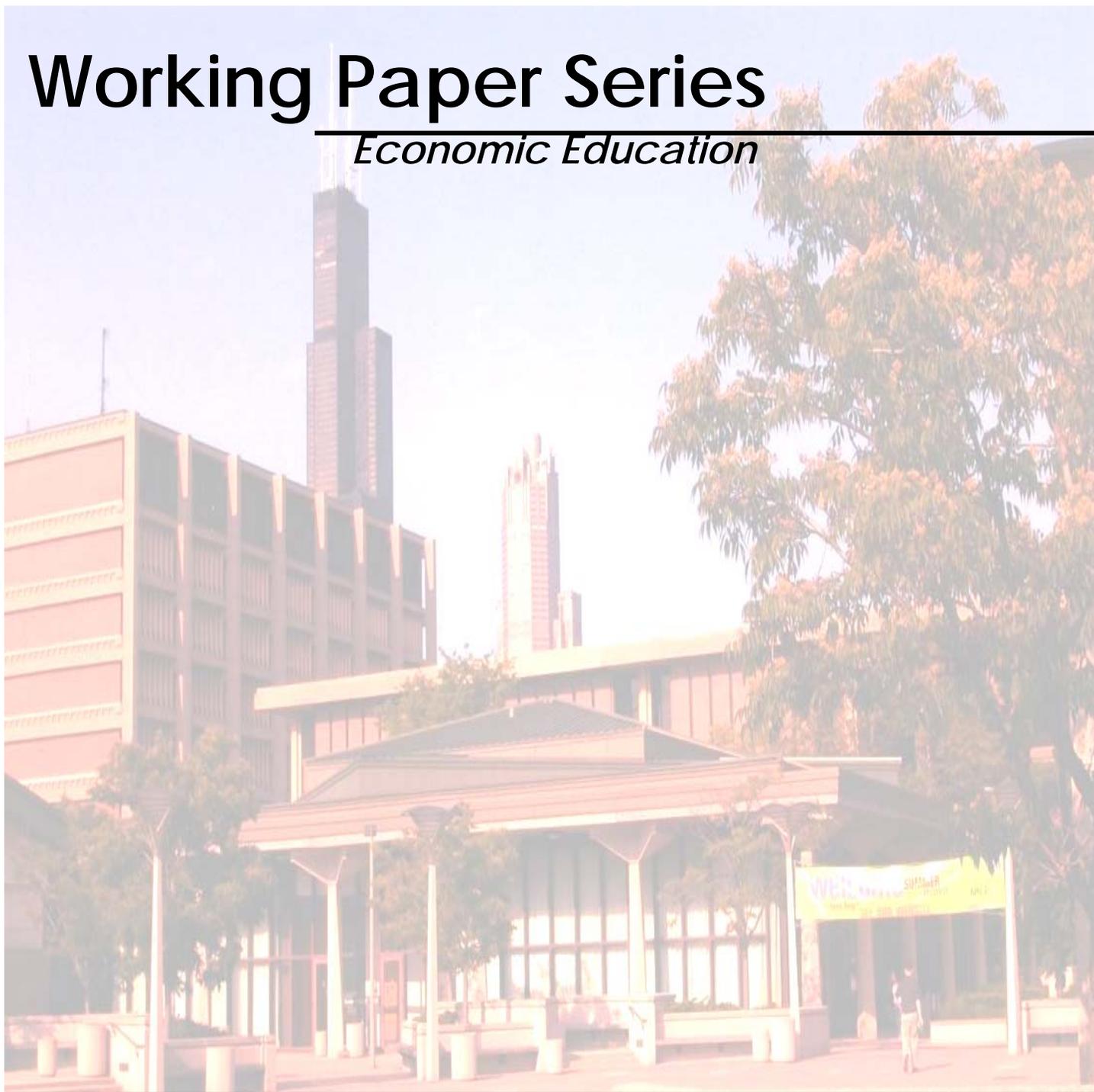


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Surveying the Importance of Economics and Financial Literacy Descriptors

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Surveying the Importance of Economics and Financial Literacy Descriptors

1. SETTING THE STAGE

Every day teachers in every day classrooms are faced with a myriad of standards across the subject areas, which “provide a foundation for defining the knowledge and skills teachers need in order to provide instruction for students.”

(http://www.isbe.state.il.us/ILS/pdf/standards_qa.pdf) A typical fourth grade teacher in Illinois is responsible for implementing 602 performance descriptors across the content areas, which does not include those in economics and financial literacy. Additionally, teachers are expected to utilize best practice instructional strategies. Taken together, this means the classroom teacher is expected to enhance student dispositions toward the content in particular and school in general.

Currently, there is the struggle to make the many Illinois economics and financial literacy standards intelligible via pilot courses, each with their own particular brand of content. If that is not enough, there are the revised Illinois standards in English, language arts, and mathematics adopted in June 2010. What you end up with is a dynamic and potentially chaotic curriculum and instructional environment. So that even the bionic teacher, who masters the diverse content, is challenged to prioritize it and identify what professional development is needed to ensure its delivery.

The University of Illinois at Chicago Center for Economic Education and its energetic partner, the Chicago Public Schools (CPS) began the conversation of how to make sense of the content p standards in economics and financial literacy and how to prepare teachers for their effective delivery in K-12 classrooms. This is no small task, given the fact that CPS has 395 K-8 elementary and 122 high schools. The district serves a diverse population of 409,270 students (2009-2010 data) who are 45% African

American, 41% Latino, 9% White, 3.6% Pacific Islander, and 0.2% Native American. Eighty-six percent of the students are from low-income facilities and 12.2% are limited in their English proficiency.

A 2009 grant provided by the U.S. Department of Education through an Excellence in Economic Education grant administered by the Council for Economic Education funded a project to tackle this confusion head on. The goal was to identify key descriptors in economics and financial literacy and ask teachers to rate their knowledge of these descriptors and their readiness to teach them. Additionally, teachers rated the importance of these descriptors to their students. And, finally, teachers identified the top five professional development opportunities that would enhance their readiness to teach those descriptors. Professional development would start here, by making the content intelligible.

2. REVIEW OF PROFESSIONAL DEVELOPMENT LITERATURE

We started with content development, its importance to teachers and their students, and the identification of what professional development is needed. This led us into the rich professional development research for K-12 teachers. What emerged was a body of work which spoke to the power of interventions, as well as the limitations of authorized top-down initiatives.

