

Qualitative Acceptance and Co-design of an App Aimed at Improving Emotional Intelligence for Precarious Workers

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Abstract. In the discussion on the work competences, the emotional competences are acquiring only in the last years a concrete popularity, although its importance is demonstrated. The COVID-19 pandemic increased the effect on works and on workers uncertainly, enlarging the needs of emotional competence tools, accessible to all category of users with a special focus on those with social or economic fragilities. Based on this background the project called EMOTION.exe aims to develop and assess an “Emotional Training Gym”, a safe environment, designed for the acquisition of new socio-emotional competences. It is freely browsable that leaves a high degree of autonomy using digital tools, tailored for the users with a high risk of social exclusion or job insecurity. The article describes a study performed with focus groups for the qualitative acceptance of the EMOTION.exe software and the consequent co-design with the potential user for further improvement. The results show that the tool is highly accepted by the user groups, with some concrete proposals for improvement based on the needs of the participants that includes the centrality of the artificial tutors, the inclusion of gamification aspects, the redesign of the graphical layout and proposals of videos to be added in the multimedia library.

Keywords: emotional competence, emotional intelligence, ICT tool, co-design

1 Introduction

Emotional competences are important features for our lives including for the connection with the work. Despite this, soft skills are commonly seen as central and in the last years are acquiring a significative attention in relation with the emerging digital tools in working spaces and, consequently in relation with the digital skills [1]. What is less under the lens in the traditional training and in the workspaces are the emotional competences. The emotional intelligence is the ability to perceive, assess and express emotions and at the same time to monitor and recognize them in order to facilitate the cognitive tasks and are important for a management and a regulation of the emotions [2].

The first research on the “Emotional Intelligence” is in the first years of nineties, with the studies of Peter Salovey at Yale University [3] [4]. The following studies demonstrated that the emotional competences improve in a substantial way the teamwork, and in particular the teamwork effectiveness [5]. This is not the unique aspect where emotional intelligence has a relevant impact, it is highly related to the creativity [6] to the well-being at work [7] and to the social interactions [8]. In addition, the individuals that lack of emotional skills in this field have potential to perform bullying acts and other social exclusion behaviours [9].

The Salovey’s works have an impact also in neurosciences studies that demonstrated how the social inclusion has a correlation with cognitive abilities and, in addition, to the integration with the emotional abilities [10].

Studies demonstrate as the emotional intelligence is an important indicator for the academic [11] and professional success [12].

This background is important to focus the attention on the specific training on emotional intelligence. Commonly, this challenge is faced using a lot of courses aimed to improve the emotional intelligence and for the learning of the main emotional competences.

1.1 State of art

Nowadays, the training regarding the emotional competences is broadly used for the management in companies and children at school in U.S.A. and in North Europe. These training courses are typically very expensive and are addressed for a very tiny range of people. In particular, adult and young participants with a high degree of social exclusion have less possibilities to benefit from the courses on emotional intelligence. In these categories follow all people that have a precarious work or are unemployed. This scenario has a great impact in the last years where the precarious work is increased [13] due to the increase of non-standard jobs and of low-quality employment [14] and the declining quality of standard jobs [15].

This background has an additional degree of complexity due to the COVID-19 pandemic that increases the precarious situation at work [16]. The workers with flexible employment relationships are neither officially laid off, but there is the application of paid sick leave or the offer of short-term work [17]. This situation affects negatively on people that have risk of social exclusion and to all people with more fragilities. Members of these categories needs specific emotional competences in order to manage the difficulties that they need to face in their lives under the personal, social, working point of view.

The idea is to provide these competences developing methods and applying innovative technologies, allowing to offer to these categories of people training tools for the improvement of emotional intelligence with non-expensive solutions.

This assumes a particular relevance in Italy, that is the country involved in the present study, where the gross national product is ranked at the last places in the EU-27, where the workers and the youth that enter in the labour market have to face a great difficulty to gain a stable position.

At international level, a lot of players are developing solutions and software tools in order to manage the emotional competences and the mental disorders. A typical example regards the software developed by the Yale Universities that offers an online cognitive-developmental support [18]¹ The online and digital tools that support the acquiring of emotional competences are emerging and also their positive effects are demonstrated by studies. [19, 20, 21]. The declared objective is to reduce the therapeutic cost, improving the quality of intervention and obtaining the advantages from the digital technologies (tracking, automated detection of specific behaviour, use of artificial intelligence modules, etc.).

