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# From resistance to acceptance and use of technology in academia

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**Abstract**

The phenomenon of faculty's resistance to use technology in higher education is the focus of this research as a secondary reading of the existing relevant research with the purpose of analyzing factors of resistance and finding the solutions. This paper is an excerpt from a Doctoral dissertation and is focused on the causes of resistance and finding possible solutions to re-think resistance (Matrosova Khalil, 2011, 2012). It is hoped that the results of this study will contribute to the understanding of resistance factors, add to the development of the theoretical basis of re-thinking resistance, and to create a path for redirecting away from psychological defensive behavior expressed by faculty. This last aspect is characterized as part of emotional and behavioral resistance, which this research hopes to transform from a negative to a positive attitude towards change.

**Keywords**: Academia; Adult learners; Faculty; Resistance to change; Technology

*Tell me, and I will forget.*
*Show me, and I may remember.*
*Involve me, and I will understand.*
Confucius, Chinese philosopher,
(551 BC—479 BC)

## Methodology

The factors of faculty resistance to technology in academia will be investigated in this qualitative study by reviewing (as a secondary reading) and analyzing already existing research, and combining the many survey results of the previous research in one *new analysis.* This study is seen as an identification of the process of change from resistance to learning and accepting technology. This new analysis and its recommendations would be helpful for faculty and leadership in recognizing the factors that cause resistance in their institutions, thereby being able to create a path for overcoming the problem.

The purpose of this investigative qualitative study is to *analyze* the phenomenon of faculty resistance to technology in academia and to add to the development of the theoretical basis for *re-thinking* this resistance. Organizational change is needed to overcome the factors of faculty resistance in using technology. Although a majority of research is done on the factors of faculty resistance to technology and resistance to change in academia, the fact of the resistance remains. The question is: "How one can use the rich data on resistance to change faculty attitudes?" Several authors propose to "re-think" resistance to change in order to help employees go through the change process in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). The factors of resistance vary from one research study to another, as well as the recommendations for improving this situation. There is a need to organize these factors so the picture of faculty resistance to technology can be reveal in all its details. To treat the problem one should identify its causes. The categorization of the many causes of resistance should be presented as one clear document, serving as a "blue print" for administration and leadership in institutions of higher education in order to identify

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the specific factors of resistance in their institutions, to try and find solutions to overcome those factors, and to help faculty learn about and use technology in their work. In addition, this "blue print" would be helpful for faculty to see a scope of the issues associated with resistance, understand them, and conquer them with the appropriate support of leadership from their institutions. Finally, the results of the study and its implications benefit a wider audience –the students who have the desire to learn with the use of technology, seeing as it provides them with a variety of resources and is convenient to access from many locations which allows them to balance their busy lives with the ability to advance their education.

## The problem

*Resistance*: an opposing or retarding force (Merriam Webster Online, 2011). "Why is resistance to technology in our technological time still present?" one might ask. The fact is that some of the faculty in many institutions are resisting to learn about and using technology. In order to learn about this phenomenon three specific questions were identified: 1. What are the factors that contribute to faculty resistance to technology in our technologically advanced time?; 2. How can faculty, as adult learners, be prepared to understand technology and learn about its use in instruction?; and 3. How can faculty reluctance or un-readiness to technology be overcome cognitively through participation in change?

Undeniably, educational technology has been changing higher education on a global scale, and will continue to do so. Online learning as one of the forms of distance education has become a standard way of learning in many colleges and universities, and is changing the way faculty teach and students learn (Kidney, 2004; D'Arcy, Eastburn, & Bruce, 2009; Smith, Schneider, Kontos, Kuzat, Janossy, Thurmond, K. *et al.*, 2007). The problem is that in many colleges and universities, there remain faculty members who resist using educational technology in teaching, communication and research. Many authors contributed to the research of resistance in academia (Berge, & Muilenburg, 2001; Howard, Schenk & Discentza, 2002; Rodriguez, 2005; Shelton & Saltsman, 2005; Moerschell, 2009). This study will investigate both resistance and methods for changing faculty behavior towards the use of technology. The available research on the factors behind faculty resistance to change their current ways of teaching and adapting to the use of technology in instruction, points to the need for continuing research on how to overcome those factors of resistance and bring educational technology to the classroom. Also, the available research shows that there is lack of any general theory of resistance to technology (Oreg, 2006). This study aims to fulfill such a deficiency, and to contribute to the development of the theory of resistance to technology.

