The Effect of Theory U-Based Training Model on Improving Librarian Competence in the Digital Era: A Case Study in Private University Libraries in Medan City

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Abstract. This study aims to examine the influence of TheoryU-based training model on improving the competence of librarians of Private Universities in Medan City in the digital era. The research was carried out using quantitative and qualitative approaches, involving 30 librarians at the Medan City Private University Library. Data were collected through observations, interviews and questionnaires. The results of the study show that the training model based on Theory U has a positive effect on improving the competence of librarians of Private Universities in Medan City both in terms of technical competence, social competence and emotional competence. Quantitative analysis shows: 1) technical competence: there is an increase in competence by 14.7% (from 3.75 to 4.30) with a significance $p < 0.05$, 2) social competence: there is an increase in competence by 12.1% (from 3.88 to 4.35) with a significance $p < 0.05$, 3) emotional competence: there is an increase in competence by 10% (from 3.60 to 3.96) with a significance $p < 0.05$. Qualitative analysis showed that: 1) technical competence: there was an increase in the ability to use digital technology, search, evaluation and information management, 2) social competence: there was an increase in the ability to communicate, collaborate and provide customer service, 3) emotional competence: there was an increase in self-awareness, emotion management, stress coping skills and learning motivation.

Keywords: Theory U-based training model, librarian competence, private university library

1 Introduction

Higher Education Libraries are the heart of academic, research and service activities to face the demands of significant transformation in the digital era. Libraries are not just physical bookstores but now libraries must adapt to become dynamic information centers that provide access to vast digital resources, facilitate collaborative learning and support the latest research. The role and function of librarians has also shifted from traditional collection keepers to skilled information navigator librarians, innovative learning facilitators and strategic research partners. The competencies of librarians needed are increasingly complex, not only mastering information technology and digital literacy, but also communication, collaboration, problem-solving and adaptability to rapid changes.

Theory U is a solution to design a training model to improve the competence of librarians that is more transformative. *Theory U* developed by Otto Scharmer is a methodology that was originally a leadership development and social change that focused on developing self-awareness, deep reflection and learning from experience. This Theory U approach encourages each individual to look at problems from various perspectives, uncover hidden potentials and create innovative solutions that have a positive impact on improving librarians' competence. By adopting the Theory U-based training model, it is hoped that training for librarians can improve technical competence, social competence and emotional competence. Librarians are expected to be able to become agents of change in the library, create a culture of continuous learning and provide optimal, more relevant and meaningful services to the academic community.

This study will test how much the effectiveness of *the Theory U-based training model* affects the improvement of librarians' competencies in the digital era. The results of the research can contribute to the development of a Theory U-based training model to improve the competence of librarians of Private Higher Education in the city of Medan which is more effective and relevant to the demands of the times and encourage the transformation of the library into a superior learning and research center.

2 Theorical Studies

2.1 Theory U

Theory U-based training model to improve librarians' competence has five main stages, namely the common intention stage, the common feeling stage, the joint presence stage, the joint creation stage and the joint evolution stage. The five stages of U Theory: can be seen in the following figure:
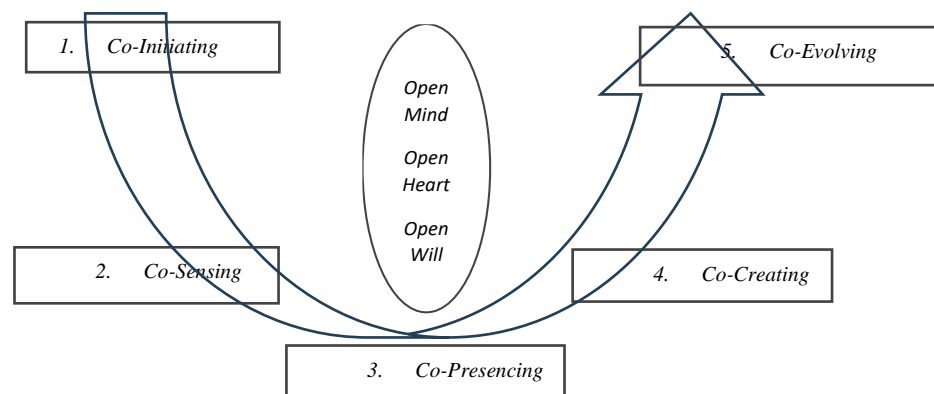