Studies confirmed that impactful professional development aims at teacher reflection. Here, teachers are perceived as makers of curriculum. Craig writes about the “broad range of shaping effects on classroom practice” (2009, p. 559). In this setting the teacher is an agent of change as he/she converses with others about their practices. The implied message is teachers’ need to own the discourse and find authority in their own narratives. Craig’s knowledge communities are organically lived, can be created, evolves commonplaces of experiences, is collaborative among individuals and groups, interacts for its own purposes, and aims at accountability of practice (2009. P.603)

This model resonates with the work of Newman, King, and Youngs (2000). They concluded that “professional development has generally failed to improve teaching because it is usually implemented in ways that violate key conditions for teacher learning” (p. 259). Their scholarship states that professional development should be school -specific, collegially organized for inquiry, and connect teachers to external expertise, while being respectful of teachers ‘creativity. In their model, experiences should be “sustained and continuous rather than short-term and episodic.’(p. 259).

In a similar vein, Lawless and Pellegrino’s work on integrating technology into teaching and learning, describes the inadequacies of professional development, despite an increase over the years. Their major criticism is leveled against classroom practices, which do arise from a research-base of what works. They concluded there is no single genre of studies or methodology adequate for improving practice. In their design, one must define and evaluate quality professional development; discuss challenges of integration; recognize the research is limited; create schema to organize the research; and lay out the evaluation questions to be tested. They were particularly concerned with the needs of urban and rural teachers, concluding “the quality of the training offered to them leaves much to be desired.” (p.578)

However, Lawless and Pellegrino did identify successful elements of high-quality professional development. They are: longer in duration (contact hours plus follow-up); provide access to new technologies for teaching and learning; actively engage teachers in meaningful and relevant activities for their individual contexts; promote peer collaboration and community building; and have a clearly articulated and a common vision for student achievement.”(p. 579) They concluded the most important impact of professional development is changed pedagogical practice. To that end, they offer key questions for teacher reflection. What do teachers do differently in their classrooms as a product of professional development? How has their instruction changed? How do these changes inform future practice? (p. 597) Similarly, Dana, Campbell, and Lunetta’s

research in science education reported that the essential role of professional communities in shaping and sustaining reform, since fragmented approaches “seldom requires teachers to deepen and enrich understandings of teaching and learning.” (1994, p. 427.)

The Sorgman/Parkison KACE Model details the elements for teacher efficacy in economics education as an enhanced knowledge base in economics, improved attitudes/dispositions toward economics education, and effective classroom applications which enhance student learning. Their work in schools and at the university describe the importance of learning communities and teacher literacy gains to ensure accurate and developmentally appropriate content be taught in schools. Their studies conclude teachers become advocates for economics and enthusiastic practitioners of standards-based and best practice principles, due to rigorous professional development interventions via course and in-service efforts. They focused on making the content in economics, financial literacy, and entrepreneurship education intelligible, attainable, and implementable in K-12 classrooms. Their courses “gave teachers the tools they need to understand the material, develop grade appropriate curriculum and assess their students’ learning.” (2008, pp.83-84)

This holistic view of the teacher goes beyond practitioners who deliver lessons and demonstrate skills. Dall’Alba and Sandberg’s work in stage models of professional development offers insights into how teachers progress from novice to competent and then expert practitioners. For them “practice is not a fixed or static container, but rather, a dynamic flow produced and reproduced by professionals”. (p.385) They disagree with the traditional view professional skill is a set of attributes, skills, and attitudes because they are often de-contextualized. Here, “professionals cannot meaningfully be separated in this manner from the activities and the situations in which they practice.” (2006, p.385) For these researchers, teachers’ understanding must integrate knowledge, acting and being. It is what they call a “professional way of being” (p.389).

Camburn, Rowan, and Taylor (2003) provide an alternative in their research on distributed leadership for school reform. Their goals include: setting instructional goals based on timelines for improvement and school progress, clarification of standards; using test data for instructional change, communicating/programming goals for improvement, improving specific curriculum unit teaching; developing instructional capacity based on sharing classroom practice advice, describing student work, demonstrating practice, discussing test results, discussing exemplars of student work, and providing staff development.; promoting cross-grade level instruction, bringing regular and special education coordination together, aligning assessment, and integrating curriculum; monitoring improvement by observing teachers, monitoring practice for improvement, evaluating teaching based on criteria; and expanding boundaries by seeking resources from outside sources, school improvement programs, universities, or funding agencies, and working with the local community and attending board/district meetings. (p.369)

All of the cited studies share a common belief that the “most powerful sources of school improvement success is the teacher who is passionately committed to her or his own lifelong learning, with a school organization that is continually renewing itself.” (Campbell et al.1997, p. 427). Professional development, in a time of financial crisis, requires alternative approaches to the top-down school district approach. In that model, curriculum specialists descend on schools with scheduled in-service functions. Teachers attend and take back into their classrooms new models of instruction and enriched curriculum materials. It is up to them to determine how what content is central to student understanding, what their students think about the content being taught, and what they need to make sure all of this happens so student literacy is enhanced.

3. TEMPLATE OF ECONOMICS AND FINANCIAL LITERACY PERFORMANCE DESCRIPTORS

The goal of our initial study was to build a comprehensive model of professional development for Chicago teachers to enhance their reflection and practice. However, the realities of massive school district changes halted that comprehensive project and turned us back to the one essential and re-occurring element teachers told us was missing. That was making the economics and financial literacy standards, via performance descriptors, intelligible. By doing so, we would create a platform upon which meaningful professional development could arise. In other words, establish the content first, and then find ways to enhance it being taught in K-2 classrooms.

The clarification of content to be delivered by teachers was emphasized by the studies cited above. We would be focusing on Craig's notion teachers are curriculum makers. We were connecting teacher knowledge to external experts Newman wrote about. There would be a research-based practice for pedagogical change advocated by Lawless and Pellegrino. The Sorgman/Parkison KACE Model, with its emphasis on deepening the economics and financial literacy base of teachers for classroom efficacy, would be realized and Cambrun's call for clarification of standards would be achieved.

4. MAKING THE CONTENT INTELLIGIBLE

To make the content intelligible, we reviewed the Illinois standards in economics and financial literacy, which lead to five key understandings: 1) Economic choices drive and are driven by a wide variety of factors and all economic choices have costs; 2) Economic incentives motivate people's behavior and decisions; 3) Consequences, both intended and unintended, follow economic decisions; 4) Economic systems differ with respect to level of stability, efficiency, freedom, security, and equality; and 5) Various social and political issues (labor, environment international trade) impact and are impacted by the global economy.

Secondly, we reviewed the Indiana Standards in Economics, since they were identified by Illinois economic educators and CEE as among the most exemplary standards in the

field. The content analysis was completed by integrating Indiana and Illinois descriptors, which drive instruction because they detail what students should be expected to know and do to demonstrate their economics and financial literacy.

