

**A Model for Crowd-Wisdom Based Learning and Professional
Development in Social Networks**

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Ph.D. Thesis

Submitted to the Senate of Bar-Ilan University

Ramat-Gan, Israel

November 2016

Abstract

Learning is an ongoing process which never stops. Learning in adulthood is a field of research which investigates adults' need for ongoing learning and professional development. This study is focused on improving the decision-making process as it relates to making important professional career decisions. Many adults participate in learning activities to improve their careers with the help of professional guides. The limited access to experts leads many adults to make learning decisions based on their personal preference while getting advice from family and friends.

This study investigated how large scale deliberations based on wisdom of crowds can help adults make professional learning decisions instead of seeking expert advice. Wisdom of crowds is a process in which groups of individuals act collectively in ways that seem intelligent. Large scale collective deliberation is a collective effort in which large crowds make collective decisions.

The study objectives were:

- a) To develop an integrative model for making professional development learning decisions using collective intelligence within Facebook social network.
- b) To investigate the correlation between curiosity, Facebook usage, demographic variables and the ability to create collective intelligence within Facebook. This study investigated the conditions for creating collective intelligence in social networks.
- c) To explore whether Facebook can be used to create meaningful, creative and valuable collective professional development recommendations.
- d) To expand the scientific understanding of collective intelligence theory.

The sample included 115 volunteers at the age of at least 20 years old who work for a living. It was required that they all have an active Facebook account with at least 245 friends.

Research procedure: The volunteers were asked to post a uniform status on their Facebook wall in which they asked their friends to suggest what they should learn in order to further develop professionally. The deliberation was saved and analyzed in order to look for suggestions that were most prominent. Every participant received a summary email with the most prominent ideas and a questionnaire to examine the research assumptions

Research variables and tools: The participants filled in 6 questionnaires constructing the research variables. The independent variables research tools were: The Curiosity and exploration inventory questionnaire, the Facebook intensity questionnaire and the demographic questionnaire. The dependent variables research tools were: The Perceived usefulness questionnaire, the perceived creativity questionnaire and the end-user satisfaction questionnaire. All questionnaires were found reliable and valid in this sample.

Hypothesis:

- a. Curiosity and exploration will be correlated with the procedure indicators. People with higher curiosity and exploration will exhibit meaningful collective intelligence insights during their deliberation procedure inside Facebook: Their deliberation will have more comments, more likes and it will last longer.
- b. Facebook usage will be correlated with the collective intelligence procedure indicators.
- c. Higher collective intelligence indicators will be correlated with perceived usefulness findings.
- d. Higher collective intelligence indicators will be correlated with perceived creativity findings.
- e. Higher collective intelligence indicators will be correlated with higher end-use satisfaction.

Findings summary:

- a. Hypothesis (b) was partially confirmed. Facebook usage predicts the number of comments in the deliberation process ($\beta=.09$).
- b. Hypothesis (e) was partially confirmed. The number of comments in the deliberation process predicts end-user satisfaction ($\beta=.23^*$).
- c. Hypothesis (a), (c) and (d) were not supported.
- d. Perceived usefulness was correlated to creativity ($\beta=.29^{**}$) and to end-user satisfaction ($\beta=.51^{**}$); Perceived usefulness had weak negative relation to gender ($\beta=.14^*$).
- e. Creativity was predicted by both end-user satisfaction ($\beta=.43^{**}$) and Facebook usage ($\beta=.19^*$).
- f. The number of comments was highly correlated with the number of likes ($\beta=.82^*$); The number of likes had weak negative relation with education ($\beta=-.11$); The deliberation length was highly correlated with number of participants ($\beta=.63^{**}$) and had weak relation with the number of likes ($\beta=.18$).
- g. Facebook friends number predicted using curiosity ($\beta=.21^*$); Education was highly correlated with gender ($\beta=.27^{**}$); Internet usage had high negative relation with age ($\beta=-.24^{**}$). Internet usage was also highly correlated to Facebook usage ($\beta=.27^{**}$); Facebook usage was highly predicted by the hours of Facebook usage ($\beta=.20^*$) and by Facebook friends number ($\beta=.38^{**}$)

Conclusions:

- a) 2 out of 5 hypotheses were confirmed as follows:
 - i) Confirmed positive correlation between the number of participants and end-user satisfaction, and moderate positive correlation between the average hours on Facebook and the number of likes. This implies that one condition for collective intelligence creation in Facebook is extensive social networking usage.
 - ii) No correlation was found between curiosity and the deliberation process indicators. This suggests that people with low natural curiosity can also use collective intelligence and get valuable ideas from the social networking friends.
 - iii) No correlation was found between the deliberation process indicators and both creativity and perceived usefulness. This might indicate that a valuable or creative idea can emerge regardless of the number of comments. A similar conclusion might infer regarding the deliberation duration. Both short and long deliberations can lead to useful and creative outcomes.
- b) Professional development process among adults can occur with the help of social networks as a tool for generating value using collective intelligence. The collective intelligence process in this study was found useful when the ideas generated were creative and when users expressed their satisfaction from the process itself.
- c) The criteria for minimum number of Facebook friends should be 300.
- d) Females expressed getting more value out of this process than males. This is consistent with other studies about gender differences in social networking usage.

Summary

The importance of this study lies in the collective intelligence model in which Facebook turns into a tool for helping people decide what to learn. It offers a better understanding on how Facebook could generate collective intelligence and describes the mandatory and unnecessary conditions for doing so. This study might also suggest a theoretical contribution in helping the scientific community establishing collective intelligence as a valid scientific theory which predicts when groups act in an intelligent manner in general and more specific inside social networks. The suggested model might serve as a base for discussion about the role of social networks and how they might evolve into a tool for solving problems.