Fig. 1. Stages and Concepts of Theory U
(Source: Scharmer, 2009)

The description of the explanation from Figure 1 about the Five Main Stages of the U Theory-based training model is as follows:

1. Co-Initiating Stage: This stage starts from the identification of training needs and what competencies need to be improved through surveys and discussions
2. Co-Sensing Stage: This stage starts from the collection of data related to training needs carried out through observation and interviews
3. Co-Presencing Stage: This stage conducts in-depth analysis related to the data and information that has been collected either through needs identification, initial observation or interviews
4. Co-Creating Stage: This stage generates new ideas for designing and developing training materials
5. Co-Evolving Stage: This stage is the gradual implementation of training and measures the impact of training on librarians' competencies and performance.

Furthermore, the concept of open mind, open heart, open will is an integral part of Theory U-based training model with the following explanation:

1. Open Mind means thinking openly to new ideas, different perspectives and possibilities that have never been explored by an individual or group
2. Open Heart: means feel deeply, connect with others, and build positive and collaborative
3. Open-will means being brave to take action, committed to change, and willing to let go of old beliefs and habits

2.2 Librarian Competencies

Librarians must have several competencies in the digital era, which are as follows:

1. Technical Competence include:
   a. Digital Literacy: Librarians are able to understand and use information and communication technology (ICT) effectively, including library software, online databases, social media, and other digital tools
   b. Technology Skills: Ability to apply technology in library management, such as basic programming, data analysis, data visualization, and library application development
   c. Information Management: Librarians are able to identify, collect, organize, store, preserve and provide access to information in a variety of formats, both print and digital
   d. Information Services: Librarians are able to provide quality information services to users including information search, reference, information literacy teaching and collection development
   e. Information Security: Librarians are able to protect information from security threats such as hacking, viruses and data theft

2. Social Competence include:
   a. Effective Communication: Librarians are able to communicate clearly, effectively, and persuasively both verbally and in writing with a wide range of audiences including users, colleagues and stakeholders

b. Collaboration: Librarians are able to work effectively with others both within a team and across departments to achieve common goals

c. Customer Service: Librarians are able to understand and meet user needs, providing friendly, responsive and user-centric service

d. Leadership: Librarians are able to lead and motivate others, take initiative and make effective decisions

e. Marketing and Advocacy: Librarians are able to promote libraries and their services to the public and advocate for the interests of libraries to stakeholders

3. Emotional Competence include:

a. Emotional Intelligence: Librarians are able to recognize, understand and manage their own and others' emotions and use emotions constructively in social interactions

b. Resilience: Librarians are able to cope with stress, face challenges and bounce back from failure

c. Continuous Learning: Librarians are able to learn and develop themselves both formally and informally, following the development of science and technology

d. Creativity and Innovation: Librarians are able to think creatively, generate new ideas and implement innovative solutions to solve problems

e. Critical Thinking: Librarians are able to critically analyze information, evaluate arguments and make informed decisions

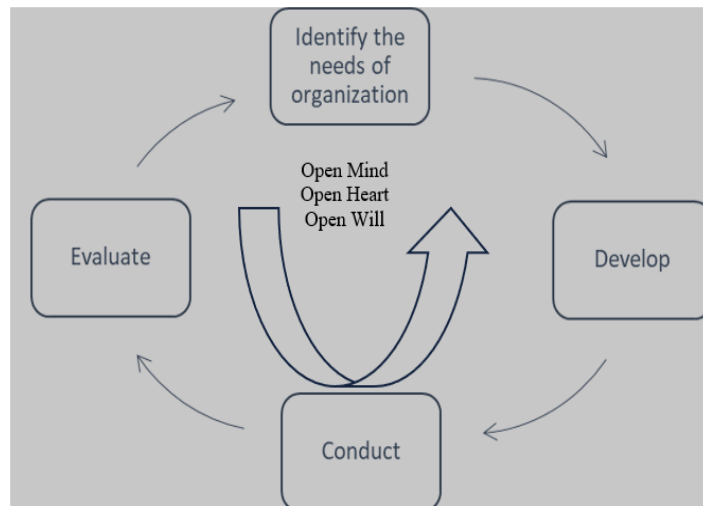## 2.3 Theory U-Based Training Management Model

