

OCAD University Open Research Repository

Faculty of Design

2019

Discussing the potential therapeutic effects on design for psychological wellbeing: A case of social ecology for occupation service systems

Nie, Zichao, Zurlo, Francesco, Camussi, Elisabetta and Annovazzi, Chiara

Suggested citation:

Nie, Zichao, Zurlo, Francesco, Camussi, Elisabetta and Annovazzi, Chiara (2019) Discussing the potential therapeutic effects on design for psychological well-being: A case of social ecology for occupation service systems. In: Proceedings of Relating Systems Thinking and Design RSD8 Symposium, October 13-15, 2019, Chicago, USA. Available at http://openresearch.ocadu.ca/id/eprint/3190/

Open Research is a publicly accessible, curated repository for the preservation and dissemination of scholarly and creative output of the OCAD University community. Material in Open Research is open access and made available via the consent of the author and/or rights holder on a non-exclusive basis.

The OCAD University Library is committed to accessibility as outlined in the <u>Ontario Human Rights Code</u> and the <u>Accessibility for Ontarians with Disabilities Act (AODA)</u> and is working to improve accessibility of the Open Research Repository collection. If you require an accessible version of a repository item contact us at <u>repository@ocadu.ca</u>.

Discussing the Potential Therapeutic Effects on Design for Psychological Well-being

A Case of Social ecology for Occupation Service Systems

Zichao Nie¹, Francesco Zurlo², Elisabetta Camussi³ and Chiara Annovazzi³

¹New Media Art and Design School, Beihang University, China

²Department of Design, Politecnico di Milano, Italy

³ Department of Psychology, University of Milano-Bicocca, Italy

Abstract

Although the term of 'design' and 'health' sounds far, the link between two fields is getting closer and closer. The topic of 'Design for Health' increasingly demonstrates that design knowledge and practices can benefit health and well-being field (e.g., for the products, environment, communication, etc.). From the past researches, the evidence-based design approaches have showed a therapeutic effect on human well-being issues, but it is rarely to illustrate some positive well-being connections from experience-based design perspective. This paper aims to study the therapeutic link between service design and health or well-being through the mixed research methods. In order to understand this unclear relationship, this research was focused on the topic of vocational psychology to analyse the career service network in higher education institutions through service design framework. The results, in the end, not only indicate that service design can positively impact human-well-being, but also illustrate key approaches from service design which can improve people's well-being. Therefore, this paper summarizes that transforming services for psychological well-being from design approaches is a positive way to improve human well-being comprehensively.

Introduction

The idea of design for benefiting health and well-being services is increasingly taken as a common view in design research and demonstrates more and more possibilities to shape healthcare practices (Chamberlain& Craig, 2017; Wildevuur 2017; Tsekleves & Cooper, 2017). It starts from Victor Papanek (1971) who depicted 'design can be recognized as an added value to products and environments in health systems.' After that, the contributions of design for well-being seem the light of day, from the development of medical equipment and products (Groeneveld, Dekkers, Boon & D'Olivo, 2018), to the service experiences, self-management, and people's quality of life (Ekman et al., 2011). It is a shift from design for a 'thing' to design for a 'purpose', (Sanders & Stappers, 2008), i.e., evidence-based design (Becker & Parsons, 2007; Stankos & Schwarz, 2007) to experience-based design (Gage & Kolari, 2002; Bate & Robert, 2007; Freire & Sangiorgi, 2010; Jones, 2013).

Heretofore, there is a growing range of academic and practical activities emerged in the 'design for health service' or 'service design for health' field. Traditionally, the strategy of improving a health and well-being service focused much more on the aspects of customers' experience (Bate & Robert, 2006; Dubberly & Evenson, 2010; Larkin, Boden & Newton, 2015), satisfaction (Jenkinson, Coulter, Bruster, Richards, & Chandola, 2002), loyalty (Pullman & Gross, 2004) and so forth. There is little attention on the emerging area of creating uplifting changes in the consumers' well-being from

service perspective. In 2014, an experience-based co-design (EBCD) program called 'Betts Ward' from NHS descripted the implemented service design project can have a therapeutic impact on patients, which is not expected. An inpatient said, "Turning a horrible experience into something beneficial has been a definitely significant part of my recovery." (NHS,2012).

In a vein similar to service of well-being effects, the rising field called transformative service research (TSR) argues that service basically affects well-being (Ostrom et al., 2010; Anderson et al., 2013) and distinguished the significance of positive and negative impacts on customers' health conditions (Anderson & Ostrom, 2015). What makes TSR different from traditional well-being service studies is that it emphasizes well-being is related not only to the individual level (e.g., consumer experience) but also to the collective level, involving family members, neighbours, social conditions and environments. Even if some evidences emerged, there is in need of understanding this implicitly therapeutic relation between service and human well-being from design approaches empirically. The questions of whether service design is good for service customers' well-being and how to improve their well-being through designing a better service are raised.

To answer these questions, we worked on both theoretical research and empirical investigation. The theoretical foundation was first engaged to review the design literatures regarding to service experience design and service system design to explain research background of service design for health. Secondly, a theoretical framework has been illustrated from systematic design and service design knowledge, in order to interpret service systems from design aspects. In the part of empirical study, it aims to answer whether and how service design can affect human well-being. For this reason, it has been focused on the topic of vocational psychology, analysing the career service network in Higher Education Institutions (HEI) through service design approaches. Also, the mixed research method approach, involving Case Study (i.e., qualitative research) and Survey (i.e., quantitative research), has been selected to understand the link between career service structure and university students' well-being. After the data collection and analysis, the results demonstrate the therapeutic link between two field and what are the main service design elements to improve students' health conditions.

