

RUNNING HEAD: TEACHER PERCEPTIONS OF ONLINE LEARNING TOOLS

Teacher Perceptions as an Integral Component in the Development of Online Learning Tools

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ABSTRACT

The Kentucky Department of Education (KDE) and the University of Kentucky (UK) formed a partnership to develop formative online learning tools. Teacher perceptions of online learning tools as well opinions on the implementation process were seen as an integral part of the development process. This study examines the perceptions of a small judgment sample of Kentucky high school teachers regarding the newly developed online system, the strengths and weaknesses of the implementation process and the stability of these perceptions overtime. Results indicated teachers were willing to implement online learning tools if specific requests were met. Teachers provided numerous suggestions for system improvements as well as for the implementation process. This study provides a foundation for information pertaining to the process of integrating online learning systems within existing curriculum.

Teacher Perceptions as an Integral Component in the Development of Online Learning Tools

The integration of computers in secondary-school systems worldwide has been suggested to be the future of subjects such as mathematics (Ruthven, Hennessey, & Brindley, 2004). The Kentucky Department of Education (KDE) and the University of Kentucky (UK) formed a partnership to develop formative online learning tools. The online homework system was constructed as a prototype to be extended to online state assessment testing, while providing teachers with a supplemental learning tool for their classrooms. Given the potential impacts on classrooms, teacher perceptions as related to the online system and the feasibility of implementation were collected as an integral component of the project. In January 2005, mathematics teachers at two Kentucky high schools began implementing a web-based homework system to parallel, or complement, their mathematics instruction, while simultaneously supporting preparation for the state assessment test. Since integration of new materials or tools into a classroom setting often requires a change in teaching methods (Hazzan, 2002), the perceptions of secondary mathematics teachers cannot be overlooked and instead, should be given great consideration to make the process and product successful (Ambrose, Clement, Philipp, & Chauvot, 2004).

Perspectives from the Literature

The creation and implementation of online formative learning system, a web-based homework arrangement, was geared toward streamlining the standards process, by allowing teachers to cover mandated curriculum topics and utilize the homework sets to monitor student performance on the related standards. Ruthven, Hennessey and Brindley (2004) analyzed representations of successful use of computer-based tools and resources in mathematics using six secondary schools in England. Immediate barriers identified by teachers included, “restricted and

inconvenient access to machines; unreliability of equipment and lack of technical support; absence of curriculum-appropriate tools and resources; shortness of lesson duration and pressure of curriculum coverage” (Ruthven et al., 2004, p. 259).

Determining the attitudes of prospective teachers enrolled in a course focused on “general computational environments (such as the Web), including possible implementations in mathematics classes, and in mathematical software tools”, provides insight into more perceptions needing attention in integrating online learning tools with existing curriculum (Hazzan, 2002, p. 214). Hazzan outlined various concerns about using computers in the classroom including: (a) “lack of interaction between teacher and pupils and of human response” (p. 216) and; (b) change in teacher’s role to “navigate, guide, and connect pupils’ knowledge with the official mathematical knowledge”. Within the framework of present study, teachers did not express opposition to the integration of technology, specifically computers in this case, into their classrooms; however, teachers clearly expressed multiple concerns that should be addressed prior to a complete and successful implementation of a web-based homework system.

Purpose

This study examines the perceptions of a small judgment sample of Kentucky high school teachers regarding the newly developed online system, the strengths and weakness of the implementation process and the stability of these perceptions over time. Teachers’ perceptions of the system were expected to evidence mainly positive changes concerning system use after implementation. Teacher attitudes of using online learning tools were expected to be associated with teachers’ perceptions of the implementation process. The goal was to provide a foundation for information pertaining to the process of integrating online learning systems within existing curriculum, specifically as it related to UK and KDE goals.

Method

Data Source

Math teacher participants in this study were chosen from the sampling frame of all public high schools in Kentucky within close proximity (60 miles) to the University of Kentucky. KDE determined a small judgment sample argued to be representative of those within proximity constraints, namely West Jessamine High School and Woodford County High School.