Fig. 2: Theory U-Based Training Management Model
(Source: Researcher, 2024)

2.4 Theory U-Based Training Management Steps

Table 1: Theory U-Based Training Management Steps

No	Concept	Activities	Indicator
1	*Identify the needs of organization*	Training Needs Analysis (Goldstein, & Ford, 2002)	Identify competency gaps, clear and measurable training objectives, stakeholder involvement in the needs analysis process
2	*Develop*	Training Program Design (Gagné, Briggs, & Wager, 1992)	Specific learning objectives, training methods that are in accordance with the objectives and participants, relevant and up-to-date training materials, conducive learning environment
3	*Conduct*	Training Implementation (Kirkpatrick, 2006)	Effective training delivery, active participation of participants, continuous feedback, support from management.
4	*Evaluate*	Training Evaluation (Phillips, 1997)	Measurement of the level of achievement of learning objectives, assessment of the impact of training on performance, identification of areas of improvement, use of evaluation results for continuous improvement
5	*Open Mind*	5.1	Give full attention to the speakers, ask questions and summarize the material
		5.2	Participants are willing to consider different points of view from other participants
		5.3	Participants are able to identify their needs
		5.4	Participants are open to constructive feedback and criticism
6	*Open Heart*	6.1	Participants show empathy and understanding of the feelings and experiences of others
		6.2	Participants are able to express their own feelings and emotions honestly and openly
		6.3	Participants build genuine and trusting relationships with other participants and facilitators
		6.4	Participants are willing to share their personal experiences with other participants
7	*Open Will* (Scharmer, 2016)	7.1	Participants are able to release attachments and focus on the learning process
		7.2	Participants are willing to take risks and try new things
		7.3	Participants are able to adapt to change and uncertainty
		7.4	Participants are motivated by a larger, meaningful goal

Source: Researcher, 2024

4. Research Methods

This study uses a quantitative and qualitative approach. Quantitative data was collected through a questionnaire given to 30 librarians at the Private University Library in Medan City. Qualitative data were collected through in-depth interviews with 5 librarians and observations of the training process. The data were analyzed using descriptive and inferential analysis techniques.

1. Quantitative Approach:
   a. Participants: 30 librarians at the Private University Library in Medan City were selected as research samples. Sample selection was carried out using a purposive sampling technique, namely selecting librarians who had participated in Theory U-based training
   b. Instruments: Questionnaires are used as the primary instrument for collecting quantitative data. The questionnaire was developed based on a literature review and adapted to the context of the research. The questionnaire consisted of closed-ended questions on a Likert scale to measure the level of librarians' competence before and after training. The questions cover three competency domains, namely technical competence, social competence, and emotional competence
   c. Data Collection Procedure: Questionnaires are given to participants before the training (pre-test) and after the training (post-test). The collected data was then analyzed using descriptive statistics (mean, standard deviation) and inferential statistics (paired t-test) to test the research hypothesis

2. Qualitative Approach:
   a. Participants: 5 librarians from the research sample were selected for in-depth interviews. The selection of participants is carried out by considering the diversity of experience and background
   b. Instrument: Semi-structured interview guidelines are used as an instrument for collecting qualitative data. Interview guidelines are developed based on literature review and adapted to research objectives. The interview questions focus on the participants' experiences during training, the perceived changes in their competencies, and the application of learning in work practice
   c. Data Collection Procedure: Interviews are conducted face-to-face or through online platforms. Interviews are recorded and transcribed for further analysis. In addition to interviews, participant observation was also carried out during the training process to observe changes in participants' behavior and interactions
   d. Data Analysis: Qualitative data is analyzed using thematic analysis techniques. The themes that emerge from the data are identified, encoded, and analyzed to uncover deeper meanings and patterns

5. Research Instruments:

Questionnaire: The questionnaire consists of 30 closed-ended questions on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questions cover three domains of librarians' competencies, namely:

1. Technical Competencies (10 questions): Digital literacy, technology skills, information management, information services, and information security
2. Social Competencies (10 questions): Effective communication, collaboration, customer service, leadership, and marketing & advocacy
3. Emotional Competence (10 questions): Emotional intelligence, resilience, continuous learning, creativity & innovation, and critical thinking

6. Interpretation of Analysis Results

1. Convergence Validity: Measured by significant and high factor loads (usually > 0.50) for each indicator on its latent variable. This indicates that the indicators measure the same construct.
2. Validity of Discrimination: It is measured by ensuring that the correlation between latent variables is not too high (usually < 0.85) and that each indicator has a higher factor load on its own latent variable compared to other latent variables. This suggests that each latent variable measures a different construct.
3. Composite Reliability: Measured by a high composite reliability coefficient (usually > 0.70) for each latent variable. This shows that the indicators for each latent variable are consistent in measuring the construct.