Literature Review

In this section, we delineate our theoretical basis for explaining how the past experience of involving with design method and thinking is central to health and well-being services, wherein relating to benefit service receivers' well-being conditions. First, we summarize design approaches in the service experience level and then sketch out the main design perspectives on service system level, in order to locate our position in design for well-being services.

Service Experience design

Referring to service experience design, it is imperative to clarify that evidenced-based design has been valued to improve patients' well-being at the hand of built environment and behaviour studies. A shifting moment of improving health services is from 'design for a thing' to 'design for a purpose' (Sanders & Stappers, 2008) that aims at providing a pre-packaged and coherent user experience to fulfil their own aspirations (Parker & Heapy, 2006; Jegou & Manzini, 2008). Services, especially health services, recognize people as the core of entire process. It is not easy about creating a service for people, but rather designing a service with people (Carr, Sangiorgi, Büscher, Junginger, & Cooper, 2011). Forlizzi and Ford (2000) purpose that good narratives that the user will take part in and pass on to others for creating a memorable experience. Indeed, a fundamental change from the

experience-based approach compared to the previous ways is critically to regard user as design partner, by reason that the concept of codesign (i.e., participatory design) was born.

As a consequence of this new paradigm, codesign initiatives has been spreading across well-being service transformations. In 2004, the Design Council published a report called 'Red Paper 01-Health: Co-creating Services' which argues for the codesign approach as an innovative way to promote a series of new relationships among stakeholders (i.e., users, workers and professionals) to create or improve its services together. In the same vein, the National Health Service (NHS) puts users first from taking an iterative approach to recognize user needs, more than simply taking its old way of service measurements to understand service improvements. In this context, Bate and his colleagues (2009) reported an NHS service improvement guide and a set of tools to apply experience-based design (EBD) approach to involve patients and staffs to design a better healthcare service. After this, the achievement of applying into health field is remarkable. Until 2013, 59 EBCD (i.e., EBD) projects completed and 27 ongoing projects happened in 6 countries (Donetto, Tsianakas & Robert, 2014).

Within the EBD methods, service designers are not only test their ideas with users and to learn from feedbacks, but to study a democratic path to know how to engage users and even a bigger range of customers from user-consultation to codesign (Gage & Kolari, 2002; Bate & Robert, 2006, 2007). The conception on experience from Bate, Robert, and Bevan (2004) is the basis of all of us feelings, emotions, memories, reactions, actions and judgments. In this sense, it is not the matter of the experience per se, but related to life quality, life states and life choices (Carr et al., 2011). Therefore, as we see, service experience level principally corresponds to hedonic well-being associated with a component of subjective well-being of creating positive feelings and avoiding negative experiences (Diener, Suh, Lucas, & Smith, 1999). Naturally, a better service experience can bring a better moment to clients, so that the relation between service and well-being in this level is paid attention to individual level, only engaging service entities and customers.

Service System Design

Gradually, improving health and well-being services has been attracted into system thinking to understand how to facilitate changes within healthcare from institution level and even looking into sociotechnical system level through creative methodological approaches (Sangiorgi, 2009; Chamberlain & Craig, 2017; Tsekleves & Cooper, 2017; Jones, 2018). Since that, the emerging area 'transformation design' has been increasingly discussed. It asks designers to shape form and behavior of people, organizations and system, which requires a high level of 'system thinking' to consider a problem holistically (Burns, C., Cottam, H., Vanstone, C., & Winhall, J., 2006). It is no coincidence that design thinking and system theory both are heading towards a mutual goal to understand the desired outcomes of complex issues (Jones, 2013). Even though some thinkers believed that, the two disciplines rarely entail the rules within each field. Daniela Sangiorgi (2011) depicted that service design has been currently see more as means for societal transformation, but with little knowledge (e.g., principles and theories) of organizational and social studies.

The truism of transformation design aims to investigate the innovative rules to promote a flourishing society that can consider non-human actors and benefit human actors at length. It applies system theory, institution theory, social ecology and so forth into organization change (Buchanan, 2004; Bate & Robert, 2007; Junginger & Sangiorgi, 2009), social (or community-based) innovation (Manzini, 2007, 2015; Meroni, 2007), and even ecological elements (Ostrom, 2009; Anderson et al., 2013; Jones, 2015, 2017; Norman & Stappers, 2015a; Sangiorgi, Patrício & Fisk, 2017; Kimbell & Blomberg, 2017). The progress in design domain is running to the origination from

static to dynamic, from exclusive to inclusive and from a closed environment to an open environment, which tends to build the approaches and capacity for constant change, more than a solution. Since organizations operate in a context of ongoing change, the challenge design faced today is not how to solve a present problem, but how to design a means of continually adapting, innovating and responding (Sangiorgi, 2011).