The research team, along with KDE followed necessary provisions to ensure the rights of all participants. Participation in this research project was an indication of consent for the information to be used for research purposes only. Nine mathematics teachers employed at the aforementioned participating high schools were asked to complete the online survey on a voluntary basis, meaning no consequences existed if a teacher chose not to participate in the study. All participants were assured their responses would remain confidential. This initial research serves as a field study for future implementations of the online learning system into other Kentucky high schools and schools across the country.

Instrumentation

The pilot survey was designed to determine teachers' perceptions concerning technology in general, the use of classroom technology, and the implementation process of online learning tools. Baseline and post-implementation surveys were administered via a self-administered, web-based format. The web-based format for the questionnaire was chosen for teacher convenience, as teachers could complete the survey within the newly developed online system. The baseline and post-implementation surveys contained Likert-type questions accompanied by open-ended items to allow participants adequate response frames and increase validity of the instrumentation. Likert-type questions utilized a four-point ordinal scale with an option for teachers to answer

“No opinion”. Researchers considered items with a response of “No opinion” or missing responses for further item review. The purpose in using Likert-type items accompanied by open-ended questions was to decrease the Likert-type scale’s threats to validity and open-ended responses threats to reliability.

Prior to administration, both surveys were reviewed by a board of four reviewers knowledgeable in mathematics education and survey design at the University of Kentucky. These survey instruments can be found in the appendix of this paper. Demographic information was collected only during the initial collection, as instruments were linked to one another, and it was reasonable to assume over the time period that demographic information was stable. Questions reflective of the implementation and collaborative processes were asked only on the final collection, as these questions provided insight into activities no relevant at baseline.

Data Collection

The teachers were asked to complete the online survey within one week after attending a basic online system-training workshop in December 2004. Between surveys, two focus group interviews were administered on-site at each school to gather supportive information for developers to make adjustments to the system and/or the implementation process. The focus groups were also used to gain more accurate teacher perceptions concerning the online initiative. During the interviews, one member of the research team took extensive field as another member conducted the interview. The focus group interview responses were compiled and categorized into belief categories by researchers. The second completion of the self-administered web-based survey took place within one week following the end of the school year in May 2005. The final survey asked teachers to explain to what extent they used the online learning tools in their

classroom, their willingness to participate in similar projects again and likelihood of encouraging peers to participate in such activities.

All survey responses have been catalogued by random identification numbers and stored in a file by the graduate assistant. The pre/post responses were stored in Minitab according to the random identification numbers to ensure confidentiality of participants. Copies of the anonymous open-ended survey responses were then distributed to response coders for content analysis.

Rubric Development

The open-ended responses were used by the review board to develop a rubric to code the responses into a quantitative summary. Three reviewers independently sorted the anonymous open-ended responses into the belief categories and developed a detailed written description for each category. Using the constructed rubric, the other reviewers coded the same responses into categories. The two groups of coded responses will then be compared with the goal of at least 80% agreement to determine inter-rater reliability. Until the goal was reached, the steps are repeated and included: rubric descriptions being clarified; reviewers discussing each placement of response to belief category; and responses coded until the developed rubric produced the goal.

Analysis

The pre/post-coded responses stored in Minitab were analyzed on a common metric to determine whether changes in beliefs occurred throughout implementation. The number of each pre/post perception is presented in relative frequency tables to demonstrate the evidence of changes in perception. Content analysis was used for open-ended items according to the rubric developed. Due to the small sample size, it does not make sense to report percentages as the number may distort the measure of change occurring. To avoid distortion of belief change, missing responses along with “No opinion” responses are represented in the relative frequency

table for each perception. Researchers reviewed any survey items producing missing responses and “No opinion” responses for possible editing or item deletion.

Correlation coefficients can be used to gain approximate estimates of the dimensionality of the survey, showing which items appear to be measuring similar concepts. The data can also be evaluated to determine whether a positive correlation exists between the frequency of positive belief changes toward the system and the extent to which the teachers use the system in their classrooms.