Another level of content analysis was completed by utilization of the National Standards in K-12

Personal Finance Education of the Jump\$tart Coalition for Personal Financial Literacy. This triangulation ensured the veracity of the descriptors and their meaning. This is critical, since teachers can fall victim to erroneous economic definitions. When this happens, students are taught the wrong content and have to unlearn it later on. CEE has deemed this important enough to provide teachers with vetted curriculum, such that their materials have become the “gold standard” in economics and financial literacy. This is particularly true in their successful Financial Fitness for Life Curriculum. Its broad utilization is providing researchers with a reliable national baseline of literacy in K-12 economics and financial literacy.

This is further demonstrated by the widely utilized normed tests for K-12 students. The TEL, BET, TEK, and the Financial Fitness for Life tests are organized by grade bands. They would fit the developmental levels which organize content in Chicago. Additionally, they could serve as pre and posttest measures, a practice in the economics/financial literacy research. A limitation was the lack of a kindergarten normed test for researchers or classroom teachers.

Chicago Public Schools identified five understandings as follows: financial responsibility and decision-making; income and careers; planning and money management; credit and debt, risk management and insurance; and saving and investing. Descriptors written for each grade band are as follows: 12 performance descriptors for grades K-12, 45 performance descriptors for grades 3-5, 42 performance descriptors for grades 6-8, and 51 performance descriptors for grades 9-12.

As a result of our deep analysis of varied sources on economics and financial literacy content for Chicago teachers, a survey was developed for three grade bands. The K-2 teachers were given 21 performance indicators; grade 3-5 teachers were given 33 performance descriptors, grade 6-8 teachers were given 26 performance descriptors, and grade 9-12 teachers were given 22 performance descriptors. Additionally, all teachers were asked to rank order 13 professional development opportunities. They were school in-service programs, district-wide in-service programs, school based experts, graduate courses, license renewal courses, online teacher network, demonstration lessons, CD/online resources, professional meetings, center for economic education workshop, classroom visits from university experts, foundation funding/grant writing assistance, and a miscellaneous category. (See Appendix I for the survey).

The survey of descriptors by grade bands (K-12, 3-5, 6-8, and 9-12) was posted on various websites to solicit a broad response from Chicago teachers over a period of one month. Survey Monkey was the tool used. It directed teachers to the appropriate grade band protocol, hereby ensuring teachers were responding to descriptors for their classrooms. Three entities invited teacher responses: the University of Illinois at Chicago Center for Economic Education; the Chicago Foundation for Education; and Econ Illinois.

5. RESEARCH QUESTIONS

Four questions were investigated in this study. First, how do teachers rate the importance of key economics and financial literacy performance indicators at their grade level? Second, how do teachers rate their own knowledge of the financial literacy performance descriptors at their grade level? Third, how do teachers rate their readiness to teach each economics or financial literacy performance descriptor for their grade level? Fourth, what are the five top professional development opportunities that

would enhance their readiness to teach the performance descriptors in economics and financial literacy at their grade level?

HYPOTHESES

- H1: Teachers would rate the importance of the economics and financial literacy descriptors highly for their students.
- H2: Teachers would be more variable in their ratings of their own knowledge of each descriptor.
- H3: Teachers will be more variable in their readiness to teach each descriptor.
- H4: Teachers would prefer different professional development opportunities, according to their grade bands.

6. METHODOLOGY AND ANALYSIS

Research Design:

Teachers were solicited from three Chicago networks to complete an online survey on performance descriptors in economics and financial literacy appropriate to their grade level. Teachers rank ordered the top five professional development opportunities which would best enhance their ability to deliver instruction to meet the performance descriptors. A sample of 115 teachers in grades K-12 responded to the online survey. Procedures for administering the survey, collecting data, and analyzing results were subject to review by the Institutional Review Board of the University of Illinois at Chicago.

This study created a baseline of how teachers rate the importance of performance descriptors in economics and financial literacy in each grade level for K-12 students,

how teachers rate their own knowledge, teachers rate their readiness to teach each performance descriptor, and they indicated the top five professional development opportunities which would enhance their ability to deliver instruction to meet these performance indicator outcomes.

Measurement of Variables:

To develop valid surveys, we completed a content analysis of Illinois standards in economics and financial literacy, Indiana standards in economics and financial literacy, and the national voluntary standards in economics (*National Voluntary Content Standards in Economics*, 2010). We consulted key economic educators in Illinois to review items for clarity, the meaning of the items, and whether items represent agreed-upon concepts, skills, and learning outcomes in economics and financial literacy. This resulted in a total of 114 performance descriptors K-12, but each teacher rated only those applicable for their grade band. The breakdown of descriptors is as follows: K-2: 21 performance descriptors; Grades 3-5: 33 performance descriptors; Grades 6-8: 26 performance descriptors; and Grades 9-12: 22 performance descriptors. See Appendix 1 for survey questions.

Survey Data:

Table 1 (following discussion) presents summaries of teachers' ratings of the importance of each economics or financial literacy performance descriptor, self-ratings of their knowledge of each performance descriptor, and their readiness to teach each performance descriptor for their grade band: K-2, Grades 3-5, Grades 6-8, Grades 9-12. Teachers rated these performance descriptors of high importance: the 4-5 (Medium High and High Importance) ratings were significantly different from the 1-2 (Low and Medium Low) ratings, confirming our first hypothesis that teachers would rate economics and financial literacy as important. Similarly, the means and medians for teacher knowledge and readiness to teach are high. The standard deviations for importance are slightly higher for importance than for knowledge and readiness to teach.

Tables 2, 3, and 4 identify the top and bottom 3 performance descriptors by points. A ranking of High Importance (or High Knowledge, or High Readiness to Teach) received 5 points, Medium High 4 points, Medium 3 points, Medium Low 2 points, and Low 1 point. There is a wide distance between the number of points for the top-ranked performance descriptors and those on the bottom.

Tables 5 and 6 summarize teacher rankings by grade level bands for 13 possible alternatives. Teachers ranked their top 5 choices. To order them, we gave a ranking of 1 a score of 5 points, a ranking of 2 a score of 4 points, and so on. We summed the point totals, which are reported in Table 5. Teacher rankings (by number of points) are reported in Table 6.

All of these ratings are self-reported by the teachers in our sample.

Analysis:

Teachers differed in the performance descriptors they thought most important for their students and what they felt ready to teach. Elementary teachers were less consistent in the top and bottom ratings of importance of performance indicators to their students, their knowledge of the performance indicators, and their readiness to teach each performance indicator. In contrast, middle school and high school teachers were more consistent in the top and bottom ratings of importance of performance indicators to their students, their knowledge of the performance indicators, and their readiness to teach each performance indicator..