However, it is not easy to understand the chaos of these complex systems and even to cultivate change among the complexity of it (Norman and Stappers, 2015b). As mentioned before, TSR researchers argue the potential for altering organizational arrangements and social structures (Blocker & Barrios, 2015) to improve well-being including hedonic and eudaemonic well-being of individuals and collectives (Anderson et al., 2013, Kuppelwieser & Finsterwalder, 2016). It also highlights the fundamental impacts of service on well-being (Ostrom et al., 2010) from both positive and negative sides (Anderson & Ostrom, 2015). From design perspective, it tries to find out a connection between co-design and well-being and expand the discussion in terms of how co-design influences well-being on multiple levels, especially the macro-level in future research (Vink, Wetter-Edman, Edvardsson & Tronvoll, 2016). In the service system level, the concept of design for health centres on changing collective well-being, which associated with human flourishing and happiness. To systematically improve a population's social ecology, it is a considerable challenge not merely for design community, but also for health professionals.

Theoretical Framework

So far, in the light of analysis, existing design studies on co-creation seems to draw mainly attention to well-being outcomes at the micro-level or meso-level, such as within organization (Vink et al., 2016). There is still a limited knowledge of interpreting adequate methodologies and critical design principles that can be used to tackle these complex issues (Sangiorgi, 2011). In this paper, we applied a service analytical framework (Nie, Zurlo, Camussi & Annovazzi, 2019) to benefit of understanding and locating service systems within the service eco-social paradigm, which gives complex adaptive systems a holistic view to ensure a flourishing service ecology. The model of flourishing in social ecology of Jones (2017) is adapted to recognize the service social ecology systems (i.e., Microsystem, Mesosystem, Exosystem, Macrosystem and Ecosystem) and its functions. Besides, the theoretical model learns from co-design, Actor-Network Theory (ANT) and action community research to see a key factor of service interactions, value co-creation and service delivery. In this continuum, it can analyse each single service in a lager social system for better illustrating implicit connections among different service systems and promoting well-being for service actors.

The analytical tool is displayed in figure 1 that involves a various range of actor interactions or actnetworks in different system cycles:

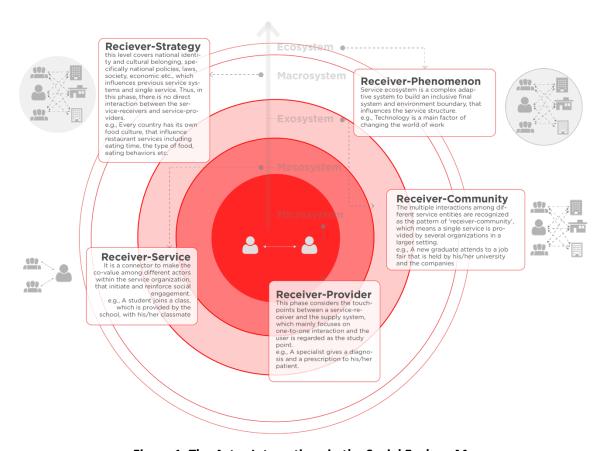


Figure 1. The Actor Interactions in the Social Ecology Map.

Receiver-Provider

the interaction in microsystem is relatively easy to be understood as a simple one-to-one touchpoint, and it scarcely needs to involve a third party. For example, when a specialist gives a diagnosis and a prescription to his/her patient, this service interaction can be finished directly between them.

Receiver-Service

It means, in mesosystem, the value creation happened while different customers participate in a single service, which creates a social group of combining with receivers, delivers and providers. For instance, A student joins a class with his/her classmate together, which is provided by their teacher. In this case, the student not only interacts with the teacher, but also with his/her schoolmate. Compared to the interaction in micro-level, the main difference is that contains a lager system to initiate social engagement.

• Receiver-Community

The relationship of service network in exosystem indicates that the value co-creation is consist of service encounters between consumers and different service entities. As an example, A new graduate attends to a job fair which is held not only by his/her university, but also those recruitment companies.

Receiver-Strategy

The macro-level interactions mostly work indirectly. It means the cultural belonging, national identity, government policies, social economy, etc. can not explicitly interact with service clients, but it deeply influences and changes the service structures. For example, every country

has its own food culture, and this can influence local restaurants' services including eating time, the type of food, eating behaviours and so on.

• Receiver-Environment

In the last ecosystem level, the relationship is recognized that something needs to be considered in society or nature, such as globalization, digitalization, climate change or nature resources. As we can see, technology has been a main factor for changing the world of work.

Empirical Research

This paper is based on the social ecology framework (Nie et al., 2019) to conduct an empirical research, in order to investigate whether service design could help for customers' well-being and how to improve their well-being through service design knowledge. This empirical study has been conducted into career network services in HEIs from both side of service design and vocational psychology. Since career services, like occupational therapy and its related services, is underpinned by the pledge that engagement in vocation is principal to health and well-being (Laliberte Rudman et al., 2019). People are able to maintain and develop their families and communities through occupation as sources of common actions, opportunities and belonging (Frank & Zemke, 2009; Wilcock & Hocking, 2015).