7. Research Results and Discussion

The results of the U Theory-based training model research have a positive effect on improving the competence of librarians of Private University Libraries in Medan City using quantitative analysis and qualitative analysis with the following description

1. Quantitative Analysis (Questionnaire):
   a. Technical competence: showed a significant increase where ($p < 0.05$) on the average technical competency score and after participating in the Theory-based training model there was an increase of 14.7%
   b. Social competence: shows a significant increase where ($p < 0.05$) in social competence scores. The average score increased from 3.88 (SD = 0.58) before training to 4.35 (SD = 0.48) after using the Theory U-based training model experienced an increase of 12.1%.
   c. Emotional competence: showed a significant increase where ($p < 0.05$) in emotional competence scores. The average score increased from 3.60 (SD = 0.70) before training to 3.96 (SD = 0.61) after using the Theory U-based training model experienced an increase of 10%.

2. Qualitative Analysis (Interviews and Observations):
   a. Technical competence: shows that librarians are more confident in using digital technologies such as software, online databases and social media
   b. Social competence: shows that librarians are able to communicate effectively, both verbally and in writing

c. Emotional competence: demonstrates that the librarian is able to cope with his or her emotions towards others and is able to manage stress, face challenges and self-motivate the librarian

8. Discussion

The training model based on U Theory is suspected to be more effective in improving the competence of librarians of private universities in the city of Medan in the digital era. This U Theory-based training model can synergize with technical competence, social competence and emotional competence so that librarians can develop their competencies.

Librarian competencies such as technical competence, social competence and emotional competence can explain that librarians have successfully mastered the skills and knowledge to utilize digital technology in their work, explain that librarians have been able to build better relationships with users and provide excellent service and explain that librarians can develop the ability to manage emotions. The Theory U-based training model can improve the competence of librarians of private universities in Medan City.

9. Conclusion and Advice

Based on the results of the research that has been described above, it can be concluded that Theory U-based training is an effective training model for improving the competence of librarians of Private Universities in Medan City in the digital era with a significant increase in aspects of technical competence, social competence and emotional competence.

The analysis of improving the competence of librarians of Private Universities in Medan City after conducting training can be seen from the results of quantitative and qualitative analysis with the following details:

1. Quantitative Analysis:
   a. Technical Competence: There was an increase in competence by 14.7% (from 3.75 to 4.30) with a significance $p < 0.05$.
   b. Social Competence: There was an increase in competence by 12.1% (from 3.88 to 4.35) with a significance of $p < 0.05$.
   c. Emotional Competence: There was an increase in competence by 10% (from 3.60 to 3.96) with a significance $p < 0.05$.

2. Qualitative Analysis:
   a. Technical Competence: There is an increase in the ability to use digital technology, search, evaluation and information management
   b. Social Competence: There is an improvement in the ability to communicate, collaborate and provide customer service
   c. Emotional Competence: There is increased self-awareness, emotion management,
   d. stress coping skills and motivation to learn

The results of quantitative analysis and qualitative analysis show that the training model based on Theory U not only improves technical competence in mastering technology but also social and emotional competence has a positive effect on providing quality and relevant services in the digital era.

10. Suggestion

Based on the conclusion above, the researcher recommends the following, namely:

1. Theory U-based training model that has been proven effective can be applied to private universities in Indonesia to improve the competence of librarians at large.
2. The development of Theory U-based training model is more comprehensive and sustainable by taking into account the specific needs of librarians in various types of libraries and the ever-changing development of technology
3. This research requires an evaluation of the long-term impact on librarians' performance, library service quality and user satisfaction.
4. Dissemination of research results is necessary for stakeholders in the library sector such as librarians, library managers and policy makers to increase awareness of the importance of developing librarians' competencies in the digital era

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