The KACE Model, as previously published, connects teachers' knowledge, their comfort with that knowledge, and application of content and curriculum in the classroom as essential elements for successful student learning outcomes. This model describes a three-legged stool which leads to teacher efficacy and enhanced student learning outcomes in economics, financial literacy, and entrepreneurship. The current study

adds a fourth leg to that stool, which is teachers' rating of the importance of performance descriptors for their students. This added leg, importance to students, turns a three-legged stool into a more stable four-legged stool of teacher efficacy. Perhaps, this will enhance understanding of K-12 students in economics and financial literacy.

To help teachers become ready to deliver the economics and financial literacy performance descriptors, they need professional development opportunities in content and curriculum. This is expressed in Table 5, where teachers identify centers for economic education and demonstration lessons as the preferred professional development opportunities. Additionally, school-based in-service is rated higher than district-wide in-service. All of these preferred professional development opportunities ensure that the content is correct, lesson plans are appropriate for the grade levels, and the resources are reliable. Of least importance are the license renewal courses, as rated by all the teachers in each of the grade bands. In the middle ranks are CD/online resources, graduate level courses, and professional meetings. High school teachers ranked professional meetings higher than other teachers. Finally, none of the six early elementary (K-2) teachers included CD/online resources or a license renewal course in their top five professional development opportunities.

Table 1: Importance of Teacher Knowledge, and Readiness to Teach Performance Descriptors

Grades		K-2 (EE)	3-5 (LE)	6-8 (MS)	9-12 (HS)	All
Number of Obs.		126	627	884	1232	2869
FL Importance	Mean	3.54	3.47	3.83	4.26	3.89
	Median	4	4	4	5	4
	S.D.	1.36	1.29	1.29	1.00	1.26
	1	10.32%	7.66%	7.92%	1.70%	5.30%
	2	8.73%	9.25%	7.69%	4.14%	6.55%
	3	15.87%	16.91%	15.95%	10.39%	13.77%
	4	22.22%	19.94%	21.83%	20.54%	20.88%
	5	26.19%	19.62%	39.71%	45.13%	37.05%
	No Response	16.67%	26.63%	6.90%	18.10%	16.45%
FL Teacher Knowledge	Mean	3.94	3.85	3.85	4.30	4.05
	Median	4	4	4	5	4
	S.D.	0.95	1.02	1.14	0.92	1.04
	1	0.00%	1.28%	3.51%	1.06%	1.81%
	2	9.52%	6.54%	9.05%	3.33%	6.06%
	3	11.11%	16.11%	20.36%	9.82%	14.50%
	4	37.30%	26.00%	25.34%	23.21%	25.10%
	5	25.40%	22.33%	34.95%	44.56%	35.90%
	No Response	16.67%	27.75%	6.79%	18.02%	16.63%
FL Readiness to Teach	Mean	3.76	3.77	3.77	4.30	3.99
	Median	4	4	4	5	4
	S.D.	1.14	1.06	1.17	0.92	1.08
	1	1.59%	3.03%	3.85%	0.49%	2.13%
	2	15.08%	5.26%	10.18%	4.14%	6.73%
	3	11.11%	16.43%	22.51%	10.88%	15.68%
	4	29.37%	27.43%	23.19%	20.78%	23.35%
	5	26.19%	19.46%	32.92%	45.45%	35.06%
	No Response	16.67%	28.39%	7.35%	18.26%	17.04%

Table 2: Teacher rating of the importance of these performance descriptors for their students

	Early Education (K-2)	Late Elementary LE (3-5)	Middle School MS (6-8)	High School HS (9-12)
Top 3	Scarcity	Financially responsible youth	Role of Education in income	Decision making- Today vs. Tomorrow
	Productive Resources	Prices, income and quality for demand for consumers	Shopping	Savings trade-offs
	Choices	Barter vs. dollars	Role for government	Interest
Bottom 3	Grandparent's childhood spending	Risk vs. Insurance	Consumer Production laws	Entrepreneurship
	Wealth – personal values	Financial account characteristics	Investing for short term goals	Risk
	Cash vs. Credit	Stocks vs. Bonds	Wealth – personal values	Gains from Trade

Table 3: Teacher's own knowledge of these performance descriptors; these are the items that teachers know either the most or the least about.

	Early Education (K-2)	Late Elementary LE (3-5)	Middle School MS (6-8)	High School HS (9-12)
Top 3	Value of Emergency Funds	Saving for short term goals	Role of Education in income	Decision Making – Today vs. Tomorrow
	Cutting expenses to save more	Consequences of financial decisions	Shopping	Decision Making - Consequences
	Ranking of Wants vs. Needs	Cash vs. Credit	Advertising and spending	Interest
Bottom 3	Avoiding and identifying risks	Stocks vs. Bonds	Competition	Entrepreneurship
	Exchange with or with money	Financial Institutions	Investing for short term goals	Investing for goals
	Wealth – personal values	Risk vs. Insurance	Consumer Protection laws	Costs/Benefits of Public Policy

Table 4: Teacher estimation of their readiness to teach these performance descriptors

	Early Education (K-2)	Late Elementary LE (3-5)	Middle School MS (6-8)	High School HS (9-12)
Top 3	Ranking Wants vs. Needs	Decision Making	Shopping	Interest
	Value of Emergency Funds	Consequences of Financial Decisions	Role of Education in income	Decision Making – Consequences
	Jobs at home	Saving for short term goals	Advertising and spending	Decision Making - Today vs. Tomorrow
Bottom 3	Grandparent's childhood spending	Financial Institutions	Investing for goals	Investing for goals
	Characteristics of a borrower	Risk vs. Insurance	Local government programs	Entrepreneurship
	Wealth - personal values	Stocks vs. Bonds	Consumer Protection laws	Costs/Benefits of Public Policy

Table 5: Teacher Professional Development—Teachers Choose Top 5 Ways to Receive Training (Total Points per Option)

Option		Total	EE	LE	MS	HS
1	School In-service	202	17	37	72	76
2	District-Wide In-service	134	4	23	43	64
3	School-Based Expert	156	5	29	47	75
4	Graduate Course	180	4	14	68	94
5	License Renewal Course	97	0	15	37	45
6	Online Teacher Network	157	3	18	54	82
7	Demonstration Lessons	298	16	49	112	121
8	CD/Online Resources	207	0	27	80	100
9	Professional Meetings	210	1	24	68	117
10	Center for Econ Ed Workshops	310	8	40	117	145
11	Classroom Visits from University Experts	176	0	29	71	76

12	Foundation Funding/Grant Writing Assistance	152	2	21	62	67
13	Other Possibilities (Please list)	20	0	1	1	18

Table 6: Teacher Professional Development—Teachers Choose Top 5 Ways to Receive Training (Ranking)