Research Setting

Since the wide debate on the relation between design and well-being, this collaborative research was conducted into two phases: 1) to illustrate the existing service system and the feasible service improvements through Case Study (Zainal, 2007); 2) to understand the students' well-being related to vocational issues through Survey (Fowler et al., 2008). In the first phase, it collected many informal talks, internal documents and official websites with service staffs to map the campus service system and in-depth interviews with students to find the experience gaps possibly could be improved. In the second phase, it collected the data using six psychology instruments, i.e., Career Adapt-Abilities Scale (CAAS), Satisfaction With Life Scale (SWLS), Career Decision-making Difficulties Questionnaire (CDDQ), The Courage, Perceived Growing Occupational Uncertainties and Control Strategies (CPGOUCS), and Life Engagement Test (LET). At the same time, the questionnaire also asked the question of participants' demographic information and inquiries about service, such as 'do you know this service?', 'did you use it?', etc.

In response to identify the impacts from the service social ecology, especially macro-level and ecolevel, and triangulating the data, this research was applied into different sociotechnical backgrounds. It starts with discovering the practical situations of university career service network in China and in Italy, wherein involving different cultural identities, education systems and occupational structures. Therefore, the case selection process considered not only the characteristics of the universities (micro-level, meso-level), but also the common conditions on the economy and geographical location (exo-level), and cultural differences (macro-level). After filtering the same university quality requirements, we sent our research proposals to those universities where fit our needs. In the end, the university A located in Yangtze River Delta (China) and the university B located in Lombardy Region (Italy) accepted and supported our investigations.

Data Collection

The data collection was divided into two blocks to figure out what is the relationship between service and well-being and how to improve human well-being through service design approaches. In the beginning of the field study, several unstructured interviews made with service staffs who work in each university and the service introduction materials and officially digital websites were

collected to understand the service settings. Later, the interviews and the quantitative questionnaires were inquired to first-year students, in order to figure out the students' experiences and expectations on those services and the psychological well-being (from survey). In the participant selection, it applied a random sample in both universities, so that every student in the population had an equal chance of being participated (Creswell & Creswell, 2017). This study covered a wide range of students from different schools and all of them should be the enrolled full-time students.

In terms of the in-depth interview, it made of 40-60 mins and face-to-face interview in both universities. The interview agreement signed with each participant before starting. The agreement includes the aims, contents and process of the interview, voice recording permission, and other possible ethics concerns. Audio records were taken with approval to extract transcriptions or notes. There were 32 students from the university A and 26 students from the university B that engaged in the interview phase. After qualitative research, the questionnaires have been sent to these two HEIs to collect students' well-being conditions related to career services. In the university A, there were 312 responses and 27 invalid questionnaires. Thus, 285 first-year students who answered questionnaires completely, and about 91.3% of the total population were valid answers. In the university B, there were 305 responses to online questionnaires and 42 invalid responses. Therefore, the valid answers were 263 students and the percentage of the whole participants from the university B was nearly 86.2%.

Data Analysis

In regard to the process of data analysis, the 'thematic analysis' (Braun & Clarke, 2006) was applied into qualitative data analysis, integrating interviews with staff and students. During the coding analysis, it inserted the social ecology model (figure 1) to understand and visualize existing CCS system maps from microsystem, mesosystem, exosystem, macrosystem and ecosystem in each university. In another side, the quantitative data used the SPSS software to generate well-being outcomes from descriptive statistics and Analysis of Variance (ANOVA).

Results

Service Social-ecology Map

In the University A, the career service system is recognized as strategy-oriented service type, that provides service to engage students influenced by the macro-level. The national policies and the career prospects within the country or in the world are the main considerations for heading service directions. Besides, the entire career service ecosystem, it contains a complex service arrangement and a variety of service subsystems interdependently. The fundamental sub-systems of the University A are illustrated in Figure 2 in the left side called 'subsystem of Student Employment Guidance Center (SEGC)' and in the right side called 'subsystem of Student Career Development Association (SCDA)'.

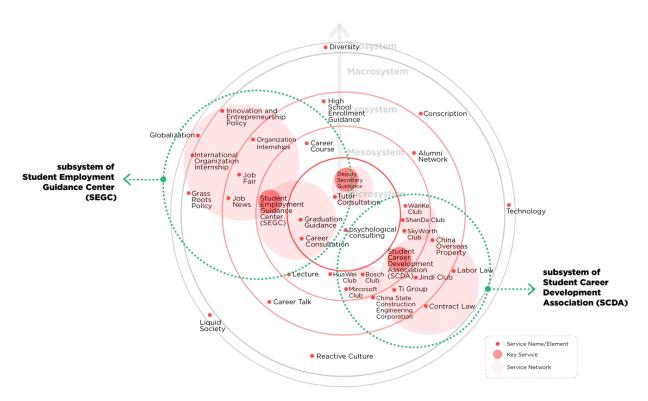


Figure 2. Career Ecosystem of the University A.

Within the circle of SEGC, it includes a series of single services across micro-level, meso-level, exo-level, macro-level, and eco-level. SEGC as the hub locates in the mesosystem to provide Graduation Guidance and Career Consultation service in micro, and Job fair, Job News and Organization Internships in Exosystem. In macro-level, the national policies (e.g., Innovation and Entrepreneurship policy, Grass Roots policy, etc.) can promote promising vocation fields with strategic support. Also, the global organization internship experiences can help to increase student's engagement motivation and open new possibilities. The 'Globalization' as an implicit factor to influence slowly the whole service structure. In another side, the 'subsystem of Student Employment Guidance Center (SEGC)' mainly build a bridge between schools and workplaces to offer a practical opportunity to students. Through collaborations with different companies, they organize many student activities, such as resume creation, interview training, matches, 'Project Manager' (to imitate a company project), study group, and so on, to improve occupational capabilities. In this cycle, it not only administrative staffs putting efforts to manage these services, but also senior students play as a basic role here for organizing student activities.