## Literature review and theoretical background

The survey of literature for this study was focused on several issues:

1. The evolution of technology in teaching and learning.
2. The causes and the factors of faculty resistance in using technology in their work.
3. The theories of teaching adults and the necessity of using technology while teaching adults in academia.
4. The Change Resistance Theory in relation to faculty resistance to technology.
5. The role of academic leadership in creating effective and technologically advanced learning environments for all—adult students and faculty equally.

## The evolution of technology in teaching and learning

Online learning has been gaining popularity due to its convenience and allowance in accessing a wealth of resources in a short amount of time. Shelton and Saltsman (2005, p. 6) justified online learning as effective for the institutions of higher education for three reasons: 1. To fulfill a mission of delivery to a larger service area; 2. To accommodate population growth by increasing enrollment without spending money on construction and property; and 3. To reach a wider student population by gathering more potential students who otherwise would not be able to physically attend classes. The educational methodology of online education is considered no longer experimental and benefits of such learning with the easy access and flexibility understood by many institutions of higher education (Berge & Muilenburg, 2001). Yet, some institutions are not making "changes necessary to maximize the effectiveness and efficiency of online learning" (Howard, Schenk, & Discentza, 2002, as cited in Shelton & Saltsman, 2005, p. 7). Shelton and Saltsman (2005) identify several issues, which if removed, will improve the effectiveness of online education in the future. Those identified issues are: lack of skills among personnel, organizational structure and institutional culture that resists change, and funding (Berge & Muilenburg, 2001; Shelton & Saltsman, 2005).

## The causes and the factors of faculty resistance to the use of technology in their work

Several issues were identified through the survey of literature. Moerschell (2009) in the article *Resistance to Technological Change in Academia* clearly stated the array of attitudes towards technology from "the old timers who like things as they are" (para. 8–9) to the lack of awareness and interest to envision the benefits of technology. Moerschell (2009) pointed out several reasons of resistance, including: a. limited vision of the future; b. comfort with the way things are; c. deficits in information and communication; d. the individual's nature to be uncooperative; and e. that they do not have the skills to do what the leader is proposing (Bergmann & Brough, 2007, as sited in Moerschell, 2009, para. 13). Moerschell (2009) also reported that the culture in academia is a serious factor of resistance to technology and it "epitomizes this behavior," and is "a necessary systemic component of implementing technological change" (para. 22). This issue was addressed by many authors such as Bergmann and Brough (2007); Cameron and Green (2004); Horn (2002); and Kitchen and Rodriguez (2005).

The majority of resistance literature is focused on its causing factors, specifically the adoption of online learning. Berge and Muilenburg (2001) identified 64 barriers or factors of resistance to distance education that were grouped into 10 factors (table 1).

Harvey and Broyles (2010, p. 112, Table 23.2 Resistance Factors) identified 20 factors of resistance and pointed out the antidotes to them (table 2).

## The theories of teaching adults and the necessity of using technology in teaching adults in academia

Faculty along with their students are viewed in this study as adult learners, and therefore the theories explained below are fully applicable to faculty as adult learners. There are several theories that construct the base of this study. In recent years, the cohort of adult learners in academia has changed (Palfrey & Gasser, 2008, Erickson, 2010). In order to effectively teach their adult students, faculty must learn about and implement technology in their teaching. The several theories that contribute to the understanding of the specifics of adult learners and their education used in this study are: Knowles' Theory of Andragogy (1980); Bloom's Cognitive Taxonomy (1956); Rotter's Internal-External Locus of Control Scale (RIELC, Rotter, 1966, 1975), Kolb's Learning Style Theory

**Table 1: 10 factors of resistance, Berge and Muilenburg (2001)**

| # | Factor | Issue |
|---|---|---|
| 1 | Administrative structure | Management of distance learning is problematic |
| 2 | Organizational change | Most organizations are resistant to change |
| 3 | Technical expertise | Professional development and support |
| 4 | Social interaction and quality | Isolation of faculty and students, quality of programs, courses, and students learning and assessments |
| 5 | Faculty compensation and time | Time consuming, lack of funding |
| 6 | Threatened by technology | Replaced by technology? |
| 7 | Legal issues | Internet and copyright, fair use policies, piracy, intellectual property rights, and problems with hackers and viruses |
| 8 | Evaluation/Effectiveness | Concern over a lack of research supporting the effectiveness and evaluation of distance education |
| 9 | Access | Lack of access or concerns over equal access to courses offered via newer technologies such as Web based instruction for both instructors and students |
| 10 | Student support services | Provision of student services such as advisement, library services, admissions, and financial aid-at a distance is a critical facet of any distance learning program (Muilenburg, 2001). |

(1984, 2005), Rossmans Adult Learning Inventory (Rossman & Rossman, 2011), Change Resistance Theory (Diamond, 1986; Piderit, 2000; Oreg, 2006) and Ramsden's (1998) Theory of Leadership and Theory of Control, and Argyris and Schön's (1992) Theory of Action.

