

Application of Persuasive Techniques in the design of mobile eHealth Systems

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Introduction

A growing number of mobile applications are being developed as Personalized eHealth systems to support user's wellbeing, change attitudes and/ behaviour. This imposes greatest challenge on the design and display of user interfaces. Although theories from Positive psychology like the Cognitive Behaviour Therapy, Behaviour Change Support Systems, and Behaviour models have been promising to the study of user intentions and behaviour change, it is basically used as a checklist or rules of thumb for software artefact rather than a systematic design methodology to the design of user interface.

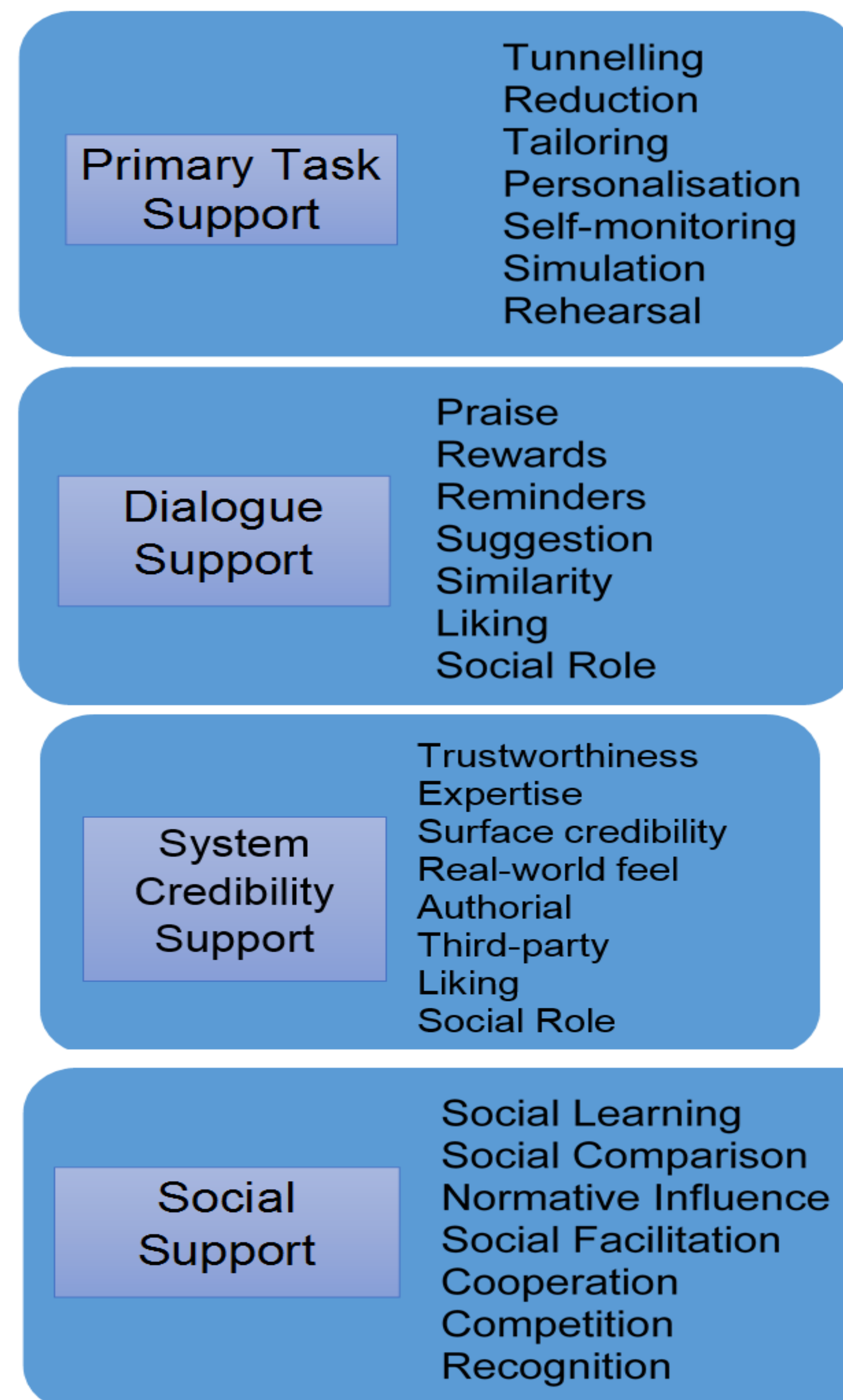
This study applies persuasive design techniques using the PSD Model (Oinas-Kukkonen and Harjumaa 2009) and human computer interaction features (Dix 2009).