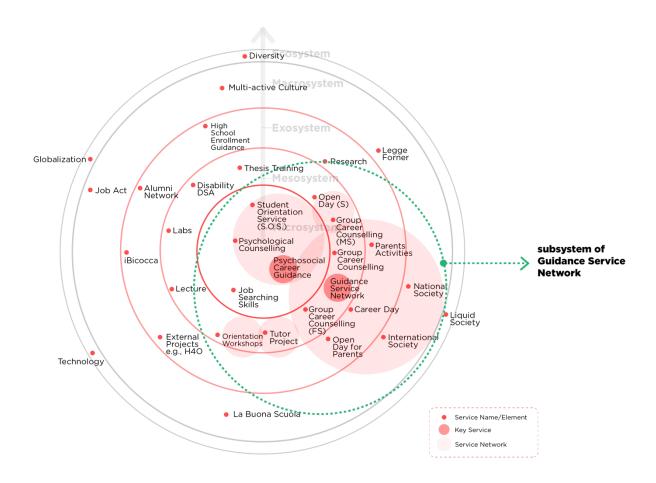


Figure 3. Career Ecosystem of the University B.

In the University B, the type of career service system is identified as research-oriented network, and it offers a set of vocational services starting from mesosystem to students. The university establishes a 'subsystem of Guidance Service Network' and each service locates from microsystem to ecosystem. It is consisted of includes Psychosocial Counselling for Guidance (PCG), the Student Orientation Service- S.O.S., Guidance Workshops- Laboratory, Psychological Counselling, Job Placement, and Disability and DSA. Within these services, the PCG service act as a basic support for solving students' career issues, providing psychological needs of guidance, re-guidance, one-to-one consultation, individual resource support. Furthermore, it works with other services together as Guidance Service Network system to create many career guidance services, such as Tutor Project, Group Career Counselling (GCC), GCC for mature students, GCC for foreigner students, Open Day for students in mesosystem. In exosystem, it designs Open Day for parents, Parents Activities to engage parents in a separate way and the Career Day to create the connections between students and company recruitments. The National Society and International Society focusing on career service give a mutual platform for different university career systems to discuss students' career issues and education together.

Psychological Well-being from Students

In the phase of understanding first-year students' well-being, we collected the quantitative data from six psychology instruments. It includes Career Adapt-Abilities Scale (CAAS), Satisfaction With Life Scale (SWLS), Career Decision-making Difficulties Questionnaire (CDDQ), The Courage, Perceived Growing Occupational Uncertainties and Control Strategies (CPGOUCS), and Life Engagement Test (LET). After this, we used SPSS to analyse their well-being conditions through descriptive statistics and Analysis of Variance (ANOVA) from vocational psychology perspective.

		Population	Standard Deviation	Mean	Sign.
CAAS	Used	77	.530	3.859	.023*
	Not used	471	.516	3.715	
SWLS	Used	77	1.251	4.436	.039*
	Not used	471	1.209	4.127	
CDDQ	Used	77	1.284	4.394	.944
	Not used	471	1.203	4.404	
The Courage	Used	77	.610	4.102	.237
	Not used	471	.653	4.197	
CPGOUCS	Used	77	1.162	3.506	.158
	Not used	471	1.329	3.733	
LET	Used	77	.355	3.039	.330
	Not used	471	.435	2.988	

Note: **P*<0.05, ***P*<0.01, ****P*<0.001

Table 1. The Comparison Between Participants Who Used Services and Who Not

According to table 1, participants from first-year students who used career services held a higher well-being state of the CAAS (P=0.023<0.05) and the SWLS (P=0.039<0.05). Thus, career service experiences could bring a positive effect on students' well-being. The CAAS is made of measuring concern, control, curiosity and confidence as psychosocial ability for handling developmental tasks, occupational transitions, and work traumas (Savickas & Porfeli, 2012). With a higher level of the SWLS, it means that people see their lives enjoyable, and the primary parts of life are going well – family, work or school, friends, personal development and leisure (Pavot & Diener, 2013). By comparison with participants who did not use services, there was a relatively small proportion of responses who used services. There is a need for both universities to engage more students in these occupation services.

		Population	Standard Deviation	Mean	Sign.
CAAS	Uni. A	40	.627	3.868	.880
	Uni. B	37	.409	3.850	
SWLS	Uni. A	40	1.378	4.155	.039*
	Uni. B	37	1.032	4.740	
CDDQ	Uni. A	40	1.417	4.662	.056
	Uni. B	37	1.067	4.104	
The Courage	Uni. A	40	.528	4.281	.007**
	Uni. B	37	.639	3.909	
CPGOUCS	Uni. A	40	1.043	3.125	.002**
	Uni. B	37	1.156	3.918	
LET	Uni. A	40	.324	3.195	.000***
	Uni. B	37	.309	2.869	

Note: *P<0.05, **P<0.01, ***P<0.001

Table 2. The Comparison between Uni. A and Uni. B

As illustrated by table 2, the comparison made among 77 participants those who used services, wherein 40 first-year students from the university A and 37 first-year students from the university B. The table showed that, within the LET, there is very high significant difference between university A and university B (P=0.000<0.001). Afterwards, the SWLS (P=0.039<0.05), the Courage (P=0.007<0.01) and the CPGOUCS (P=0.002<0.01) have a significant difference as well. By mean comparison, the university A held a positive well-being condition in the LET, which indicates students from the university A engaged more life activities are individually valued, measuring purpose in life (Scheier et al., 2006). The university B held a well state of life satisfaction, which has a positive impact on psychological well-being and life quality. Besides, the table described that the university A held a higher score of the courage and a lower score of the CPGOUCS than the university B. So, it demonstrates there was a positive well-being impact, with regard to these two variables, on participants from the university A.