Among the theories of teaching adults, Knowles' Theory of Andragogy (1980) stands out the most. This theory explains the way adults learn and received global wide recognition and support in higher education and professional development. Taylor & Kroth (2009) summed up the characteristics of andragogy explained by Knowles as:

- learner-focused education in contrast to pedagogy as teacher-based education;
- where learners are more self-directed than teacher-directed;
- an instructor is a facilitator of learning rather than an originator of it;
- an environment where adult instructors and their adult students are engaged in challenging, passionate, and creative activity (Taylor & Kroth, 2009).

The theory of andragogy by Knowles has transformed higher education of today and the views of how adults are learning (Taylor & Kroth, 2009).

Another method that can be used in teaching adults/faculty is Bloom's Cognitive Taxonomy (1956) that has direct application to the issue of faculty's learning about technology. This educational theory used in teaching adults was designed to present systematic classifications of cognitive operators (Halawi, Pires, & McCarthy, 2009). Bloom classified simple and complex cognitive operations and categorized the three distinctive domains of behavior: cognitive, affective, and psychomotor. The

**Table 2: 20 factors of resistance and antidotes to them, Harvey and Broyles (2010)**

| # | **Factor** | **Antidote** |
|---|---|---|
| 1 | Lack of Ownership | Participation: In what? How? |
| 2 | Lack of Top Brass Support | Top Brass Support<br>Payoff for Brass Support<br>Co-option of Trusted Advocates to Top Brass |
| 3 | Lack of Perceived Benefits | Meaningful Payoff |
| 4 | Lack of Recognition | Recognition Scorecard<br>Celebration<br>Participation |
| 5 | Increased Burdens | Payoffs<br>Small Steps |
| 6 | Loneliness | Collegiality<br>Change Teams<br>Gradualism |
| 7 | Insecurity | Enhance Security through Participation<br>Trust Building |
| 8 | Norm Incongruence | Norm Setting |
| 9 | Boredom | Joy and Fun<br>Celebration<br>Simplicity |
| 10 | Chaos | Continuity with Principles<br>Perception of Control |
| 11 | Superiority | Peer Recognition<br>Multiple Recognitions |
| 12 | Differential Knowledge | Equal Sharing if Information |
| 13 | Sudden Wholesale Change | Gradualism<br>Trialism<br>Celebrate Small Wins |
| 14 | Fear of Failure | Affirmation<br>Ensure Small Successes<br>Learn from Risk Taking |
| 15 | Extremes of Organizational Structure | Moderate Centralization<br>Moderate Formalization |
| 16 | Suspicion | Trust |
| 17 | Ambiguity | Clarity |
| 18 | Leadership Skills | Leadership Skills Development |
| 19 | Inertia | Stress |
| 20 | (Anything) | Referent Power/Strong Trust (Harvey & Broyles, 2010) |

cognitive taxonomy is placed by Bloom hierarchically into six categories, and is heavily used in education:

- *knowledge*, which focuses on memorization, recognition, and recall of information;
- *comprehension*, which focuses on organization of ideas, interpretation of information, and translation;
- *application*, which focuses on problem solving, use of particulars, and principles;
- *analysis*, which focuses on finding the underlying organization, and the division of a whole into components;
- *synthesis*, which focuses on a combination of ideas to form something new, creating something unique whether verbal or physical;
- *evaluation*, which is the highest level in the taxonomy and focuses on making judgments about issues, resolving disparities or disagreements (Halawi, Pires, & McCarthy, 2009, para. 9).

One way of learning about adult learners—in the case of this research, the faculty in academia—is through the use of Rotter's Internal-External Locus of Control Scale (RIELC, Rotter, 1966, 1975), which is a system that allows one to learn about the "individuals' beliefs regarding the nature of the environment and/or their expectations about how reinforcement is controlled" (Dille, & Mezack, 1991, p. 26). According to this scale, individuals with internal lack of control believe that academic success is due to their efforts and abilities, while individuals with external lack of control believe that success depends on external factors such as luck (Dille, & Mezack, 1991). Rovai (2007) states that students with strong internal locus of control are "mostly internally regulated (or autonomous), have more interest, confidence, excitement, persistence, better performance, and show a better conceptual understanding of the material than students who are mostly externally controlled" (Rovai, 2007, para 11). The knowledge of internal-external regulators of adult learners—faculty can be used in designing the professional development courses to learn about technology.

