Survey of Preservice Teachers' Knowledge of Teaching and Technology

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Usage Terms: Researchers are free to use the TPACK survey, provided they contact Dr. Denise Schmidt (dschmidt@iastate.edu) with a description of their intended usage (research questions, population, etc.), and the site locations for their research. The goal is to maintain a database of how the survey is being used, and keep track of any translations of the survey that exist.

Version 1.1: (updated September 1, 2009). This survey was revised to reflect research results obtained from its administration during the 2008-2009 and 2009-2010 academic years. This document provides the latest version of the survey and reports the reliability scores for each TPACK domain. (This document will be updated as the survey is further developed).

The following papers and presentations highlight the development process of this survey:

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009-10). Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers. *Journal of Research on Technology in Education, 42*(2), 123-149.

Schmidt, D. A., Baran, E., Thompson A. D., Koehler, M. J., Mishra, P. & Shin, T. (2009). The Continuing Development, Validation and Implementation of a TPACK Assessment Instrument for Preservice Teachers. Paper submitted to the 2010 Annual Meeting of the American Educational Research Association. April 30-May 4, Denver, CO.

Schmidt, D., Baran, E., Thompson, A., Koehler, M.J., Shin, T, & Mishra, P. (2009, April). *Technological Pedagogical Content Knowledge (TPACK): The Development and Validation of an Assessment Instrument for Preservice Teachers.* Paper presented at the 2009 Annual Meeting of the American Educational Research Association. April 13-17,San Diego, CA.

Schmidt, D., Baran, E., Thompson, A., Koehler, M.J., Mishra, P., & Shin, T. (2009, March). *Examining preservice teachers' development of technological pedagogical content knowledge in an introductory instructional technology course.* Paper presented at the 2009 International Conference of the Society for the Information and Technology & Teacher Education. March 2-6, Charleston, SC.

Shin, T., Koehler, M.J., Mishra, P. Schmidt, D., Baran, E., & Thompson, A.,(2009, March). Changing technological pedagogical content knowledge (TPACK) through course experiences. Paper presented at the 2009 International Conference of the Society for the Information and Technology & Teacher Education. March 2-6, Charleston, SC.

How do I use the survey? The questions you want are most likely questions 1-46 starting under the header "TK (Technology Knowledge)". In the papers cited above, these categories were removed so that participants were not oriented to the constructs when answering the survey questions. The items were presented in order from 1 through 46, however. The other items are more particular to individual study and teacher education context to better understand results found on questions 1-46. You are free to use them, or modify them. However, they are not the core items used to measure the components of TPACK.

How do score the survey. Each item response is scored with a value of 1 assigned to strongly disagree, all the way to 5 for strongly agree. For each construct the participant's responses are averaged. For example, the 6 questions under TK (Technology Knowledge) are averaged to produce one TK (Technology Knowledge) Score.

Reliability of the Scores (from Schmidt et al, 2009).

TPACK Doman	Internal Consistency (alpha)
Technology Knowledge (TK)	.86
Content Knowledge (CK)	
Social Studies	.82
Mathematics	.83
Science	.78
Literacy	.83
Pedagogy Knowledge (PK)	.87
Pedagogical Content Knowledge (PCK)	.87
Technological Pedagogical Knowledge (TPK)	.93
Technological Content Knowledge (TCK)	.86
Technological Pedagogical Content Knowledge (TPACK)	.89

Thank you for taking time to complete this questionnaire. Please answer each question to the best of your knowledge. Your thoughtfulness and candid responses will be greatly appreciated. Your individual name or identification number will not at any time be associated with your responses. Your responses will be kept completely <u>confidential</u> and will not influence your course grade.

DEMOGRAPHIC INFORMATION

1. Your ISU e-mail address

2. Gender
   a. Female
   b. Male

3. Age range
   a. 18-22
   b. 23-26
   c. 27-32
   d. 32+

4. Major
   a. Early Childhood Education (ECE)
   b. Elementary Education (ELED)
   c. Other

5. Area of Specialization
   a. Art
   b. Early Childhood Education Unified with Special Education
   c. English and Language Arts
   d. Foreign Language
   e. Health
   f. History
   g. Instructional Strategist: Mild/Moderate (K8) Endorsement
   h. Mathematics
   i. Music
   j. Science-Basic
   k. Social Studies
   l. Speech/Theater
   m. Other

6. Year in College
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior

7. Are you completing an educational computing minor?
   a. Yes
   b. No

8. Are you currently enrolled or have you completed a practicum experience in a PreK-6 classroom?
   a. Yes
   b. No

9. What semester and year (e.g. Spring 2008) do you plan to take the following? If you are currently enrolled in or have already taken one of these literacy blocks please list semester and year completed

Literacy Block-I (C I 377, 448, 468A, 468C)	
Literacy Block-II (C I 378, 449, 468B, 468D)	
Student teaching	

Technology is a broad concept that can mean a lot of different things. For the purpose of this questionnaire, technology is referring to digital technology/technologies. That is, the digital tools we use such as computers, laptops, iPods, handhelds, interactive whiteboards, software programs, etc. Please answer all of the questions and if you are uncertain of or neutral about your response you may always select "Neither Agree or Disagree"