Results

Eight out of nine teachers took the baseline survey while seven out of nine teachers took the post-implementation survey. Six teachers completed both surveys. Teachers involved in this project had teaching experience ranging from one to twenty-eight years. All teachers had been employed anywhere from one to twenty-four years as regular full-time 9-12 mathematics teachers at their current school. Each had acquired at least their Master's degree in mathematics education. Teachers had a wide range of technological training, with the majority of training involving the job training and a variety of college coursework.

Teachers' comfort levels with using technologies were one dimension of the survey instrument. The data presented in Tables 1.1 and 1.2 illustrate that teachers are more comfortable with technology use across the board with the exception of chat rooms and instant messaging. The data reflect teachers' views slightly shifted to higher student comfort levels with email, email attachments, chat room, and internet usage post-implementation. The focus group interview revealed teacher consensus that students have a high comfort level with computers in general, especially instant messaging.

Considering results from survey instruments, teachers did not show a noticeable shift in comfort level with integrating online learning tools throughout implementation. During the first focus group interview, teachers were willing to implement online learning tools in their classrooms if specific requests were met. However, by the second focus group, teachers indicated that they would not choose to use online learning tools in their classroom, at least not as presented within this study. Teachers felt online learning tools could be used for supplemental material, but not used for core. Finally, teachers believed online learning tools could be used to acquire more summative data rather than formative.

Table 1.1: Teacher Comfort Levels with Technology

	Basic Op		Emailing		Attachments		Chat Rooms		Internet		Word Processing	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
0=No Answer												
1=Not at all							2	2				
2=Slightly					1				2	1	1	2
3=Moderately	2	2	2	1	1	1	3	4	1	2	3	2
4=Very	4	4	4	5	4	5	1		3	3	2	2

Table 1.2: Teacher Perceptions of Student Comfort Levels with Technology

	Basic Op		Emailing		Attachments		Chat Rooms		Internet		Word Processing	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
0=No Answer							1					
1=Not at all	1	1	1		2	1	1	1	1	1	1	1
2=Slightly			2	3	1	3	1		2	1	3	3
3=Moderately	1	2	3	2	3	2	1	2	2	3	1	1
4=Very	4	3		1			2	3	1	1	1	1

Table 1.3: Teacher Comfort Level with Integrating New Classroom Technology

	Pre	Post
Uncomfortable		
Somewhat UnComfortable	2	2
Somewhat Comfortable	1	2
Comfortable	3	2

Data were also collected on teacher perceptions of the online learning system along with teacher suggestions for system improvement. Tables 2.1, 2.2, and 2.3 are frequency tables displaying for each question all six pre/post response comparisons, eight baseline survey responses, and seven post-implementation survey responses. Note that teachers endorsed the

majority of the statements concerning the online learning tools. However, the majority of teachers believed online learning tools would change their instructional strategies. By the post-implementation survey, teachers decided online tools would not change their classroom strategies. Teachers, likewise, believed online learning tools would increase their preparation time, but they decided the tools would not increase their preparation time by post-implementation. Teachers decided after implementation that grasping online learning tools would be more difficult for students than they initially thought.

Table 2.1: Teacher Perceptions of Online Learning Tools

		0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
14/6a	Pre			1	4	1	
	Post			2	3	1	
14/6b	Pre			2	3	1	
	Post			2	3	1	
14/6c	Pre			0	3	2	1
	Post			1	3	1	1
14/6d	Pre			3	2	1	
	Post			2	4	0	
14/6e	Pre		0	4	1		1
	Post		1	2	3		0
14/6f	Pre		1	2	3		
	Post		0	4	2		
14/6g	Pre			2	4		
	Post			2	4		
14/6h	Pre				2	4	0
	Post				3	2	1
14/6i	Pre			3	3	0	
	Post			0	5	1	
14/6j	Pre			3	1	1	1
	Post			2	2	1	1
14/6k	Pre				4	2	
	Post				4	2	
14/6l	Pre			1	3	2	
	Post			1	5	0	
15/6m	Pre	1		1	2		2
	Post	0		3	2		1
16/6n	Pre			4	1		1
	Post			5	0		1
17/6o	Pre		1	1	2	2	
	Post		0	4	2	0	