Option #	Ranking	Rank Total	Rank EE	Rank LE	Rank MS	Rank HS
1	School In-service	5	1	3	4	7
2	District-Wide In-service	11	5	8	11	11
3	School-Based Expert	9	4	4	10	9
4	Graduate Course	6	6	12	6	5
5	License Renewal Course	12	10	11	12	12
6	Online Teacher Network	8	7	10	9	6
7	Demonstration Lessons	2	2	1	2	2
8	CD/Online Resources	4	11	6	3	4
9	Professional Meetings	3	9	7	7	3
10	Center for Econ Ed Workshops	1	3	2	1	1
11	Classroom Visits from University Experts	7	11	5	5	8
12	Foundation Funding/Grant Writing Assistance	10	8	9	8	10
13	Other Possibilities (Please list)	13	11	13	13	13

7. FINDINGS

These were our initial hypotheses:

- H1: Teachers would rate the importance of the economics and financial literacy descriptors highly for their students.
- H2: Teachers would be more variable in their ratings of their own knowledge of each descriptor.
- H3: Teachers will be more variable in their readiness to teach each descriptor.

H4: Teachers would prefer different professional development opportunities, according to their grade bands.

H1 was confirmed, as reported above. H2 and H3 were not confirmed, though standard deviations of ratings of their knowledge and readiness to teach did vary slightly by grade band. One explanation may be that the majority of respondents had some previous experience or affiliation with Council and Center network of Economic Education providers, making them more familiar with economic content and its applications to economics and financial literacy. H4 is somewhat confirmed for elementary teachers, who are typically generalists in contrast to middle school and high school teachers, who are typically subject matter experts.

The data clearly point to Center for Economic Education workshops as the most highly rated professional development opportunity for middle school and high school teachers, and the second highest rated opportunity for elementary teachers. The second choice for the whole group and first choice for grades 3-5 teachers is demonstration lessons. It should be noted that centers for economics education do provide demonstration lessons. Both of these professional development opportunities are curriculum-based, which confirm the centrality of curriculum in fulfilling the economics and financial literacy mandates. It appears that center-based professional development is the best option for K-12 teachers. This is not surprising since centers provide access to high-quality, vetted, and economically correct materials. Additionally, they provide the expertise teachers need, given their limited academic preparation in economics and financial

literacy. Centers make the gold standard in economics and financial literacy curriculum available and accessible to teachers.

8. LIMITATIONS

The limitation of identifying key economics and financial literacy descriptors was modified by a content analysis of national, state, and school district standards and goals in economics and financial literacy. The limitations of self-reporting by teachers rating their own knowledge and readiness to teach the economics and financial literacy descriptors, and how they perceive the importance for their students are well known. The nature of our study did not allow for other approaches to those determinations.

However, the rank ordering by teachers of their top five professional development options are important contributions. These measures are inherently imprecise, but comparison across the categories and over time can shed light on important issues. Selection bias may have been a factor, as respondents may have agendas. Since the majority of respondents came from the UIC Center for Economic Education database they are more likely to have competence in economics and financial literacy. If there are gaps for them, one wonders about those respondents with little or no previous training in economics and financial literacy content and delivery.

9. CONCLUSIONS

Lee Shulman, noted educator in the field of teacher content knowledge, has consistently called for deepening teacher knowledge as a primary condition for their effectiveness (1987). To that end he has supported a massive study in teaching financial literacy, called the Pollinate Project. Under the direction of Dan Otter, 39,000 K-12 California teachers were surveyed to determine their attitudes and beliefs toward personal finance instruction. They concluded while teachers recognize the importance of financial literacy instruction, support its introduction in the elementary schools, view learning of the content in stand-alone and embedded in other courses as optimal, they felt there

were barriers to its implementation. Lack of suitable curriculum and time constraints were noted. They concluded that while teachers may support this content area, the question is “whether they will play a meaningful role in creating and implementing financial literacy instruction.” (Otter, 2010, p.11). Perhaps, teachers will do so when the content is made intelligible and the professional development opportunities support those efforts.

Teaching 21st century skills has finally included a focus on financial literacy. Leigh Hopkins, cites the Partnership for 21 Century Skills, a cornerstone document, in re-visioning school content. It states that core content must include economics and financial literacy. “In light of the current economic crisis, financial literacy skills are more important than ever, and have been for the most part, overlooked as part of the traditional classroom.” (March, 2009). In identifying other areas critical to the well-educated 21st century citizen such as learning innovation skills, information/media and technology skills, and life and career skills the role of economics and financial literacy clearly is more relevant than ever. Ironically, the professional development needed to enhance K-12 teacher readiness may not be available in the current economic environment.

Data from this research confirm the centrality of grade-appropriate content, which has been deemed essential in delivering economic and financial literacy education mandates. To that end, teachers appear to prefer engaging with centers for economic education because of the quality of materials provided. Additionally, the expertise of center personnel, such as directors, consultants, and teacher advisors, builds confidence and is likely to ensure readiness aimed an enhanced student learning. People and materials are preferred over online resources. General professional development: district-wide, license renewal, and general foundation funding are rated less important. Teachers with grant-writing experience (those coming through the portal of the foundation providing grants to teachers) rated grant-writing more highly than the

others. This suggests that familiarity with grant writing may increase its value as a professional development opportunity.

10. RECOMMENDATION FOR FURTHER STUDY

Establishing key financial literacy descriptors, vetted by economic educators and well-accepted standards in the field, was deemed a first step in the professional development of teacher efficacy in financial literacy. With that in place, the next step would be a return to the initial proposal to develop a comprehensive model of professional development which would guide teachers to implement curriculum and assessed K-12 student learning outcomes. Those strategies have been identified by teachers as their top and most preferred professional development opportunities.

Since many of those have traditionally been implemented via district wide in-service, time might be better spent looking at a non-traditional approach. Preliminary data suggest teachers find grant writing a less desirable professional development opportunity to enhance their readiness to deliver that content. Given budgetary constraints, grant writing could provide teachers with access to quality materials for their own classrooms. To that end, we are designing a study with Chicago Public Schools to study the impact of grant-writing on teachers' economic and financial literacy.

