Individual characteristics and computer self-efficacy in secondary education teachers to integrate technology in educational practice

F. Paraskeva, H. Bouta, & Aik. Papagianni

2008
לורת אתר הקונרים בינו:

מטרת המחבר

- General self-efficacy
- Computer self-efficacy
- Self-esteem
- Demographic characteristics: prior experience, subject areas, software used, previous computer training.
General self-efficacy

Self-efficacy is defined as the personal judgment about one’s capability to adopt certain behaviors and actions in order to accomplish certain objectives and expected outcomes

(Bandura, 1997; Hoy & Miskel, 2001)
computer self-efficacy

judgment of one’s capability to use a computer

Compeau and Higgins (1995)
Self-esteem generally expresses the emotional part as the evaluation component of self-concept...how individuals feel about themselves. As an evaluation component it represents whether individuals view themselves as good or bad, competent or incompetent (Scholl, Beauvais, & Leonard, 1995)
• אמונות המורים לגבי המסוגלות שלהם קשורות לאופן ההוראה והישגיהם של התלמידים שלם.

• יחסו החיובי של המורים ל sitiוניזים אメイン реализציה טכנולוגית מודרנית משפיע על הצלות של תרגולויות בכתיבה.

• מדיניות יחידידיות של המורה, כמו המסוגלות עצמית במחשב, דימוי עצמי, תופסות עצמית, תわたצ浈ח, צורה ורכיבה, הן גורמים משפיעים על פיתוח ושימור של תרגוליות מודרניות באהיה.
מחקרים מציעים של טכנולוגיה יש פוטנציאל לשנות את הפקדים של המורים המהפקדים המסורתיים למחוק ומסייע. בנוסף טכנולוגיה יכלו גם לхотפי על המתו השותפות העיאלה של התלמידים.

• מורים עם תחושת מסוגלות כללית גבוהה פתוחים יותר לרעיונות חדשים ומוכנים יותר להתנסות بشיטות חדשות. תחושת מסוגלות כללית משקפת השפעת חיובית ניכרת בהתייחס ליכולות ענימיות בשעות ח־יבית ניכרת בדחיות למסוגלות ענימיות מבחרם.
רקע תיאורטי

הכשרה מקצועית המשלבת טכנולוגיות מחוות אמותי

משמעויות בàngברת החוטש המсложнת בתוכשביום של המורים.

תוחלת המсложнת העצמית במחשבים של המורה

MOSTEF MINISIN KODEM

-ותק בשמות במחשב

-אוספי השימש (סונג אפליקציית צדד)

-ניסיון זה מושפע מואד על הביטחון העצמי של המורים

המורים בכל הקשורים לישולים טכנולוגיים בתוכשביום ראשון.
Research questions

1. The relationship between general self-efficacy and computer self-efficacy.
3. The relationship between teachers’ subject areas, prior experience in using computers and software (as an educational tool), previous computer training and computer self-efficacy.
מתודולוגיה

אוכלוסיית המחק:

286 מורי חטיבה בתחומי שעת שוני:

– 145 ממדעי החברה/לימודיクラスיים 50.6%  
– 87 מתחום המדעים 30.5%  
– 54 מתחומי טכנולוגיות:인터넷, מחשבים מולטיימדיה 18.9%
Computer self-efficacy was operationalized using the Computer Self-Efficacy Scale by Murphy, Coover, and Owen (1989). This scale was developed to measure individuals’ perceptions of their capabilities regarding specific computer knowledge and skills.

- Items represent beginner skills, advanced skills, file and software.
- The Likert-scale items ranged from “1” (Strongly Disagree) to “5” (Strongly Agree).
The research instruments for data collection

The General Perceived Self-Efficacy Scale  
(Matthias Jerusalem and Ralf Schwarzer, 1981)

- a ten item, Likert-type scale that purports to measure a belief in personal competence

Computer self-efficacy

General self-efficacy

Self-esteem

Demographic characteristics
  prior experience, subject
The research instruments for data collection

The Rosenberg Self-Esteem Scale.

-measures global feelings of self-worth or self-acceptance.
- includes 10 items that are usually scored using a four-point response

(Blascovich & Tomaka, 1991).
# The research instruments for data collection

## demographic questionnaire

A questionnaire regarding teachers’ subject areas, prior experience, software used (as educational tools), previous computer training.

<table>
<thead>
<tr>
<th>General self-efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer self-efficacy</td>
</tr>
<tr>
<td>Self-esteem</td>
</tr>
<tr>
<td>Demographic characteristics prior experience, subject</td>
</tr>
</tbody>
</table>
Computer Self-Efficacy Scale by Murphy, Coover, and Owen (1989).

