males and two females aged between 19 and 25. In interviews, students revealed that the food in the canteen is of poor quality, has little flavor or lacks hygiene. The flow of withdrawing money, loading the device

to purchase a ticket, and finally going to the canteen causes frustration. The food advertised on the menu is often not what it is in the canteen, and the queues, both for loading the device and for lunch, present another point of frustration during lunch hour.



Fig. 4 - Mapping all findings acquired from the interviews and creation of the Affinity Map.

A mapping (Figure 4) of all findings acquired from these interviews was carried out. After surveying the first findings, we used the patterns found to create an affinity map; in turn, we chose some recurring problems and held an “How Might We” workshop. This HMW workshop lasted a total of 2h30, with four students, two males and two females, both design students with ages between 25 and 28. This HMW would aim to come up with a final solution on how to improve the canteen experience. The questions were, “How can we improve the taste of food without interfering with the kitchen?” “How can we make loading devices easier by reducing time in queues?” and “How can we avoid hair or plastic in our food?”. With the help of the HMW workshop, the students came together to define a solution that integrates some of the ideas suggested previously, which would be a digital kiosk where you could upload your device, see your balance, be able to buy your ticket, be able to check in real-time the food in the canteen, you can buy seasonings to add to the meal, and put a feedback/suggestion box.

4 Discussion and Conclusion

Preliminary studies show the importance of creating a design for social change framework. These studies provided insights into students' needs and experiences, as well as an idea of the context in which the intervention will be implemented. In the context of improving the educational climate of students with depressive symptoms, preliminary studies made it possible to understand some problems faced by students, which include emotional and academic problems and concerns about their well-being. The Sound of War – Design for the Prevention of Suicidal Ideation project allowed us to understand the student's experience at the institution and the school community's

participation. The transmedia communication strategy made it possible to maximize the project's reach and lead to community participation. Just as the study of students' experience in the canteen also helped to understand the importance of understanding students' experiences and needs regarding food on campus. Their collaboration was also helpful in finding a solution that met their needs.

Given the limitations in existing solutions, the need for a design framework for social change becomes relevant. This framework can offer a more comprehensive approach to students' mental health challenges, considering individual needs and structural factors that influence their well-being.

This design framework for social change concerning the educational climate of students with depressive symptoms integrates relevant concepts from the SCM with design methodologies. This approach is a multifaceted issue and aims to address it entirely, considering individual values, group and community ones. HCD stands out as a fundamental component of the framework, revealing the importance of understanding the needs and opportunities of students with depressive symptoms in the educational environment. Co-Design is highlighted as a strategy that will emphasize group values and collaboration between different stakeholders (teachers, students, employees, and designers). Co-Design aims to promote a feeling of collective responsibility in improving the educational climate of these young people. Overall, the framework has significant potential to create a more inclusive educational environment for students with these symptoms. By using the contribution of the school community and their experiences, designers can generate solutions that intervene in problems and can lead to positive social change in this educational environment.

5 Future Work

After the initial literature review, the formulation of the design framework for social change and the preliminary studies, the intention is to begin the field study in the entity where the preliminary studies were carried out. Initially, we intend to carry out an interview with the entity psychologist to understand the state of students' mental health and their educational climate, then carry out a questionnaire for students with the following instruments "Hospital Anxiety and Depression Scale (HADS)" and "The Dundee Ready Educational Environment Measure (DREEM)". By combining HADS with DREEM in this research, it is expected to gain an understanding comprehensive assessment of students' mental health as well as their educational climate. It is intended also throughout this process to carry out observations at the entity to understand how the school community is distributed and role-playing sessions with teachers and staff presenting them a scenario that involves the educational climate of students with depressive symptoms. Finally, we intend to hold Co-Design workshops, first with students where they will generate ideas to improve the educational climate and then a second with teachers and staff where ideas will be generated on the ones identified by the students. This entire process is carried out under the supervision of a psychologist in the work team.

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