Using the models the design of seven mobile apps that are currently popular in the iPhone and Google app stores for well-being and happiness are analysed by 4 researchers in the field of psychology and human computer interaction. Each of the apps were rated by the researchers against features needed for: primary task support, dialog support, system credibility, social context and user interface elements.

The analysis shows how the current mobile apps help in persuading the users. From this study we were able to understand various complex factors influencing users' attitudes toward taking well-being Apps into use. Our goal was to learn from existing applications for designing new well-being applications.

Methods

Features used in the study is shown below



HCI Elements

- User context (personalisation)
- User needs (personalisation)
- Physical effort (navigation)
- Data entry
- Goal setting
- Cultural factor (similarity)
- User friendly (overall)
- User friendly feedback
- User friendly System message
- Gamification
- Access to help
- Research function
- Consistency

Results

		Happier	Tesco health and Wellbeing	My fitness Pal	In flow	Balanced	The gratitude habit	Happy habits
Primary task support	Matt	3.00	2.43	2.57	2.86	2.29	0.57	1.29
	Laura	3.29	2.29	2.29	2.86	3.71	0.00	0.14
	Laurie	3.29	3.29	3.14	2.00	3.57	1.43	2.14
	total	3.19	2.67	2.67	2.57	3.19	0.67	1.19
	Ranking	1.00	2.00	2.00	3.00	1.00	5.00	4.00
Dialog support	Matt	3.00	3.29	2.14	3.71	1.43	1.86	0.43
	Laura	3.14	1.14	1.43	2.57	3.71	0.00	0.29
	Laurie	2.71	3.00	2.57	2.57	2.86	2.00	1.00
	Total	2.95	2.48	2.05	2.95	2.67	1.29	0.57
	Ranking	1.00	3.00	4.00	1.00	2.00	5.00	6.00
System credibility	Matt	2.86	2.14	2.29	2.14	0.71	1.57	1.14
	Laura	3.31	3.29	3.18	3.22	3.02	2.69	2.39
	Laurie	2.86	2.29	3.29	2.00	1.71	1.29	2.14
	Total	3.01	2.57	2.92	2.45	1.82	1.85	1.89
	Ranking	1.00	3.00	2.00	4.00	6.00	7.00	5.00
Social context	Matt	2.57	2.29	1.71	2.86	0.57	0.14	0.00
	Laura	3.18	3.44	3.43	3.31	3.05	3.26	2.88
	Laurie	3.43	3.00	3.00	3.14	0.00	0.00	0.00
	Total	3.06	2.91	2.71	3.10	1.21	1.13	0.96
	Ranking	2.00	3.00	4.00	1.00	5.00	6.00	7.00
User interface	Matt	2.83	2.75	2.67	3.08	3.58	1.08	0.75
	Laura	2.58	1.58	2.25	2.50	2.67	0.33	1.00
	Laurie	2.92	3.00	2.75	2.58	2.92	0.58	0.08
	Total	2.78	2.44	2.56	2.72	3.06	0.67	0.61
	Ranking	2.00	5.00	4.00	3.00	1.00	6.00	7.00

Conclusions

The persuasive model and HCI elements were applied and examined by user feedbacks, in comparison to the original criteria supported by experts from persuasive design, user acceptance, and well-being technology. We believe that this can provide value as serious games, gamification, and positive design both for designing mobile Apps for well-being and serve as evaluation framework for future studies.

Our future plans include extending the model using HCI elements as the design framework in designing our own application and further using it as the evaluation framework. To design engaging user experience for well-being mobile Apps, the design challenges of fun, attractiveness, and excitement should be thoroughly considered.

We are considering approaches such as serious games, gamification, and positive design.

Bibliography

- Oinas-Kukkonen, H., & Harjumaa, M. (2009). Persuasive systems design: Key issues, process model, and system features. *Communications of the Association for Information Systems*, 24(1), 28.
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