Table 2.2: Teacher Perceptions of Online Learning Tools
Pre and Post-Implementation Separate Summaries
Baseline Survey

	0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
14a			1	6	1	
14b			2	5	1	
14c				5	2	1
14d			5	2	1	
14e			4	3		1
14f		1	3	4		
14g			3	5		
14h				4	4	
14i			5	3		
14j			4	2	1	1
14k				6	2	
14l	1		1	4	2	
15			1	4		2
16			5	2		1
17		1	2	3	2	

Table 2.3: Teacher Perceptions of Online Learning Tools
Pre and Post-Implementation Separate Summaries
Post-Implementation

	0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
6a			2	3	1	1
6b			2	3	1	1
6c			1	3	1	2
6d			2	4		1
6e		1	2	3		1
6f			4	2		1
6g			2	4		1
6h				3	2	2
6i				5	1	1
6j			2	2	1	2
6k				4	2	1
6l			1	5		1
6m			3	2		2
6n			5			2
6o			4	2		1

The final component of data collection was teacher perceptions of the implementation and collaborative process. Unfortunately, due to webpage coding errors, only approximately half of the responses from the post-implementation survey were recorded. Therefore, comparisons in Table 3.1 can only represent those responses collected for both surveys. Tables 3.2 and 3.3 display the frequency tables for the baseline and post-implementation responses, respectively. Results indicate the majority of teachers feel at least slightly comfortable with implementing

online learning tools; however, surveys responses indicate teachers do not welcome the technological change. Initially, teachers felt integration would not meet teacher resistance, but teachers did not endorse this statement for the post-implementation survey.

Table 3.1: Teacher Perceptions of Implementation Process and Collaboration

		0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
9a. OL	Pre		2	4			
	Post			4	1	1	
9b. Inc	Pre		1	4	1		
	Post		2	3	1		
9c. Tea	Pre		2	3		1	
	Post		2	3		1	
9d. Sta	Pre		2	3		1	
	Post		2	2	1	1	
9e. Adr	Pre		1	2	2	1	
	Post			4	1		
9f learr	Pre			3	2	1	
	Post		3	1	1	1	
19g/9h	Pre			1	3	2	2
	Post			4	1	1	1

Table 3.2: Teacher Perceptions of Implementation Process and Collaboration
Baseline Separate Summary

	0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
19a			3	5		
19b			2	5	1	
19c			2	5		1
19d			2	5		1
19e			1	2	3	2
19f			1	4	2	1
19g			1	3	2	2
19h			2	2	2	2
19i				6	1	1
19j				4	4	
19k			1	5	2	
19l		1	1	3		3
19m			2	3		3
19n			3	5		
19o	1		1	5		1
19p				5	2	1
19q				5	2	1
19r		1	2	3		2
19s			3	2	3	

Table 3.3: Teacher Perceptions of Implementation Process and Collaboration
Post-Implementation Separate Summary

	0=No Ans	1=S Dis	2=Dis	3=Ag	4=S Ag	5=No Opin
9a			1	4	1	1
9b			2	3	1	1
9c			2	4		1
9d			2	2	1	2
9e			1	3	2	1
9f				4	1	2
9g				5	1	1
9h			4	1	1	1

Perhaps this lack of endorsement can be attributed to the teachers believing they were an integral part of the tool development process in the beginning, but this belief was lost through the implementation process. Teachers made many suggestions for improvement to the implementation process in the first focus groups interview. The suggestions were common between both groups and will be listed in the discussion below.

Discussion

Overall, the results indicated teachers, after implementation, were no longer willing to use online learning tools in their classrooms, at least in the format introduced during this study, for a variety of reasons. In the focus groups, it was discovered that teachers were willing to integrate online learning tools into their classroom if certain requests were met concerning the system itself and its implementation process. A theme common among teachers in this study was the need for formative online learning tools tailored to the needs of classroom teachers. Teachers suggested the most useful system would be one with the following features: (1) A desire existed for teachers to be able to use the system similar to an item bank; (2) Teachers wanted to search for items by content standards; (3) The teacher-chosen problems are then downloaded into their own homework set. A great deal was also learned about the most accepted way to implement online learning tools into classrooms. Teacher suggestions for the implementation process has been compiled into the following process: (1) The first request was for a demonstration of online learning tools being used in classroom format with teachers only; (2) Experts would then be expected to attend the classroom a minimum of two times to help teachers and students get comfortable with system use while technical support is handy; (3) A student aid needed to be in place to key student answers into the machine; (4) Finally, teachers requested training to create their own worksheets and homework sets.