11. REFERENCES

- Bransford, John D., Anne L. Brown & Rodney R. Cocking, eds. (2000). *How People Learn: Brain, Mind, Experience, and School*, National Academy Press: Washington, D.C.
- Camburn, Eric, Rowan, Brian, & Taylor, James (Winter 2003). "Distributed Leadership in Schools: The Case of Elementary Schools Adopting Comprehensive School Reform," *Educational Evaluation and Policy Analysis*, Vol. 25 No. 4, pp. 347-373.
- Craig, Cheryl J. (June 2009) "Research in the Midst of Organized School Reform: Versions of Teacher Community in Transition," *American Educational Research Journal*, Vol. 46 No. 2, pp. 598-619.
- Dall'Alba, Gloria & Sandberg, Jorgen (Fall 2006). "Unveiling Professional Development: A Critical Review of Stage Models," *American Educational Research*, Vol. 76 No. 3, pp. 383-412.
- Dana, Thomas M., Campbell, Lois M., & Lunetta, Vincent (March 1997). "Theoretical Bases for Reform in Science Teacher Education," *Elementary School Journal*, Vol. 97 No. 4, pp. 419-432.
- Flannery, Masura C. (2001). "The Mind-Body Problem?", in *The American Biology Teacher*, Vol.63, No 8 (October, 2001), pp.610-615.
- Geersten, H. Reed (2003). "Thinking about Higher-Level Thinking", in *Teaching Sociology*, Volume 31, No.1 (January 2003), pp.1-19.
- Handal, Boris. and Anthony. Harrington (2003). "Mathematics Teachers' Belief and Curriculum Reform", in *Mathematics Education Research Journal*, Vol.5, No.1, pp.59-69.
- Hopkins, Leigh (March 24, 2009). "Teaching 21st Century Skills: Integrated Instructional Application to Content and Critical Thinking," <http://www.suite101.com/content/teaching-21st-century-skills-a104640> , accessed 9/7/2010.
- Illinois Social Science Performance Descriptors
<http://www.isbe.net/ils/html/descriptors.htm> , accessed 11/4/2010.
- Illinois Social Science Standards, State Goal 15 (Economics),
http://www.isbe.net/ils/social_science/pdf/goal15.pdf, accessed 11/4/2010.
- Illinois Core Standards http://www.isbe.state.il.us/ILS/pdf/standards_ga.pdf, accessed 11/4/2010.

Indiana's Academic Standards and Resources, Indiana State Board of Education, <http://www.doe.in.gov/octe/facs/IndianaFinLitEd-FrontPage.html>, accessed 11/4/2010.

Lawless, Kimberly A. & Pellegrino, James W. (December 2007). "Professional Development in Integrating Technology into Teaching and Learning: Knowns, Unknowns, and Ways to Pursue Better Questions and Answers," *Review of Educational Research*, Vol. 77 No. 4, pp. 575-614.

Mandell, Lewis, (2006), "Financial Literacy: If It's So Important Why Isn't It Improved?" http://www.networksfinancialinstitute.org/Lists/PublicationLibrary/Attachments/30/2006-PB-08_Mandell.pdf. Accessed 9/7/2010.

Markow, Dana, and Bagnaschi Kelly. (2005). What American Teens and Adults Know About Economics, http://38.121.131.180/WhatAmericansKnowAboutEconomics_042605-3.pdf , accessed 11/4/2010.

McCune, Velda & Dail Hounsell, Dail (2005). "The Development of Students' Ways of Thinking and Practicing in Three Final year Biology Courses", in *Higher Education*, Vol.49, No.3, Issues in Teaching and Learning from a Student Learning Perspective: A Tribute to Noel Entwistle (April, 2005).

National Voluntary Content Standards in Economics, 2nd Edition (2010). <http://www.councilforeconed.org/ea/standards/standards.pdf> , accessed 11/4/2010.

Newman, Fred M., King, M. Bruce, & Youngs, Peter (August 2000). "Professional Development that Addresses School Capacity: Lessons from Urban Elementary Schools," *American Journal of Education*, Vol. 108 No. 4, pp. 259-299.

Norris, Stephen P. (1989). "Can We Test Validly for Critical Thinking?" in *Educational Researcher*, Vol. 18 No.9 (December), pp.21-26.

Otter, Dan, (2010).Teacher Attributes and Beliefs about Teaching Financial Literacy: A Survey of California K-12 Teachers, (June) http://www.pollinateproject.org/pdf/DanOtter_Pollinate_Research_June2010.pdf , accessed 11/4/2010.

Parkison, Kathy & Margo Sorgman (2005). "If You Build it, They Will Come: Conceiving a Saturday Class in Economics Education to Link Content, Applications, Implementation, and Assessment, *Mountain Rise*, <http://mountainrise.wcu.edu/index.php/MtnRise/article/view/58> , accessed 11/4/2010 .

Parkison, Kathy & Margo Sorgman, (1998). "Enhancing the Economic Literacy of Teachers for the 21st Century, in *International Advances in Economic Research*, Vol.4 No.4, pp.418-427.

Personal Finance Position Paper. [www.ind-ibea.org/Adaptation%20Final-Personal%20FinancePosition%20Paper%20\(ms\)3-4-27.doc](http://www.ind-ibea.org/Adaptation%20Final-Personal%20FinancePosition%20Paper%20(ms)3-4-27.doc) ,accessed 11/4/2010.

Proulx, Gilbert (2004). "Integrating Scientific Method & Critical Thinking in Classroom Debates on Environmental Issues", in *The American Biology Teacher*, Vol.66, No.1, (January 2004), pp.26-33. | |

Ross, John, A. Douglass McDougall, Anne Hogaboam-Gray, & Anne LeSage (2003). "A Survey Measuring Elementary Teachers' Implementation of Standards-Based Mathematics Teaching", in *Journal for Research in Mathematics Education*, Vol.34, No.4 (July), pp.344-363.

Saunders, Phillip and June Gilliard, eds.(2005). *A Framework for Teaching Basic Economics Concepts with Scope and sequence Guidelines, K-12*, National Council for Economic Education, New York, New York.

Shulman, Lee, (1987). *Knowledge and Teaching: Foundations of the New Reform*, in *Harvard Educational Review*, Vol. 11, No.1, pp.1-22.

Sorgman, Margo & Kathy Parkison (2003). "Economics In Action: SIFE, University, and Classroom Partnership, in *Journal of Entrepreneurship Education*, Volume 6, pp.77-86.

Sorgman, Margo & Kathy Parkison, (2008). "The Future is Now: Preparing K-12 Teachers and Their Students for an Entrepreneurial Society", in *Journal of Entrepreneurship Education*, (August), pp.75-86.

Teaching 21st Century Skills, (9/2/2010). <http://www.suite101.com/content/teaching-21st-century-skills-a104640> , accessed 11/4/2010.

Wang, Jian and Sandra J. Odell (2002). "Learning to Teacher According to Standards-Based Reform: A Critical Review", in *Review of Educational Research*, Vol.72, No.3, Standards-Based Reforms and Accountability (August 2002), pp.481-546.