With the large diffusion of smartphones and tablets, these digital software are in the form of applications on Android and iOS systems. In the market are different solutions in this context. The most common are the apps that are related with the mindfulness principles and help the user to control own day with breathing exercises and meditation. The most famous is the app “Calm”² that has effects in reducing stress in some categories of users [22]. Other solutions are bots able to give psychological assistance by chat, called emotional help assistants. Some examples are WoeBot³, Wysa⁴ and Youper⁵. These apps allow to set a daily check of the emotional status and to conversate with chat-bot that support in the understanding of the state of stress or emerging cognitive distortions. These apps allow the proposal of very short tests for the assessment of the state of specific psychological factors (for example the perceived level of tiredness).

As we stated, this low-cost solutions could have an impact on the wide target we presented in this introduction, however it is important that directly these users could support the development of a tool in this field, giving feedbacks, considering new proposals, assessing the efficacy of the digital tools. In this view, seems central the methodology of the co-design [23] that is design approach that aims to actively involve all the potential stakeholders in the project design. The final objective is to contribute to guarantee that the product meets their needs and it is usable by the user groups. The co-design and the participatory design are approaches that focus on the processes and the procedures of the design instead of the style of design. In the participatory design, the participants work together with researchers and developers in the innovative process.

2 EMOTION.exe project

As described in the previous paragraphs, the needs of a broad range of users is to employ online and digital tools for the acquisition of emotional competences is emerging in the last years. The proposal of the EMOTION.exe software aims to support these target groups to face situation that could be difficult for their lives, as the

¹ <https://www.ycei.org/>

² <https://www.calm.com/>

³ <https://woebothealth.com/the-app/>

⁴ <https://www.wysa.io/>

⁵ <https://www.youper.ai/>

first job-search, the loss of the job or the precarious and flexible work. This context is crucial in this period because the impact of the COVID-19 pandemic that had a profound sign in labour market, with impact on the people, producing new precarities, new unemployed and complicating the work life. The impact is also on social relationship, that changed during the lockdown periods that happened in most of countries.

The idea of EMOTION.exe is to propose a positive approach in order to support the first work research or the management of precarious jobs under an emotional point of view, helping to explore new interests and motivations.

The project, funded by Regione Lazio, has the aim to develop and assess an “Emotional Training Gym”, a safe environment, freely browsable that leaves a high degree of autonomy using digital tools. The users with a high risk of social exclusion or job insecurity are enabled to acquire new socio-emotional competences.

In the EMOTION.exe project, the authors have individuated three different targets that suffer because the job insecurity:

- young researchers without a stable position;
- young unemployed;
- adults with precarious work.

The gym environment proposes emotional exercises that allows an auto-regulation about emotions. The application is designed with a section where the user could manage the day activities, another section is designed with exercises for the detecting of cognitive traps with related exercises of mindfulness, other sections focus on the mood-tracking. Other parts of the software allow training activities that includes the creative auto-biography writing, the diary methodology and videos for learning some specific socio-emotional competences.

The software is designed for personal computers and for devices that use Microsoft operative systems and could be downloaded by the users⁶.

When a new user log in the software for the first time, the system runs a questionnaire regarding the emotional competence. All the experiences throughout the EMOTION.exe gym are led by an artificial intelligence module, an “intelligent” tutor that guides the user in all the sections of the software, acquiring a double role of an interactive tutorial and increasing of the user motivation with feedbacks and recommendations.

The software includes the following sections:

- Multimedia library: the user could browse videos and exercises in order to improve their emotional regulation.
- Emotional exercises: these exercises are grounded on the recognition of the emotional taps and on the management of those with different tools that include taking notes of events, mindfulness and respiration exercises and, finally learning videos on emotional behaviours.
- Dairy log: in this section the user is enabled to track own emotional profile day by day and with the possibility to revoke the events.

⁶ stelt.smarted.it/dev/Emotion200520.zip

- Write a story: this section helps the user in writing of story using a structured template and a guided procedure with the support of innovative IT tools.

3 Methods and materials

In this study we used one of the most common qualitative tools used in the psychological disciplines: the focus group methodology. Focus group is qualitative methodology for collecting data, based on the information that emerge from a group discussion about a topic or argument that the researcher aims to explore. Focus group could be defined as a discussion planned with attention in order to gain information on a specific area of interest.