Limitations

Close proximity to the University of Kentucky affected the choice for schools involved in this initial study. The lack of random sampling was a threat to the external validity of this study. Due to the small number of teachers in this sample, any initial data does not seem as useful; however, the study will prove to be more useful as implementation continues into secondary high schools across Kentucky and possibly other states. The purpose in using Likert-type items accompanied by open-ended questions was to decrease the Likert-type scale's threats to validity and open-ended responses threats to reliability. The rubric development for content analysis aimed to address this question of reliability with the open-ended questions.

Educational Importance

The lack of current research indicated limited use of online learning tools in secondary mathematics classrooms in the United States. Computer integration is, however, inevitable into mathematics classrooms across the state of Kentucky as the state moves toward online state testing. This study provided KDE with important information regarding teacher perceptions of the implementation and collaborative process. The online homework system developers also used this information to improve the system according to teachers' suggestions. Since teachers' beliefs affect mathematics instruction, this study provided a method for mathematics educators to determine teachers' perceptions about integration as it occurs all over this United States.

References

- Hazzan, O. (2002). Prospective high school mathematics teachers' attitudes toward integrating computers in their future teaching. *Journal of Research on Technology in Education*, 35(2), 213-225.
- Lewin, T. (1999, September 6). Schools Taking Tougher Stance with Standards. *New York Times*, p. A1.
- Norton, S., McRobbie, C. J., & Cooper, T. J. (2000). Exploring secondary mathematics teachers' reasons for not using computers in their teaching: Five case studies [Electronic version]. *Journal of Research on Computing Education*, 33(1), 87-109.
- Ruthven, K., Hennessey, S., & Brindley, S. (2004). Teacher representations of the successful use of computer-based tools and resources in secondary school English, mathematics, and science [Electronic version]. *Teaching and Teacher Education*, 20, 259-275.

Appendix: Survey Instruments

KDE Formative Assessment Baseline Study

Baseline Survey Regarding On-line Learning System

It is our goal to be your partner in implementing the on-line learning tools. To ensure success of this project, it is necessary to collect baseline information from your perspective. Please take a few minutes and complete the following questionnaire. We thank you for your participation. Please feel free to contact Dr Kelly Bradley at kbrad2@uky.edu throughout the process with questions or suggestions.

Demographics

1. Please select your school schedule type.

- Traditional
- Traditional Block Schedule
- Modified Block Schedule
- Other

If you checked "Other" please give a brief description.

Other:

2. Please select the number of years you have taught, including the current year.

3. Please select the number of years you have taught at your current school.

4. Please select the choice that best describes your current position.

- Regular, Full Time
- Regular, Part Time
- Temporary, Full Time
- Temporary, Part Time
- Substitute, Short Term
- Substitute, Long Term
- Other

If you checked "Other" please give a brief description.


Other:

5. Please indicate your gender.

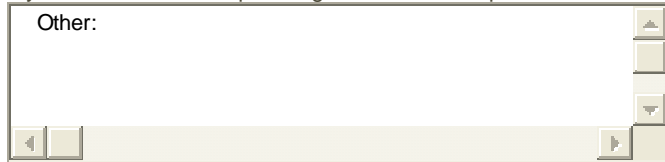
6. Please check the grade level(s) at which you are teaching in the current school year.

fifth grade sixth grade seventh grade eighth grade
 ninth grade tenth grade eleventh grade twelfth grade

7. Please select the choice that best describes your highest academic degree.

High School or GED 

If you selected "Other" please give a brief description.

Other: 

8. Please list up to four areas in which you hold teaching certification or endorsement.

a.
b.
c.
d.