To help faculty learn in a more effective way, they must gain knowledge about the variety of learning styles. Those learning styles are described in Kolb's Learning Style Theory (1984, 2005) which is a learning theory based on the theories of human learning and development of Dewey, Lewin, Piaget and other educational philosophers. Kolb's identified four main learning styles: 1. *Diverging*—people who are better at generation ideas, have "broad cultural interests and like to gather information. . . imaginative and emotional, have broad cultural interests. . . tend to specialize in arts, prefer working in groups, to listen with an open minds, and to receive personalized feedback;" 2. *Assimilating*—people who are best at understanding a "wide range of information and putting it into a concise, logical form. . . interested in ideas and abstract concepts. . . prefer readings, lectures, exploring analytical models, and having time to think things through;" 3. *Converging*—people who use this learning style are "best at finding practical uses for ideas and theories. . . have ability to solve problems and make decisions based on finding solutions to questions or problems. . . prefer to experiment with new ideas, simulations, laboratory assignments, and practical applications;" and 4. *Accommodating*—people with this learning style have the "ability to learn from 'hands-on' experiences. . . act on 'gut' feelings rather than on logical analysis. . . rely more heavily on people for information than on their own technical analysis. . . prefer to work with others to get assignments done, to set goals. . . to test out different approaches to completing a project" (Kolb's, 2005, pp. 196–197).

To help faculty, leadership and professional development departments could incorporate Rossmans (2011) Adult Learning Inventory onto preparation of the workshops on learning about technology. Rossmans (2011) noted that adult learners are often issue or problem centered rather

than subject centered. Rossmans (2011) Adult Learning Inventory correlates to Knowles (1980) Theory of Andragogy that states adults should be taught differently than children because their cognitive and learning processes are drastically different (Brookfield, 2005; Birzer, 2004; Mezirow, 2000; Cranton, 1994; Knowles, 1980; Knowles, Holton, & Swanson, 1998). This theory is globally recognized and as Lee (1998) points out, "many of Knowles' 19 books are used as texts in adult education programs around the world" (para. 5). Rossmans (1990) reported that "An adult's experience may interfere with the learning experience" (Rossman & Rossman, 2011). The authors observed that extensive experience in many older and experienced adults causes resistance to change, and at the same time represents a "potentially rich resource for learning and an obstacle to learning" (Smith, 1982, as sited in Rossmans, 1990).

## The change resistance theory and control theory in relation to faculty's resistance to technology

The Change Resistance Theory (Diamond, 1986; Piderit, 2000; Oreg, 2006) has been lately receiving a lot of attention in scholarly literature. Several authors propose to "rethink" resistance to change in order to help employees going through the change process in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). The theory of resistance to change states that resistance should be viewed as a multidimensional (negative) attitude towards change and it consists of three interconnected elements: cognitive, affective, and behavioral/intentional components (Piderit, 2000; Oreg, 2006). Piderit (2000) proposes to look at the complexity of the resistance to change as a "set of responses to change that are negative along all three dimensions, and 'support for a change' is represented by the set of responses that are positive along all three dimensions" (para. 5). The first and the most common element of resistance is behavioral, which is characterized by undesirable behavior or aggression towards the change in jobs and work methods imposed by management (Lewin, 1952; Coch & French, 1948; Brower & Abolafia, 1995; Ashforth & Mael, 1998; Shapiro, Lewicki, & Devine, 1995; as cited by Piderit, 2000, para. 14–15). The second element of resistance is emotional—frustration, aggression, and anxiety as it pointed out by several researchers (Coch & French, 1948; Argyris and Schon, 1974, 1978; as cited in Piderit, 2000, para. 16). The third element is cognitive.

In most of the literature on resistance authors state the factor of frustration associated with the process of change. Cartwright (1968) in the theory of frustration reasoned that:

> for all goal-directed activity involves some degree of conflict. . .(the conflict of these two opposing forces—the driving force corresponding to the goal. . .and the restraining force of the difficulty of the job—produces frustration) yet a person is not usually frustrated so long as he is making satisfactory progress towards his goal (p. 339).