Appendix 1: Surveys for Four Grade Bands: K-2, 3-5, 6-8, 9-12

DELIVERY OF ECONOMIC EDUCATION: K-2

(Please circle appropriate response)

Gender	Male	Female		
Current Teaching Grade Level(s)	K-2	3-5	6-8	9-12
Years Teaching	0-3	4-7	8-10	>10
Number of Econ Courses	0	1-2	3-5	6+
Number of Econ Prof. Dev. Sessions	0	1-2	3-5	6+

<u>Performance Descriptors:</u> <u>Early Elementary (Grades K-2)</u>	<u>Importance for Students</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Knowledge</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Readiness to Teach</u> <u>1 (NOT READY) TO 5 (READY)</u>
Describe a choice they have made and explain why they had to make a choice.			
Explain a way in which a scarce item could be distributed (e.g., one jump rope, 3 children).			
Describe jobs they do at home.			
List the resources needed to make a simple item.			
Identify exchanges that students have made with or without the use of money.			
Rank personal wants and needs in order of importance.			
Identify jobs children can do to earn money			
Compare prices for the same item at 2 different stores			
Analyze how to reduce and avoid different kinds of risk (give an age-appropriate activity such as riding a			

bicycle)			
Explain how limited personal financial resources affect the choices people make			
Describe the qualities that would be desirable in a person who borrows a favorite personal possession			
Give examples of reasonable conditions to set for the use of borrowed personal property			
Develop a definition of wealth based on personal values, priorities, and goals			
Apply systemic decision making to a short-term goal			
Give examples of how members of previous generations spent money as children			
Give examples of sources of income other than a wage or salary			
Explain how peer pressure can affect spending decisions			
Give examples of how external factors such as marketing and advertising techniques might influence spending decisions for different individuals			
Explain the difference between buying with cash and buying with credit			
Describe ways that people can cut expenses to save more of their incomes			
Explain the value of an emergency fund			

PLEASE SELECT AND RANK ORDER THE TOP 5 PROFESSIONAL DEVELOPMENT OPPORTUNITIES WHICH WOULD ENHANCE YOUR ABILITY TO DELIVER ECONOMIC CONTENT FOR YOUR GRADE LEVEL

_____ SCHOOL INSERVICE _____ DISTRICT-WIDE INSERVICE _____ SCHOOL-BASED EXPERT
 _____ GRADUATE COURSE _____ LICENSE RENEWAL COURSE _____ ONLINE TEACHER NETWORK

_____ DEMONSTRATION LESSONS _____ CD/ONLINE RESOURCES _____ PROFESSIONAL MEETINGS

_____ CENTER FOR ECON ED WORKSHOPS _____ CLASSROOM VISITS FROM UNIVERSITY EXPERTS

_____ FOUNDATION FUNDING/GRANT WRITING ASSISTANCE

OTHER POSSIBILITIES (PLEASE LIST)

DELIVERY OF ECONOMIC EDUCATION: 3-5

(Please circle appropriate response)

Gender	Male	Female		
Current Teaching Grade Level(s)	K-2	3-5	6-8	9-12
Years Teaching	0-3	4-7	8-10	>10
Number of Econ Courses	0	1-2	3-5	6+
Number of Econ Prof. Dev. Sessions	0	1-2	3-5	6+

<u>Performance Descriptors:</u> <u>Late Elementary (Grades 3-5)</u>	<u>Importance for Students</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Knowledge</u> 1 <u>(LOW) TO 5 (HIGH)</u>	<u>Your Readiness to Teach</u> 1 <u>(NOT READY) TO 5 (READY)</u>
Identify human resources in their community and the goods and services they produce.			
Identify factors that affect consumer choices (e.g., prices of goods and services, quality, income, preferences/tastes).			
Identify the opportunity cost of a recent consumer choice they have made.			
Describe how money makes exchange easier.			
Describe examples of public goods and services in the community or state.			
Identify ways to be a financially responsible youth			

Set measurable short-term financial goals			
Explain the difference between a career and a job and identify various jobs in the community			
Give an example of how an individual's interests, knowledge and abilities can affect career and job choice			
Apply systematic decision making to a personal age-appropriate purchase			
Give examples of household assets			
Explain the difference between buying with cash and buying with credit			
Describe the advantages and disadvantages of saving for a short term goal			
List examples of financial decisions and their possible consequences			
Outline the steps in systematically evaluating alternatives and making a decision			
Compare personal skills and interests to various career options			
Give an example of entrepreneurs in the community			
Describe different types of local financial institutions and explain the differences between them			
Describe the advantages and disadvantages of using credit			
Give examples of risks that individuals and households face			
Develop a definition of wealth based on personal values, priorities, and goals			
Give an example of an investment and explain how it can grow in value			
Analyze and evaluate advertising claims			
Analyze the values and attitudes of members of previous generations from their personal stories about money			

Explain the difference between a wage and a salary			
Give an example of how government uses tax revenues			
Identify a private charitable organization and the people it serves			
Give examples of how external factors such as marketing and advertising techniques might influence spending decisions for different individuals			
Explain why financial institutions lend money			
List ways to avoid credit problems, including not over spending			
Discuss the relationship between risk and insurance			
Compare the main features of interest earning accounts at local financial institutions			
Explain how stocks and bonds differ as investments			

PLEASE SELECT AND RANK ORDER THE TOP 5 PROFESSIONAL DEVELOPMENT OPPORTUNITIES WHICH WOULD ENHANCE YOUR ABILITY TO DELIVER ECONOMIC CONTENT FOR YOUR GRADE LEVEL

- SCHOOL INSERVICE DISTRICT-WIDE INSERVICE SCHOOL-BASED EXPERT
 GRADUATE COURSE LICENSE RENEWAL COURSE ONLINE TEACHER NETWORK
 DEMONSTRATION LESSONS CD/ONLINE RESOURCES PROFESSIONAL MEETINGS
 CENTER FOR ECON ED WORKSHOPS CLASSROOM VISITS FROM UNIVERSITY EXPERTS
 FOUNDATION FUNDING/GRANT WRITING ASSISTANCE

OTHER POSSIBILITIES (PLEASE LIST)

DELIVERY OF ECONOMIC EDUCATION: 6-8

(Please circle appropriate response)

Gender	Male	Female		
Current Teaching Grade(s)	K-2	3-5	6-8	9-12

Years Teaching	0-3	4-7	8-10	>10
# of Econ Courses	0	1-2	3-5	6+
# of Econ Prof. Dev. Sessions	0	1-2	3-5	6+