Technology

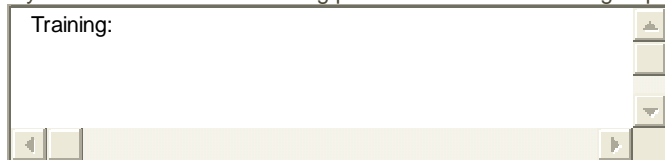
9. Please select your comfort level in integrating new classroom technology from the choices below:

Uncomfortable
 Somewhat Uncomfortable
 Somewhat Comfortable
 Comfortable

10. Please check all of the choices that are part of your technological training.

On the job training (learning by doing)
 In-service training session(s)
 College course
 No formal or informal training

If you checked inservice training please describe the training or provide session number(s).

Training: 

If you checked College course please list describe the course(s) including institution(s) and (if possible) the course number(s) and title(s).

Courses:

11. To what extent are you comfortable doing the following?

- a. Basic computer operation – turning it on, running software, using the CD-ROM, etc.
- b. Using email to communicate and share documents with others
- c. Using email attachments to communicate and share documents with others
- d. Using “instant messaging” or “chat rooms” to share ideas with others
- e. Using the Internet to find resources to enhance teaching
- f. Using word processing, spreadsheets, or other software to organize, analyze and display data

12. Consider your students, to what extent are your students comfortable doing the following:

- a. Basic computer operation – turning it on, running software, using the CD-ROM, etc.
- b. Using email to communicate and share documents with others
- c. Using email attachments to communicate and share documents with others
- d. Using “instant messaging” or “chat rooms” to share ideas with others
- e. Using the Internet to find resources to enhance teaching
- f. Using word processing, spreadsheets, or other software to organize, analyze and display data

13. Briefly describe your experience with classroom technology and on-line learning tools (be sure to include current

Experience with classroom:

student tasks completed using computers).

Perceptions of on-line learning tools

14. Please rate your level of agreement with the following statements in regards to the use of on-line learning tools.

- a. On-line learning tools will increase the effectiveness of my classroom instruction.
- b. On-line learning tools will increase the efficiency of identifying at-risk students.
- c. On-line learning tools will have a positive impact on high achieving students.

- d. On-line learning tools will not change the instructional strategies of my classroom.
 - e. Students will be comfortable using the on-line learning tools.
 - f. On-line learning tools will increase my instructional preparation time.
 - g. On-line learning tools will have a positive impact on lower achieving students.
 - h. On-line learning tools will increase student technology literacy.
 - i. It will be difficult for many students to grasp the new on-line learning system.
 - j. On-line learning systems are not as effective as traditional classroom instruction.
 - k. Students will need training to be able to use the on-line learning tools successfully.
 - l. On-line learning tools will be successful in providing support/practice for newly learned skills.
15. On-line learning tools will be useful for teaching new skills.
16. Teachers welcome technological change to increase student achievement.
17. I feel comfortable about the implementation of the on-line learning system.
18. Please list the three best features of the on-line learning tools.
- a.
 - b.
 - c.

Please list the three worst features of the on-line learning tools.

- d.
- e.
- f.

Perceptions of Implementation Process and Collaboration

19. Please rate your level of agreement with the following statements in regards to the implementation of the on-line learning tools and the collaboration process.
- a. The integration of on-line learning tools will meet teacher resistance.
 - b. The integration of new on-line learning tools will increase my instructional preparation time.
 - c. Teachers promote activities necessary to integrate technological goals to existing curriculum.
 - d. Staff is accepting of the preparation and training required to integrate on-line learning tools.

e. Administration is accepting of the preparation and training required to integrate on-line learning tools.

f. The learning process will be met with resistance.

g. I am an integral part of the development of the on-line learning system.

h. The support provided will be sufficient for successful integration of on-line learning tools.

i. The existing plan should add more training to successfully integrate on-line learning tools.

j. On-going professional support is a necessary part of the integration process.

k. The time and effort invested in on-line learning tools will result in increased student achievement.

l. The on-line learning tools initiative will provide students with new computer equipment.

m. The on-line learning tools initiative will provide teachers with new computer equipment.

n. It will be difficult to provide on-going professional support for the successful implementation of the on-line learning system.

o. If I have difficulties with the on-line learning system, I know whom to contact to receive support and report issues.

p. If a technical issue arises with the on-line learning system, I will report the issue.

q. If I recognize a weakness of the system, I will report it.

r. Teachers are excited about the opportunity to be part of the on-line learning tools implementation.

s. Community support must be present prior to adopting an on-line learning system.