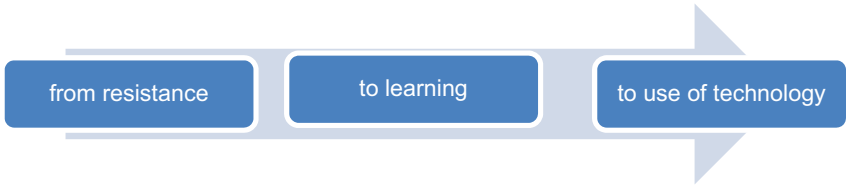
Resistance frequently can be characterized as reluctance or un-readiness and can be overcome cognitively through participation in change (Piderit, 2000). Diamond (1986) adds that preconscious and unconscious psychological defenses are obstructing learning and "illustrate compulsive, repetitive, security-oriented, error-inducing and self-sealing human behavior" (p, 544). He continues that "these defensive and adaptive tendencies usually protect the status quo and, therefore, block learning" (p. 544). Moerschell (2009) noted that collective and individual personalities affect the organizational change and that faculty resists technology because it might challenge the integrity of their scholarship. Oreg (2006) and Horn (2002) add that teachers resist change because it does not agree with their expectations and their efforts to learn about the technology, and it increases anxiety and fear. "The letting go of the old and the taking-on of the new," the exploration of "their

fears, anxieties and defensive actions that surfaced in the form of basic assumptions, provided clients with first-hand knowledge of resistance to change interfering with learning to double-loop learn (Diamond, 1986, p. 545). He continues that the remedy for resistance "involves a cognitive realignment of resistors' espoused theories and their theories-in-use" (Diamond, 1986, para. 18). Piderit (2000) sums up that" we should retire the phrase 'resistance to change,' and I advocate a new wave of research on employee responses to change, conceptualized as multidimensional attitudes" (para. 37).

The Leadership Theory and Control Theory (Ramsden, 1998) and Argyris and Schön's (1992) Theory of Action are chosen by the author as support to the Theory of Andragogy as the main motif for the study. Ramsden (1998) asserted that it is the role of effective leaders in reframing educational organizations to address the new needs of community learners—the students and the faculty. Genuine learning requires an environment of "trust and an absence of fear, where the academics, like their students will take risks, excel, and do remarkable things" (Ramsden, 1998, p. 268). Ramsden (1998) believed that academic leadership should provide for everyone an "environment for enterprise, bold moves, and imagination—in teaching, research and professional practice" (p. 267).

## The role of academic leadership in creating effective and technologically advanced learning environments for all—adult students and faculty equally

*Process of change from resistance to learning and accepting technology*




To reduce faculty anxiety, demystify technology, and promote use of technology by faculty several steps can be implemented, Gibson and Peacock (2006) contend. The researchers developed a professional development model as a website with the intention to provide practical resources for faculty to learn and to use technology. This site was designed for users with different levels of knowledge in technology—from nonusers to early adapters who are looking for new ideas (Gibson & Peacock, 2006). From the findings of the research five core areas of data emerged: 1. Amount of information; 2. Quality of information; 3. Ease of use; 4. Appearance; and 5. Usefulness of information. The summary of the inputs of the participants of the research differ according to their prior knowledge and use of technology. The beginners stated that prior to use of the self-paced website they wanted face to face interactions with the instructor to learn about the basics of using technology. The participants commented about the user friendly format, which was not intimidating to faculty as learners (Gibson & Peacock, 2006). The lessons learned from this research are that faculty as adult learners need help in learning about technology. They need continuing technical support and resources that can be re-visited again and again to master the knowledge. Faculty needs continuing assistance of professional technology development personnel to solve the arising issues and to get new ideas on technology integration into teaching (Gibson & Peacock, 2006).

Tobin (1999) presented a Practical Leadership Skills Framework (table 3).