The Outcome from Design and Well-being

Figure 4. Design for Well-being in Social Ecology Map

There are two obvious pillars of design for well-being here (see Figure 4):

• Design for Public Awareness

From the table 1, we can see that 471 participants who answered did not used their university career services, which accounts for nearly 86% of total responses. Thus, the majority of students who joined this investigation never experienced these services. However, the data showed career interventions had a positive effect on first-year students' well-being. At present, one of the biggest issues in the career service was lack of attentions for first-year students in practical projects and research. The research (Morgan & Ness, 2003) clearly shows that first-year undergraduates usually experience career decision-making difficulties and career indecision and they exactly experience "Emerging Adulthood" (Arnett, 2000) that makes these students more fragile and stressful (Beck, 2000).

During the empirical study, it gave some reasons of why these students never used the service, even the service benefited their psychological well-being. First and foremost, the major issue is that students did not know these career services or how to use it. During the interviews, approximately half of the participants from both universities pointed that the service was helpful and valuable for them and they suggested that the university should create more activities to propaganda career services to let them know it. Also, participants expressed that they knew barely information about the service, for example "what activities they provide?", "how to contact this service?", "where is the service?", "how to use it?", and so on. Therefore, universities need to make their vocation services much more visible, in order to allow every student to aware the service exist and what these career services are.

• Design for Social Engagement

A higher state of life engagement has important beneficial effects on psychological and physical well-being (Wrosch et al., 2003). If new activities personally valued are not found, the people's life is without purpose and feels empty (Scheier et al., 2006). From such statements, it highlights the importance of promoting students engage in valuable daily activities to find a meaningful purpose in life. Figure 2 showed that a main characteristic feature of the university A service is to involve students into many career activities, such as hands-on experiences, organization (including private, national, international) visiting tours and internships, project manager, different competitions to train students career skills and so forth. In another way, table 2 presented that the participants from the university A also has a higher score of the LET. Consequently, design for social engagement is also a way to promote human well-being and designing these services is mainly located in mesosystem and exosystem (Figure 4).

In addition to the two pillars described above, we delineated table 3 for design for well-being from service design knowledge below:

Design	Service	Actors	Service Design	Service Design	
for	Level	(human &	Value	Application	
Well-being		Non-human)			
Public	Micro-;	Administrator;	Online content	Communication	
Awareness	Meso-	tutor; peer; IT;	resources;	Visualization	
			Community media	Interaction	
		Website; App;	design;	Process	
		other digital	Information	Workflows	
		channels; booklets;	visualization	Wayfinding	
		posters; on-site;		Material	
		open-day			
Social	Meso-;	Peer;	Activity procedures;	Communication	
engagement	Exo-	administrator;	Service experience;	Process	
		employee;	Socialization & team	Experience	
		manager; trainer	working;		
			On-site education		
		Classroom;			
		on-site; online;			
		activity			

Table 3. The Service Design for Well-being Components

Conclusion

This collaborative research, involving service design and vocational psychology, reaches an optimistic conclusion that help researchers to illustrate the value of service design from therapeutic effects perspective. It helps both theoreticians and practitioners (e.g. service designers, health professionals or managers) who have been working in the field of design for health and well-being services to realize the external value of service design related to health area. It not only creates positive changes in service experience and quality improvements, but also directly in well-being impacts for service-receivers. In other words, it extends the range of service design possibilities, since it could bring positive therapeutic effects on human well-being. Therefore, there is a basic need for health and well-being services to involve service design approaches to ensure the service quality and clients' well-being. In the end, this study provides a promising start for researchers to explore further relationships between service design and psychology well-being.