Appendix 1: Computer Self-Efficacy Scale (from Murphy, Coover, & Owen, 1989)

I feel confident entering and saving data (words and numbers) into a file.
I feel confident calling up a data file to view on a monitor screen.
I feel confident storing software correctly.
I feel confident handling a floppy disk correctly.
I feel confident escaping/exiting from a program or software.
I feel confident making selections from an on-screen menu.
I feel confident copying an individual file.
I feel confident using the computer to write a letter or essay.
I feel confident moving the cursor around the monitor screen.
I feel confident working on a personal computer (microcomputer).
I feel confident using a printer to make a "hardcopy" of my work.
I feel confident getting rid of files when they are no longer needed.
I feel confident copying a disk.
I feel confident adding and deleting information to and from a data file.
I feel confident getting software up and running.
I feel confident organizing and managing files.
I feel confident understanding terms/words relating to computer software.

I feel confident understanding terms/words relating to computer hardware.
I feel confident describing the function of computer hardware (keyboard, monitor, disk drives, processing unit).
I feel confident troubleshooting computer problems.
I feel confident explaining why a program (software) will or will not run on a given computer.
I feel confident understanding the three stages of data processing: input, processing, output.
I feel confident learning to use a variety of programs (software).
I feel confident using the computer to analyze number data.
I feel confident learning advanced skills within a specific program (software).
I feel confident using the computer to organize information.
I feel confident writing simple programs for the computer.
I feel confident using the user's guide when help is needed.
I feel confident getting help for problems in the computer system.
I feel confident logging onto a mainframe computer system.
I feel confident logging off a mainframe computer system.
I feel confident working on a mainframe computer.
I feel confident logging onto a computer network.
I feel confident logging off a computer network.
I feel confident working on a computer network.

מה דעתכם על השאלון? 
מה הביקורת שלכם על השאלון? 

נסו בעצמכם:

Computer self-efficacy
General self-efficacy
Self-esteem
Demographic characteristics prior experience, subject

 نها בצעמצם:
## The General Perceived Self-Efficacy Scale /Ralf Schwarzer & Matthias Jerusalem, 1995

[http://userpage.fu-berlin.de/~health/greek.htm](http://userpage.fu-berlin.de/~health/greek.htm)

<table>
<thead>
<tr>
<th></th>
<th>Computer self-efficacy</th>
<th>General self-efficacy</th>
<th>Self-esteem</th>
<th>Demographic characteristics prior experience, subject</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>I can always manage to solve difficult problems if I try hard enough.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>If someone opposes me, I can find the means and ways to get what I want.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>It is easy for me to stick to my aims and accomplish my goals.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>I am confident that I could deal efficiently with unexpected events.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Thanks to my resourcefulness, I know how to handle unforeseen situations.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I can solve most problems if I invest the necessary effort.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>I can remain calm when facing difficulties because I can rely on my coping abilities.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>When I am confronted with a problem, I can usually find several solutions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>If I am in trouble, I can usually think of a solution.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>I can usually handle whatever comes my way.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### ⚫ ביקורות

<table>
<thead>
<tr>
<th>According to Schwarzer &amp; Jerusalem</th>
<th>According to Paraskeva, Bouta &amp; Papagianni</th>
</tr>
</thead>
<tbody>
<tr>
<td>part of a more comprehensive questionnaire, the 10 items are to be mixed at random into a larger pool of items.</td>
<td>Was not integrated into a larger questionnaire</td>
</tr>
<tr>
<td>Developed for clinical change. <strong>Since</strong> perceived self-efficacy is an operative construct, i.e., it is related to subsequent behavior and, therefore, is relevant for clinical practice and behavior change. There is a teacher SE questionnaire</td>
<td>Used in an educational context with people not confronted with real difficulty</td>
</tr>
<tr>
<td>There is no cut-off score. Not meant for categorizing into low-high self esteem</td>
<td>Categorized into high-low self esteem</td>
</tr>
</tbody>
</table>
# The Rosenberg Self-Esteem Scale

[http://www.wwnorton.com/college/psych/psychsci/media/rosenberg.htm](http://www.wwnorton.com/college/psych/psychsci/media/rosenberg.htm)

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### Rosenberg's Self-Esteem Scale

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel that I am a person of worth, at least on an equal plane with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I feel that I have a number of good qualities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. All in all, I am inclined to feel that I am a failure.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I am able to do things as well as most other people.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I feel I do not have much to be proud of.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. I take a positive attitude toward myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. On the whole, I am satisfied with myself.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. I wish I could have more respect for myself.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. I certainly feel useless at times.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. At times I think I am no good at all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Findings