**Table 3: Practical Leadership Skills Framework, Tobin (1999)**

| # | Skill | Action |
|---|---|---|
| 1 | Maintain or enhance the self-esteem of the employee | Being given full information will enhance their self-esteem: they are not being taken for granted and they can actively participate |
| 2 | Don't attack the person. Focus on the problem | You focus first on the need for change. Next on the problems this means for employee. Then on the problems that the employees sees. Next, on overcoming these. Finally, on the problem of implementation |
| 3 | Don't assume that the employee has committed an offence | Don't mistake reluctance for deliberate obstruction (we know that resistance is legitimate) |
| 4 | Encourage the employees to express their opinions and make suggestions | The Change framework is designed to encourage opinions and suggestions—to gain participation and commitment |
| 5 | Allow the employee adequate time to think through the problem and suggest a solution | Time to accept the idea of a change is important. Given time, employees nearest to the change are often in the best position to think of solutions |
| 6 | Ensure that the employee has an appropriate Action program | An appropriate action program could be for the employee to think about the problems, or give the change a do, or it could be a series of programmed steps |
| 7 | Always set a specific follow up date | This let you to discuss new problems, new progress, and congratulate the employee on success so far (Tobin, 1999, p. 12) |

## The change factors and their use to motivate faculty members to overcome resistance to change

The change factors include three components: emotional or affective (the way people feel about the change such as frustration, anger, or fear), cognitive (ones thoughts about the change and its necessity), and behavioral (actions or intentions to act towards of change) (Oreg, 2006). This author argues that the tridimensional factors, even though interconnected, have different impact on change consequences or outcomes. The researcher was investigating the antecedents and the predictors of the resistance attitude components and the work-related outcomes. The three resistance components are detailed in table 4.

The findings of the study suggested that most important antecedents to resistance to change were employees' sense of autonomy, challenge, stimulation such as intrinsic motivation, and trust in management. Oreg (2006) states that resistance to change decreased when employees have trust in their management. The author recommends that managers should be aware that people's feelings about change may "predict how they will feel about their jobs... that what they do as the change takes its course could help anticipate their willingness to remain in the organization; and ... later on translate into their commitment to the organization" (Oreg, 2006, p. 98). Oreg stressed that "trust in management proved to be a dominant variable in its associations with all three resistance components," (p. 97) and that management should invest in building and maintaining the trust of their employees. The conclusion of the research is that resistance to change as a multifaceted concept should be investigated to find different forms of resistance that could "indicate

**Table 4: Three Resistance Components, (Oreg, 2006)**

| Resistance components: | The antecedents are: |
|---|---|
| 1. Affective<br>2. Cognitive<br>3. Behavioral | 1. Personality with dispositional resistance to change |
| | 2. Context that consists of:<br>a. Power and prestige,<br>b. Job security<br>c. Intrinsic rewards<br>d. Trust in management<br>e. Information<br>f. Social influence |
| | 3. Work related outcome:<br>a. Job satisfaction<br>b. Intention to quit<br>c. Continuance commitment |

different types of antecedents, and thus would point to different measures for alleviating resistance" (Oreg, 2006, p. 97).

The leadership of colleges and universities could use the findings presented in this paper to identify the factors of resistance specific to their institutions, and to identify the path to re-think resistance and through active participation stand alongside faculty through the change process.

## Conclusion

The focus of this investigative qualitative research is the secondary reading of the existing relevant research with purpose of analyzing the phenomenon of faculty resistance to technology in academia, the factors of resistance and finding possible solutions. To learn about such a phenomenon the three specific questions were identified: 1.What are the factors that contribute to faculty's resistance to technology in our technologically advanced time?; 2. How can faculty, as adult learners, be prepared to understand technology and to learn about its use in instruction?; and 3. How can faculty's reluctance or un-readiness to technology be overcome cognitively through participation in change?

The resistance of faculty to changes in utilizing technology in higher education and managing that resistance may be among the most pressing challenges for leaders in academia (Berge & Muilenburg, 2001; Moerschell, 2009). The factors of resistance vary from one research study to another research, as well as the recommendations for improving this situation. In this paper the factors identified from the previous research, as a second reading, were categorized and presented in all their details. This document may be used as a "blue print" by administration and leadership of institutions of higher education to identify the specific factors of resistance in their institutions, to try to find solutions to overcome those factors, and to help faculty learn about and use technology in their work. In addition, it is hoped, this "blue print" could assist faculty in seeing a scope of the issues associated with the resistance, understand them, and conquer them with the appropriate support of leadership of their institutions.

To treat the problem one should identify its causes. Organizational change is needed to overcome the factors of faculty resistance in using technology. Several authors propose to "re-think" resistance to change, to view the resistance as a multidimensional attitude towards change that consists of

three interconnected elements cognitive, affective/emotional and behavioral/intentional components, and to help employees go through the change in an organization (Diamond, 1986; Piderit, 2000; Oreg, 2006). Piderit (2000) summed up that "we should retire the phrase 'resistance to change,' and I advocate a new wave of research on employee responses to change, conceptualized as multidimensional attitudes" (para. 37).

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