References

- 1. Anderson, L., Ostrom, A. L., Corus, C., Fisk, R. P., Gallan, A. S., Giraldo, M., Mende, M., Mulder, M., Rayburn, S. W., Rosenbaum, M. S., Shirahada, K., & Williams, J. D. (2013). Transformative service research: An agenda for the future. *Journal of Business Research*. 66. 1203-1210.
- 2. Anderson, L., & Ostrom, A.L. (2015). Transformative service research: Advancing our knowledge about service and well-being. *Journal of Service Research*. 18(3). 243-249.
- 3. Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, *55*(5), 469.
- 4. Bate, P., Robert, G., & Bevan, H. (2004). The next phase of healthcare improvement: what can we learn from social movements?. *BMJ Quality & Safety*, *13*(1), 62-66.
- 5. Bate, P., & Robert, G. (2006). Experience-based design: from redesigning the system around the patient to co-designing services with the patient. *BMJ quality & safety*, *15*(5), 307-310.
- 6. Bate, P., & Robert, G. (2007). *Bringing user experience to healthcare improvement: The concepts, methods and practices of experience-based design*. Radcliffe Publishing.
- 7. Burns, C., Cottam, H., Vanstone, C., & Winhall, J. (2006). RED paper 02: Transformation Design. *London: Design Council*.
- 8. Buchanan, R. (2004). Human-centered design: Changing perspectives on design education in the East and West. *Design Issues*, *20*(1), 30-39.
- 9. Blocker, C.P., & Barrios, A. (2015). The transformative value of service experience. *Journal of Service Research.* 18(3). 265-283.
- 10. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- 11. Bob Groeneveld, Tessa Dekkers, Boudewijn Boon & Patrizia D'Olivo (2018) Challenges for design researchers in healthcare, *Design for Health*, 2:2, 305-326, DOI: 10.1080/24735132.2018.1541699
- 12. Becker, F., & Parsons, K. S. (2007). Hospital facilities and the role of evidence-based design. *Journal of Facilities Management*, *5*(4), 263-274.
- 13. Beck, C. T. (2000). The experience of choosing nursing as a career. *Journal of Nursing Education*, 39(7), 320-322.

- 14. Craig, C., and P. Chamberlain. 2017. "Behaviours: Design and Behaviour Change in Health." *Design for Health*, edited by Emmanuel Tsekleves and Rachel Cooper, 191–203. New York: Routledge.
- 15. Carr, V. L., Sangiorgi, D., Büscher, M., Junginger, S., & Cooper, R. (2011). Integrating evidence-based design and experience-based approaches in healthcare service design. *HERD: Health Environments Research & Design Journal*, 4(4), 12-33.
- 16. Cottam, H., & Leadbeater, C. (2004). RED paper 01: Health: Co-creating services. *London: Design Council*.
- 17. Carr, V. L., Sangiorgi, D., Büscher, M., Junginger, S., & Cooper, R. (2011). Integrating evidence-based design and experience-based approaches in healthcare service design. *HERD: Health Environments Research & Design Journal*, 4(4), 12-33. Experience-based design
- 18. Chamberlain, P., & Craig, C. (2017). Design for health: reflections from the editors.
- 19. Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage publications.
- 20. Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin*, *125*(2), 276.
- 21. Dubberly, H., & Evenson, S. (2010). Designing for service: Creating an experience advantage. *Introduction to service engineering*, 403-413.
- 22. Donetto, S., Tsianakas, V., & Robert, G. (2014). Using Experience-based Co-design (EBCD) to improve the quality of healthcare: mapping where we are now and establishing future directions. London: King's College London.
- 23. Ekman, I., K. Swedberg, C. Taft, A. Lindseth, A. Norberg, E. Brink, J. Carlsson, et al., 2011. "Person-Centered Care Ready for Prime Time." *European Journal of Cardiovascular Nursing* 10 (4):248–251. doi:10.1016/j.ejcnurse.2011.06.008.
- 24. Freire, K., & Sangiorgi, D. (2010). Service design and healthcare innovation: From consumption to coproduction to co-creation. In *Service Design and Service Innovation conference* (pp. 39-50). Linköping Electronic Conference Proceedings.
- 25. Forlizzi, J., & Ford, S. (2000, August). The building blocks of experience: an early framework for interaction designers. In *Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques* (pp. 419-423).
- 26. Frank, G. & Zemke, R. (2009). Occupational therapy foundations for political engagement and social transformation. In N. Pollard & F. Kronenberg (Eds). A political practice of occupational therapy (pp.111-133). London: Elsevier.
- 27. Gage, M., & Kolari, P. (2002). Making emotional connections through participatory design. *Boxes and Arrows*, 11.
- 28. Jones, P. (2013). Design for care: Innovating healthcare experience. Rosenfeld Media.
- 29. Jones, P. (2015). Can we design for a flourishing society. *Banff, Canada: RSD4. Retrieved via http://www. slideshare. net/peterjones/designing-flourishingsocieties-rsd4 on Nov, 22, 2016.*
- 30. Jones, P. (2017). Social ecologies of flourishing: Designing conditions that sustain culture. In *Design* for a Sustainable Culture (pp. 38-54). Routledge.
- 31. Jones, P. (2018). Contexts of co-creation: Designing with system stakeholders. In *Systemic Design* (pp. 3-52). Springer, Tokyo.
- 32. Jenkinson, C., Coulter, A., Bruster, S., Richards, N., & Chandola, T. (2002). Patients' experiences and satisfaction with health care: results of a questionnaire study of specific aspects of care. *Qual Saf Health Care*, 11(4), 335-339.