	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
TK (Technology Knowledge)					
1. I know how to solve my own technical problems.					
2. I can learn technology easily.					
3. I keep up with important new technologies.					
4. I frequently play around the technology.					
5. I know about a lot of different technologies.					
6. I have the technical skills I need to use technology.					
CK (Content Knowledge)					
Mathematics					
7. I have sufficient knowledge about mathematics.					
8. I can use a mathematical way of thinking.					
9. I have various ways and strategies of developing my understanding of mathematics.					
Social Studies					
10. I have sufficient knowledge about social studies.					
11. I can use a historical way of thinking.					
12. I have various ways and strategies of developing my understanding of social studies.					
Science					
13. I have sufficient knowledge about science.					
14. I can use a scientific way of thinking.					
15. I have various ways and strategies of developing my understanding of science.					
Literacy					
16. I have sufficient knowledge about literacy.					
17. I can use a literary way of thinking.					
18. I have various ways and strategies of developing my understanding of literacy.					

PK (Pedagogical Knowledge)					
19. I know how to assess student performance in a classroom.					
20. I can adapt my teaching based-upon what students currently understand or do not understand.					
21. I can adapt my teaching style to different learners.					
22. I can assess student learning in multiple ways.					
23. I can use a wide range of teaching approaches in a classroom setting.					
24. I am familiar with common student understandings and misconceptions.					
25. I know how to organize and maintain classroom management.					

PCK (Pedagogical Content Knowledge)					
26. I can select effective teaching approaches to guide student thinking and learning in mathematics.					
27. I can select effective teaching approaches to guide student thinking and learning in literacy.					
28. I can select effective teaching approaches to guide student thinking and learning in science.					
29. I can select effective teaching approaches to guide student thinking and learning in social studies.					
TCK (Technological Content Knowledge)					
30. I know about technologies that I can use for understanding and doing mathematics.					
31. I know about technologies that I can use for understanding and doing literacy.					
32. I know about technologies that I can use for understanding and doing science.					
33. I know about technologies that I can use for understanding and doing social studies.					

TPK (Technological Pedagogical Knowledge)					
34. I can choose technologies that enhance the teaching approaches for a lesson.					
35. I can choose technologies that enhance students' learning for a lesson.					
36. My teacher education program has caused me to think more deeply about how technology could influence the teaching approaches I use in my classroom.					
37. I am thinking critically about how to use technology in my classroom.					
38. I can adapt the use of the technologies that I am learning about to different teaching activities.					
39. I can select technologies to use in my classroom that enhance what I teach, how I teach and what students learn.					
40. I can use strategies that combine content, technologies and teaching approaches that I learned about in my coursework in my classroom.					
41. I can provide leadership in helping others to coordinate the use of content, technologies and teaching approaches at my school and/or district.					
42. I can choose technologies that enhance the content for a lesson.					

TPACK (Technology Pedagogy and Content Knowledge)					
43. I can teach lessons that appropriately combine mathematics, technologies and teaching approaches.					
44. I can teach lessons that appropriately combine literacy, technologies and teaching approaches.					
45. I can teach lessons that appropriately combine science, technologies and teaching approaches.					
46. I can teach lessons that appropriately combine social studies, technologies and teaching approaches.					

Models of TPACK (Faculty, PreK-6 teachers)					
47. My mathematics education professors appropriately model combining content, technologies and teaching approaches in their teaching.					
48. My literacy education professors appropriately model combining content, technologies and teaching approaches in their teaching.					
49. My science education professors appropriately model combining content, technologies and teaching approaches in their teaching.					
50. My social studies education professors appropriately model combining content, technologies and teaching approaches in their teaching.					
51. My instructional technology professors appropriately model combining content, technologies and teaching approaches in their teaching.					
52. My educational foundation professors appropriately model combining content, technologies and teaching approaches in their teaching.					
53. My professors outside of education appropriately model combining content, technologies and teaching approaches in their teaching.					
54. My PreK-6 cooperating teachers appropriately model combining content, technologies and teaching approaches in their teaching.					

	25% or less	26% - 50%	51% - 75%	76%-100%
Models of TPCK				
55. In general, approximately what percentage of your teacher education professors have provided an effective model of combining content, technologies and teaching approaches in their teaching?				
56. In general, approximately what percentage of your professors outside of teacher education have provided an effective model of combining content, technologies and teaching approaches in their teaching?				
57. In general, approximately what percentage of the PreK-6 cooperating teachers have provided an effective model of combining content, technologies and teaching approaches in their teaching?				

Please complete this section by writing your responses in the boxes.

73. Describe a specific episode where an ISU professor or instructor effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content was being taught, what technology was used, and what teaching approach(es) was implemented.

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74. Describe a specific episode where one of your PreK-6 cooperating teachers effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content was being taught, what technology was used, and what teaching approach(es) was implemented. If you have not observed a teacher modeling this, please indicate that you have not.

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75. Describe a specific episode where you effectively demonstrated or modeled combining content, technologies and teaching approaches in a classroom lesson. Please include in your description what content you taught, what technology you used, and what teaching approach(es) you implemented. If you have not had the opportunity to teach a lesson, please indicate that you have not.

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