For the activity of this study, the authors involved participants that adhere to the three target groups of the EMOTION.exe project, with knowledge in the psychological sector (students in psychology, researchers in areas related to psychology, workers in the psychological field), with the aim to have expert feedbacks in a co-creation approach. Consequently, the users have a twice effect, they have the possibility to assess the software as users in the target groups and having competence in psychology they could give an informed inputs for the improvement of the software.

The authors organized three different focus group for each target:

- Young researchers (Post-doc or PhD students) [Group A]
- Adults having precarious work (Private professionals in psychology) [Group B]
- Young unemployed (Students in Psychology in last year of degree course) [Group C]

Each focus group had a duration about 1,5/2 hours. It was performed online due to the COVID-19 pandemic restriction in the period between March and May 2020. The online meeting room was created with Zoom⁷. All the potential candidates were contacted by mail and during the focus sessions had the camera turned on.

During the focus group the researchers recorded the sessions, after the collection of written informed consent by all the participants. Each session was led by a researcher of the group that proposed the discussion stimuli to the participants (based on the scheme defined by the research group) with predetermined questions and in a sequential way, from the less structured to the most structured. The questions were proposed in order to allow time of opinion elaboration and without influencing or suggest any potential answer. Another researcher had the role of observer and support in the focus group because he had more competences regarding the technical aspect of the software. In particular, the observer took notes and considered the following qualitative elements:

- General mood of the meeting.
- Main topic emerged.

⁷ Zoom.us

- Non-verbal reactions of agree or disagree about the specific arguments in discussion.
- Degree of engagement.
- Level of attention on the discussed topic.

The recorded sessions were transcribed after the listening. The transcribed scripts were delivered by the observer and, next, it was revised by two reviewers in order to find distortions and guarantee the accuracy of the transcription. After this task, a qualitative systemic analysis was performed for each focus and using the methodology of the progressive abstraction were identified the main topic emerged from the focus group.

From this task was extracted ed itemized the topic in micro-categories. The micro-categories were grouped, underlining the connection, and defining macro-categories. As described in the previous sections, the focus groups involved three different target groups. The number of participants was variable. The total number of participants is thirteen, six of the Trial C (Young unemployed), five of the Trial A (Scientific researchers), two from Trial B (Adults with precarious work) with age between 24 and 36 years old.

All the participants have expertise and are in the same work field in order to potentially hypothesize the application in their future (or present) work.

4 Results

After the analysis with the progressive abstraction of the main topic merged from the focus group, we defined the following items:

- Graphical aspect and general layout.
- First questionnaire.
- Life coach assistant.
- Section “Emotional exercises.
- Section “Diary”.
- Section “Writing a story”.
- Section “Multimedia library”.
- Usability of the software.
- General suggestions for improvements.
- General considerations.

The user considered the graphical aspect of the software addressed for adolescents or however for young users, less for adult users. The common consideration is that the graphical layout contains too colors that bring connection to the school. (See Fig.1)

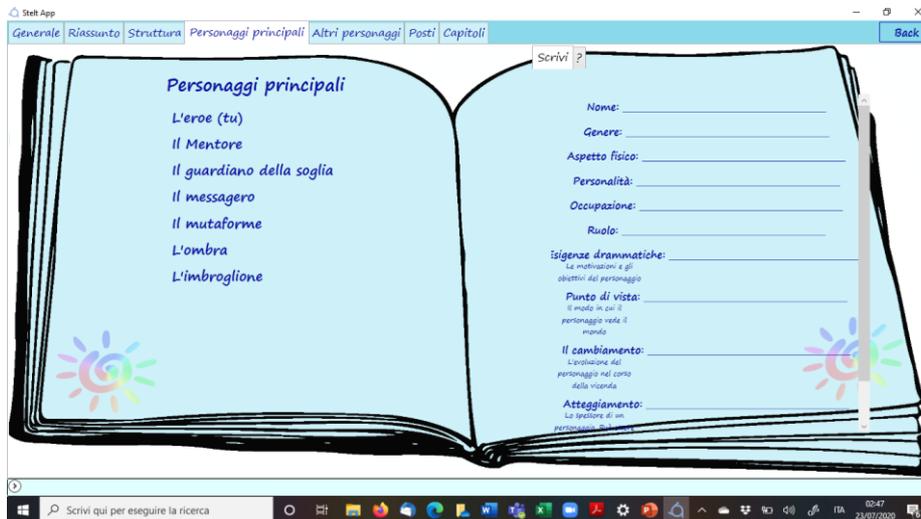


Fig. 1. The screenshot of the section “Write a story” of Emotion.exe software

The initial test was criticized by all the groups because is not well described and the request is not clear. It is considered as useful tool when improved.