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Scale maximum</th>
<th>Mean</th>
<th>s.d.</th>
<th>GSE</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>GSE</td>
<td>286</td>
<td>4</td>
<td>2.99</td>
<td>0.39</td>
<td>0.2720</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>CSE</td>
<td>286</td>
<td>5</td>
<td>3.62</td>
<td>0.98</td>
<td>0.2359</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>Basic skills</td>
<td>286</td>
<td>5</td>
<td>4</td>
<td>0.94</td>
<td>0.2930</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Advanced skills</td>
<td>286</td>
<td>5</td>
<td>3.32</td>
<td>1.03</td>
<td>0.2506</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Files and software skills</td>
<td>286</td>
<td>5</td>
<td>3.64</td>
<td>1.09</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

n = sample size; GSE = general self-efficacy; CSE = computer self-efficacy; r = correlation co-efficient; p = statistical significance of correlation; p < 0.05.
# Findings

## Correlation between self-esteem and computer self-efficacy

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Scale maximum</th>
<th>Mean</th>
<th>s.d.</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>286</td>
<td>4</td>
<td>3.58</td>
<td>1.73</td>
<td>0.1033</td>
<td>0.0921</td>
</tr>
<tr>
<td>CSE</td>
<td>286</td>
<td>5</td>
<td>3.63</td>
<td>0.97</td>
<td>0.1179</td>
<td>0.0545</td>
</tr>
<tr>
<td>Basic skills</td>
<td>286</td>
<td>5</td>
<td>4.01</td>
<td>0.93</td>
<td>0.1159</td>
<td>0.0588</td>
</tr>
<tr>
<td>Advanced skills</td>
<td>286</td>
<td>5</td>
<td>3.33</td>
<td>1.03</td>
<td>0.0861</td>
<td>0.1604</td>
</tr>
<tr>
<td>Files and software skills</td>
<td>286</td>
<td>5</td>
<td>3.66</td>
<td>1.08</td>
<td>0.1159</td>
<td>0.0588</td>
</tr>
</tbody>
</table>

n = sample size; GSE = general self-efficacy; CSE = computer self-efficacy; r = correlation co-efficient; p = statistical significance of correlation; p < 0.05.
Findings

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<thead>
<tr>
<th>Variable</th>
<th>n</th>
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<th>s.d.</th>
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<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers’ subject</td>
<td>286</td>
<td>3</td>
<td>1.54</td>
<td>0.92</td>
<td>0.4732</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Prior experience</td>
<td>286</td>
<td>5</td>
<td>3.77</td>
<td>0.98</td>
<td>0.7662</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Software use as educational tools</td>
<td>286</td>
<td>1</td>
<td>0.87</td>
<td>0.34</td>
<td>0.3363</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Previous computer training</td>
<td>286</td>
<td>1</td>
<td>0.83</td>
<td>0.38</td>
<td>-0.05</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>CSE</td>
<td>286</td>
<td>5</td>
<td>3.65</td>
<td>0.97</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CSE = computer self-efficacy; $n$ = sample size; $r$ = correlation co-efficient; $p$ = statistical significance of correlation; $p < 0.05$. 
Findings

- General self-efficacy
- Computer self-efficacy
- Self-esteem

Demographic characteristics: prior experience, subject areas, software used, previous computer training.
Greek teachers demonstrate a high level of general self-efficacy and to high computer self-efficacy.

Greek teachers have moderate computer experience: Software use, however, comprises mainly word-processing programs towards lesson preparation and only in a few cases are more complex applications used.

Greek teachers technological efforts are not supported by improvements in the schools’ material and technical infrastructure.
important steps towards training teachers must be taken, in order to render them competent at using computers as an educational tool in the technical infrastructure.

It is also worth emphasizing individual factors (self-concept, motivation, professional values, internal/external locus of control, cognitive learning style.), which compose the teacher's personality.

Teachers need to overcome their reticence towards using technology in the classrooms, in order to help students gain lifelong high-tech skills. Teachers' confidence in this area should be enhanced by a curriculum that strongly emphasizes the technological element and problem solving techniques by means of project-based activities.
כלי המחקר - חלקי לא מותאמים (בעיה של תוקף והימנעות),שאלות מיושנות, אין פירוט לגביני התודה השאלונים.

אין דיון נרחב סביב היחסים בין המושגים והם מוקלנים.

המלצות טריוויאליות בעקבות המחקר.

למרות שלא ניתן להצביע על קשר סיבתי יש המלצות הקשורות לCSE בין המתייחסות לקשר כזה. הקשר-binimet בין הש הלאומיות לבין השימוש במוחשבים הביתלא נבדק במחקרה.

אין המלצות להמשך דו-צורתי.


• **2010**- The correlation analysis between general sense of self-efficacy and computer self-efficacy revealed a moderate and a positive correlation between the two psychological constructs. (Topkaya, 2010)
אין עוד 시וויי lakh יות גורםمشפיי עלシヨלוב

teכגאולויה בידית (גו גא או הומרא בעל גהוה)

- פדגוגיה
- תכנית
- זמו lakh הוכות שיאוור
- זמו lakh תעלת שיאוור
- תמייה טכגאולויה
- הסקולים הלמידים
תודה על המיחה
נודע להם ילדינו