20. Please list the challenges you think that the on-line initiative will afford.

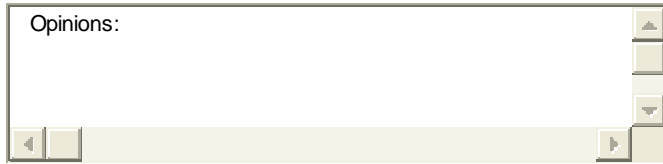
Challenges:

21. Please list the rewards you think that the on-line initiative will afford.

Rewards:

Thank you for your time. We appreciate your efforts in this collaborative effort to make the on-line initiative a success. In the space provided below, please express your opinions on any issues related to these efforts.

Opinions:



Submit

Post-Implementation Survey Regarding KDE Formative Assessment Study

Summative Survey Regarding On-line Learning System

It is the goal of the Kentucky Department of Education (KDE) and the University of Kentucky to be your partner in implementing the on-line learning tools. To ensure success of this project, it is necessary to collect baseline information from your perspective. The responses will be reported in summarized form to ensure confidentiality of your views. Please take a few minutes and complete the following questionnaire. We thank you for your participation. Please feel free to contact Jessica Cunningham at jvirgin@ms.uky.edu throughout the process with questions or suggestions.

Technology

1. Consider your experiences with on-line tools and other classroom technology. Please select your comfort level in integrating new classroom technology from the choices below:

- Uncomfortable
- Somewhat Uncomfortable
- Somewhat Comfortable
- Comfortable

2. Please check all of the choices that have been a part of your technological training since the beginning of this project.

- On the job training (learning by doing)
- In-service training session(s)
- College course
- No formal or informal training

If you checked inservice training please describe the training or provide session number(s).

If you checked College course please list describe the course(s) including institution(s) and (if possible) the course number(s) and title(s).

3. Consider your experiences with on-line tools and classroom technology. How comfortable are you with each of the following:

- a. Basic computer operation – turning it on, running software, using the CD-ROM, etc.
- b. Using email to communicate and share documents with others
- c. Using email attachments to communicate and share documents with others
- d. Using “instant messaging” or “chat rooms” to share ideas with others
- e. Using the Internet to find resources to enhance teaching
- f. Using word processing, spreadsheets, or other software to organize, analyze and display data

4. Consider your students’ experiences with on-line tools and classroom technology. How comfortable are your students with each of the following:

- a. Basic computer operation – turning it on, running software, using the CD-ROM, etc.
- b. Using email to communicate and share documents with others
- c. Using email attachments to communicate and share documents with others
- d. Using “instant messaging” or “chat rooms” to share ideas with others
- e. Using the Internet to find resources to enhance learning
- f. Using word processing, spreadsheets, or other software to organize, analyze and display data

5. Briefly describe your experience with classroom technology and on-line learning tools (be sure to include current

student tasks completed using computers).

Perceptions of On-line Learning Tools

6. Please rate your level of agreement with the following statements in regards to the use of on-line learning tools.

- a. On-line learning tools increased the effectiveness of my classroom instruction.
- b. On-line learning tools increased the efficiency of identifying at-risk students.
- c. On-line learning tools had a positive impact on high achieving students.
- d. On-line learning tools did not change the instructional strategies of my classroom.
- e. Students were comfortable using the on-line learning tools.
- f. On-line learning tools increased my instructional preparation time.
- g. On-line learning tools had a positive impact on lower achieving students.