The life coach assistant, that helps the user in browsing the software and promotes activities based on previous interactions with the tool, is considered as highly important as motivator and a good guide for the description of each activity This is a common perception from all the participants and all the user groups. The life coach is crucial for generating comparisons and references during the path. The participants consider it important for having a continue support during the activities that could be complicated at the first impact.

The emotional exercises are considered as highly useful for the aim of the project, but the participants asked to connect them to specific activities as the transversal skills and the soft skills. Although the exercises are well ranked, the groups (in particular the Trial C) consider important to simplify the exercises reducing the length. Some participants consider the videos, which support the emotional exercises, too theoretical. The group B criticized some components of the section “emotional exercises”, in particular, they agreed that in some cases the requests are too complex for the users without a sufficient explanation or psychological competences.

Regarding the section called “Diary” the groups appreciated the autobiographical contents but there is the request of a higher interaction with the interface.

For the section “Write a story” (see Fig. 1) the groups consider it an important feature of the app and propose to give some inputs (videos, photos, personal pictures, etc.) as a trigger for the writing task. The groups considered in different way the usability of this section: the group A and C consider it too complex; group B consider the structure simple and well-defined. However, all groups proposed a step-by-step procedure as an improvement of the usability of the section.

In the “Multimedia Library” the groups accepted as useful the section and proposed some new items for this video library, proposing sections in a co-creation dynamic. The proposed items are video about: time-management, competences related to job search, CV drafting, meditation, mindfulness, body-scan, body language, cognitive biases, film clips, music-videos related to the emotions.

Regarding usability all the groups considered it sufficiently easy-to-use, with a quick installation and easy tasks. Nevertheless, there is a request from all the user groups, about guided procedures for browsing the sections and a possibility to personalize the experience (i.e. unblock some contents).

An important topic about the focus group were the suggestions. The group A proposed a section for the time-management and the schedule of the activities (that they consider very important for the potential target group) and a section that allows a contact with psychologists. The group B proposed more feedbacks at the end of each section by the artificial tutor and the possibility to add a section with the tracked data that could be browsed by the psychologist and used as an additional input for the psychological intervention. The group C considered important the inclusion of gamification elements and the personalization. An additional proposal was to design exercises grounded on the relation between emotions and videos or songs.

In term of general considerations, there is no agreement on the best platform where the software should be delivered, some participants preferred on mobile, other on PC. The software is considered as a useful tool for a positive reflection but in some areas, it is necessary a guide for a concrete exploration of the tool and a better recognition of emotions.

5 Conclusions

The trials with the mentioned groups was useful for an assessment of the software Emotion.exe that is addressed to groups of adults in precarious work or unemployed to deal with self-emotions and facing situations that could be difficult for their lives (i.e. the first job-search, the loss of the job or the precarious and flexible work). The participants had the role to assess the software, giving feedbacks and propose new features in a co-creation approach.

After the trials, the software is considered useful for the target group and some features are seen as important, like the recognition of emotions, the reflections on their behaviors, the guided section for writing and the richness of the app. At the same time there are some points that the target groups considered as the weak point. At the first point the graphical aspect, that is perceived not addressed for adults with the proposal to redesign the layout in black-and-white or using less colors. Another weak point is the length of the “emotional exercises”, in this case the proposal is to simplify the section.

Finally, all the users considered central the role of “Life Coach”, the artificial tutor that guides the user and increase the motivation to browse and use app, with feedbacks or gamifications elements.

Based on these feedbacks the researchers will update the app with the proposals emerged, in a co-design approach. In this view also the section “Multimedia Library” will be enriched with the videos proposed by the users.

The trials bring positive consideration of the Emotion.exe app from the potential users of the project, supporting an active involvement of the target groups that will continue during all the lifespan of the project.

6 Acknowledgment

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