- 33. Jégou, F., & Manzini, E. (2008). Collaborative services. *Social innovation and design for sustainability*, 1.
- 34. Junginger, S., & Sangiorgi, D. (2009). Service design and organisational change. Bridging the gap between rigour and relevance. In *International Association of Societies of Design Research* (pp. 4339-4348). KOR.
- 35. Kimbell, L., & Blomberg, J. (2017). The object of service design. *Designing for Service: Key Issues and New Directions*, *27*, 20-34.
- 36. Kuppelwieser, V. G., & Finsterwalder, J. (2016). Transformative service research and service dominant logic: Quo Vaditis?. *Journal of Retailing and Consumer Services*, *28*, 91-98.
- 37. Larkin, M., Boden, Z. V., & Newton, E. (2015). On the brink of genuinely collaborative care: experience-based co-design in mental health. Qualitative health research, 25(11), 1463-1476.
- 38. Laliberte Rudman, D., Pollard, N., Craig, C., Kantartzis, S., Piškur, B., Algado Simó, S., ... & Schiller, S. (2019). Contributing to social transformation through occupation: Experiences from a think tank. *Journal of Occupational Science*, 26(2), 316-322.
- 39. Manzini, E. (2007). Design research for sustainable social innovation. In *Design research now* (pp. 233-245). Birkhäuser Basel.
- 40. Manzini, E. (2015). *Design, when everybody designs: An introduction to design for social innovation.* MIT press.
- 41. Meroni, A. (2007). *Creative Communities. People inventing sustainable ways of living.* Edizioni Polidesign.
- 42. Morgan, T., & Ness, D. (2003). Career decision-making difficulties of first-year students. *The Canadian Journal of Career Development*, *2*(1), 33-39.
- 43. Norman, D. A., & Stappers, P. J. (2015a). DesignX: For complex sociotechnical problems, design is not limited to one person, one phase, or one solution Authors' Response. *She Ji: The Journal of Design, Economics and Innovation,* 1(2), 105–106. https://doi.org/10.1016/j.sheji.2016.01.002
- 44. Norman, D. A., & Stappers, P. J. (2015b). DesignX: complex sociotechnical systems. *She Ji: The Journal of Design, Economics, and Innovation*, 1(2), 83-106.
- 45. Nie, Z.; Zurlo, F.; Camussi, E.; Annovazzi, C. (2019). Service Ecosystem Design for Improving the Service Sustainability: A Case of Career Counselling Services in the Italian Higher Education Institution. *Sustainability*, 11, 1427.
- 46. NHS Institute for Innovation and Improvement. (2009). "Experience Based Design: Using Patient and Staff Experience to Design Better Healthcare Services". https://www.hqsc.govt.nz/assets/Consumer-Engagement/Partners-in-Care-Resource-page/NHS-EBD-Guide- 30.1.2009.pdf
- 47. Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., ... & Rabinovich, E. (2010). Moving forward and making a difference: research priorities for the science of service. *Journal of service research*, 13(1), 4-36.
- 48. Ostrom, E. (2009). A general framework for analyzing sustainability of social–ecological systems. *Science*, *325* (5939) 419–422.
- 49. Papanek, V., & Fuller, R. B. (1972). Design for the real world (p. 22). London: Thames and Hudson.
- 50. Pullman, M. E., & Gross, M. A. (2004). Ability of experience design elements to elicit emotions and loyalty behaviors. Decision sciences, 35(3), 551-578.
- 51. Parker, S., & Heapy, J. (2006). The journey to the interface. *London: Demos*.
- 52. Pavot, W., & Diener, E. (2013). The Satisfaction with Life Scale (SWL). Measurement instrument database for the social science.
- 53. Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Codesign*, *4*(1), 5-18.

- 54. Stankos, M., & Schwarz, B. (2007). Evidence-based design in healthcare: A theoretical dilemma. *Interdisciplinary Design and Research e-Journal*, 1(1), 1-15.
- 55. Sangiorgi, D. (2009). Building a framework for service design research. In 8th European Academy of Design conference (pp. 415-420). GBR.;
- 56. Sangiorgi, D. (2011). Transformative services and transformation design.
- 57. Sangiorgi, D., Patrício, L., & Fisk, R. (2017). Designing for interdependence, participation and emergence in complex service systems. *Designing for service: Key issues and new directions*, 49-64.;
- 58. Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of vocational behavior*, 80(3), 661-673.
- 59. Scheier, M. F., Wrosch, C., Baum, A., Cohen, S., Martire, L. M., Matthews, K. A., ... & Zdaniuk, B. (2006). The life engagement test: Assessing purpose in life. *Journal of behavioral medicine*, *29*(3), 291.
- 60. Tsekleves, E., and R. Cooper. 2017. "Emerging Trends and the Way Forward in Design in Healthcare: An Expert's Perspective." *The Design Journal* 20 (sup1):S2258–S2272. doi: 10.1080/14606925.2017.1352742.
- 61. Transforming Betts Ward by listening to patients. Retrieved January 07, 2014, from http://oxleas.nhs.uk/news/2014/1/transforming-betts-ward-by-lis/
- 62. Vink, J., Wetter-Edman, K., Edvardsson, B., & Tronvoll, B. (2016, May). Understanding the influence of the co-design process on well-being. In *Service Design Geographies*. *Proceedings of the ServDes*. 2016 Conference (No. 125, pp. 390-402). Linköping University Electronic Press.
- 63. Wildevuur, S. E. 2017. "Could Health Learn from Design?" *Design for Health* 1 (1):1–6. doi: 10.1080/24735132.2017.129570.
- 64. Wilcock, A. A., & Hocking, C. (2015). An occupational perspective of health (3e éd.). *Thorofare, NJ: Slack*.
- 65. Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and social psychology bulletin*, *29*(12), 1494-1508.
- 66. Zainal, Z. (2007). Case study as a research method. Jurnal Kemanusiaan, 5(1). Fowler et al., 2008