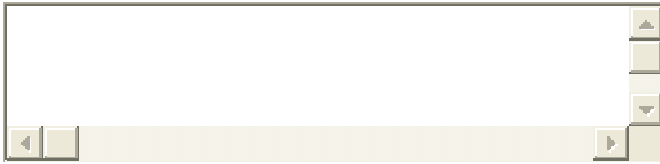
- h. On-line learning tools increased student technology literacy.
 - i. It was difficult for many students to grasp the new on-line learning system.
 - j. On-line learning systems were not as effective as traditional classroom instruction.
 - k. Students needed training to be able to use the on-line learning tools successfully.
 - l. On-line learning tools were successful in providing support/practice for newly learned skills.
 - m. On-line learning tools were useful for teaching new skills.
 - n. Teachers welcomed technological change to increase student achievement.
 - o. I felt comfortable about the implementation of the on-line learning system.
7. Please list the three best features of the on-line learning tools.
- a.
 - b.
 - c.
8. Please list the three worst features of the on-line learning tools.
- a.
 - b.
 - c.

Perceptions of Implementation Process and Collaboration

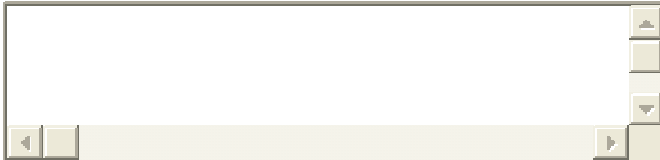
9. Please rate your level of agreement with the following statements in regards to the implementation of the on-line learning tools and the collaborative process.
- a. The integration of on-line learning tools met teacher resistance.
 - b. The integration of new on-line learning tools increased my instructional preparation time.
 - c. Teachers promoted activities necessary to integrate technological goals with existing curriculum.
 - d. Staff was accepting of the preparation and training required to integrate on-line learning tools.
 - e. Administration was accepting of the preparation and training required to integrate on-line learning tools.
 - f. The learning process involved with integration of on-line learning tools met teacher resistance.
 - g. The learning process involved with integration of on-line learning tools met student resistance.
 - h. I was an integral part of the development of the on-line learning system.
 - i. The support provided was sufficient for successful integration of on-line learning tools.

- j. The existing plan should add more training to successfully integrate on-line learning tools.
 - k. On-going professional support was a necessary part of the integration process.
 - l. Ongoing technical support was a necessary part of the integration process.
 - m. The time and effort invested in on-line learning tools resulted in increased student achievement.
 - n. The on-line learning tools initiative provided students with new computer equipment.
 - o. The on-line learning tools initiative provided teachers with new computer equipment.
 - p. It was difficult to provide on-going professional support for the successful implementation of the on-line learning system.
 - q. If I had difficulties with the on-line learning system, I knew whom to contact to receive support and report issues.
 - r. If a technical issue arose with the on-line learning system, I reported the issue.
 - s. If I recognized a weakness of the system, I reported the issue.
 - t. Teachers were excited about the opportunity to be part of the on-line learning tools implementation.
 - u. Community support must be present prior to adopting an on-line learning system.
 - v. I am willing to participate again in this project's on-line initiatives and collaborative processes.
 - w. I am willing to participate in other projects involving on-line initiatives and collaborative processes.
 - x. I will recommend participation in this project's on-line initiatives and collaborative processes to other teachers.
 - y. I will recommend participation in other projects involving on-line initiatives and collaborative processes to other teachers.
10. Please list the three best features you perceived of the implementation process.
- a.
 - b.
 - c.
11. Please list the three worst features you perceived of the implementation process.
- a.
 - b.
 - c.

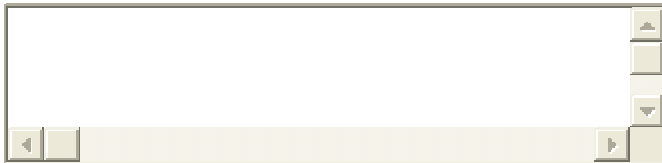
12. Please list the challenges you think that the on-line initiative affords.

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13. Please list the rewards you think that the on-line initiative affords.

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Thank you for your time. We appreciate your efforts in this collaboration to make the on-line initiative a success. In the space provided below, please express your opinions on any issues related to these efforts.

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