<u>Performance Descriptors:</u> <u>Middle School (Grades 6-8)</u>	<u>Importance for Students 1 (LOW) TO 5 (HIGH)</u>	<u>Your Knowledge 1 (LOW) TO 5 (HIGH)</u>	<u>Your Readiness to Teach 1 (NOT READY) TO 5 (READY)</u>
Identify the characteristics of effective entrepreneurs (e.g., why they are willing to take risks to start new businesses).			
Identify the primary functions and services of financial institutions.			
Illustrate how technology and division of labor in a production process can increase productivity.			
Explain how the pursuit of self-interest in competitive markets affects national economic well being.			
Explain why there is a role for government in the economy.			
Give examples of the benefits of financial responsibility and the costs of financial responsibility			
Identify differences among peers' values and attitudes about money			
Give an example of how education and/or training can affect lifetime income			
Give examples of how external factors such as marketing and advertising techniques might influence spending decisions for different individuals			
Explain the difference, with examples, between assets and liabilities			
Describe the advantages and disadvantages of saving for short and medium term goals			
Explain the difference between earned and unearned income and give an example of each			

Discuss the components of a personal budget including income, planned saving, taxes, and fixed and variable expenses			
Apply comparison shopping skills to purchasing decisions			
Explain how interest rates and loan length affect the cost of credit			
Explain why it is important to establish a positive credit history			
Develop a definition of wealth based on personal values, priorities, and goals			
Explain why saving is a prerequisite to investing			
Define the time value of money and explain how small amounts of money invested regularly over time grow exponentially			
Describe the problems that occur when one is a victim of identity theft and actions an individual can take to protect personal identity			
Describe how a local government assistance program can benefit people in the community			
Give examples of employee benefits and explain why they are forms of compensation			
Discuss the advantages and disadvantages of different payment methods such as stored value cards, debit cards, and online payment systems			
Compare the features and costs of a checking account and a debit card offered by local financial institutions versus check-cashing service			
Give examples of protection derived from consumer credit laws			
Explain how to match investments to financial goals			

PLEASE SELECT AND RANK ORDER THE TOP 5 PROFESSIONAL DEVELOPMENT OPPORTUNITIES WHICH WOULD ENHANCE YOUR ABILITY TO DELIVER ECONOMIC CONTENT FOR YOUR GRADE LEVEL

- _____ SCHOOL INSERVICE _____ DISTRICT-WIDE INSERVICE _____ SCHOOL-BASED EXPERT
 _____ GRADUATE COURSE _____ LICENSE RENEWAL COURSE _____ ONLINE TEACHER NETWORK
 _____ DEMONSTRATION LESSONS _____ CD/ONLINE RESOURCES _____ PROFESSIONAL MEETINGS

_____ CENTER FOR ECON ED WORKSHOPS _____ CLASSROOM VISITS FROM UNIVERSITY EXPERTS

_____ FOUNDATION FUNDING/GRANT WRITING ASSISTANCE

OTHER POSSIBILITIES (PLEASE LIST)

DELIVERY OF ECONOMIC EDUCATION: 9-12

(Please circle appropriate response)

Gender	Male	Female		
Current Teaching Grade Level(s)	K-2	3-5	6-8	9-12
Years Teaching	0-3	4-7	8-10	>10
Number of Econ Courses	0	1-2	3-5	6+
Number of Econ Prof. Dev. Sessions	0	1-2	3-5	6+

<u>Performance Descriptors:</u> <u>High School (Grades 9-12)</u>	<u>Importance for Students</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Knowledge</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Readiness to Teach</u> <u>1 (NOT READY) TO 5 (READY)</u>
Make effective decisions as consumers, producers, savers, investors, and citizens.			
Identify incentives that affect people's behavior and explain how incentives affect their own behavior.			
Predict future earnings based on their current plans for education, training, and career options.			
Identify the risks, returns, and other characteristics of entrepreneurship that bear on its attractiveness as a career.			
Interpret media reports about current economic conditions and explain how these conditions can influence decisions made by consumers, producers, and government policymakers.			
Explain situations in which they pay or receive interest, and explain how they would react to changes in interest rates if			

they were making or receiving interest payments.			
Negotiate exchanges and identify the gains to themselves and others. Compare the benefits and costs of policies that alter trade barriers between nations, such as tariffs and quotas.			
Identify markets in which they have participated as a buyer and a seller and describe how the interaction of all buyers and sellers influences prices. Also, predict how prices change when there is either a shortage or surplus of the product available.			
Predict how prices change when the number of buyers or sellers in a market changes, and explain how the incentives facing individual buyers and sellers are affected.			
<u>Performance Descriptors:</u> <u>High School (Grades 9-12)</u>	<u>Importance for Students</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Knowledge</u> <u>1 (LOW) TO 5 (HIGH)</u>	<u>Your Readiness to Teach</u> <u>1 (NOT READY) TO 5 (READY)</u>
Explain how changes in the level of competition in different markets can affect price and output levels.			
Identify and evaluate the benefits and costs of alternative public policies, and assess who enjoys the benefits and who bears the costs.			
Explain how individuals demonstrate responsibility for financial wellbeing over a lifetime			
Set measurable short- medium- and long-term financial goals.			
Give examples of how decisions made today can affect future opportunities.			
Describe the risks, costs, and rewards of starting a business.			
Analyze how economic, social, cultural, and political conditions can affect income and career potential.			
Identify a career goal and develop a plan and timetable for achieving it, including educational/training requirements, costs, and possible debt.			
Develop, monitor, and modify a personal financial plan, including goals, net worth statement, cash flow statement, insurance plan, investing plan, and a budget.			
Apply systematic decision making to identify the most cost-effective option for making a purchase			
List actions that a consumer could take to reduce or better manage excessive debt			
Recommend insurance for the types of risks that young			

adults might face			
Identify the appropriate types of investments to achieve the objectives of liquidity, income, and growth			

PLEASE SELECT AND RANK ORDER THE TOP 5 PROFESSIONAL DEVELOPMENT OPPORTUNITIES WHICH WOULD ENHANCE YOUR ABILITY TO DELIVER ECONOMIC CONTENT FOR YOUR GRADE LEVEL

- _____ SCHOOL INSERVICE _____ DISTRICT-WIDE INSERVICE _____ SCHOOL-BASED EXPERT
 _____ GRADUATE COURSE _____ LICENSE RENEWAL COURSE _____ ONLINE TEACHER NETWORK
 _____ DEMONSTRATION LESSONS _____ CD/ONLINE RESOURCES _____ PROFESSIONAL MEETINGS
 _____ CENTER FOR ECON ED WORKSHOPS _____ CLASSROOM VISITS FROM UNIVERSITY EXPERTS
 _____ FOUNDATION FUNDING/GRANT WRITING ASSISTANCE

OTHER POSSIBILITIES (PLEASE LIST)
