District Superintendent Perceptions of Idaho Secondary CTE Teachers' Professional Development Needs

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ABSTRACT

The purpose of this study was to describe Idaho superintendents' perceptions of Career and Technical Education (CTE) teacher's professional development needs. A descriptive instrument based on Borich's (1980) Needs Assessment Model was completed by 78 respondents ($n = 78$). Items related to teaching in a CTE program were assessed for importance, as well as competence of teachers towards the item. Mean Weighted Discrepancy Scores (*MWDS*) were used to prioritize perceived professional development needs. Teaching critical/creative thinking skills and proper safety attitudes were the items with the highest importance ratings. CTE teachers were perceived to be most competent at teaching safety attitudes and practices. Integrating reading and writing standards into CTE curricula were found to be the highest rated perceived in-service priorities as measured by the MWDS. The findings offer direction for pre-service curriculum and in-service activities for CTE teachers. Input from district educational leaders and other stakeholders are a foundation for CTE in-service planning.

Introduction

The superintendent is the instructional leader and chief executive officer of the school district (Hoyle, Bjork, Collier, & Glass, 2005; Wilmore, 2008). Superintendents are responsible for and supervise district budgets, personnel decisions, and community interaction (Wilmore, 2008). Ultimately, however, the "CEO" is responsible for increasing student achievement district wide. To create a culture that fosters high levels of achievement, effective superintendents empower district teachers to grow professionally and focus on higher levels of performance (Hoyle, et al., 2005).

A function of this empowerment of teachers is to promote professional development through in-service activities designed to meet the training needs of district wide personnel. Effective in-service activities lead to the change necessary to improve student learning and achievement. Planning is an important part of the process of school change, and this includes planning of professional development activities to meet district improvement goals (Zepeda, 1999). Needs assessments are an aspect of the planning process. Effective in-service planning will include the perceptions of school leaders such as the district superintendent as to what teachers need.

Academic and career and technical education (CTE) teachers have similar professional development needs. However, because of the unique nature of CTE programs, CTE teachers have additional unique training needs in regards to overall program management. Besides the responsibilities of designing engaging activities, which facilitate learning, CTE teachers prepare and manage program budgets, supervise and advise Career and Technical Student Organizations,

create effective public relations, maintain industry advisor committees, and complete academic and state reports (Kitchel, Arnett, Cannon, & Duncan, 2010).

Forty-six states, including Idaho, are currently implementing Common Core State Standards (CCSS, 2010). CCSS focus on the process of learning that leads to the development of higher ordered thinking skills. CTE teachers have identified critical and creative thinking skills and motivating students to learn as in-service priorities (Cannon, Kitchel, & Duncan, 2012). The continued evolution of the integration of core subjects with CTE curriculum may provide an opportunity for school districts to achieve desired student learning outcomes for CCSS.

This study sought to determine district superintendents' perceived professional development needs of Idaho secondary CTE instructors in order to contribute to the growing body of knowledge in this area. Results will add to the growing scholarship in CTE professional development.

Conceptual Framework

The research conducted for this study was guided by a two part conceptual framework, the role of the superintendent as the educational leader of a school district, and the use of the Borich Needs Assessment (1980) as a model to effectively and efficiently determine professional development priorities for CTE teachers. These two concepts provide a lens to view in-service training needs for CTE professionals from the perspective of educational leaders seeking continuous school improvement.

Superintendent leadership is influential to the development of learning communities that demonstrate improvement (Williams, Tabernik, & Krivak, 2009). Hoyle et al. (2005, pp. 5-6) identified four functions of a highly effective school leader:
1. Building powerful forms of teaching and learning;
2. Creating strong communities in schools;
3. Expanding students' social capital valued by schools; and,
4. Nurturing the development of families' educational culture.
Focusing on "creating strong communities in schools", effective school leadership cultivates "learning communities" which strengthens teacher efficacy, thus building a solid foundation for teacher effectiveness (Hoyle et al., 2005). Guided by the district leader, professional development can be an important component of teachers' professional growth that leads to school improvement and effective student learning (Shipman, Queen, & Peel, 2007).

Dewey (1938) theorized learning as a process of growth. Building on this theoretical foundation, professional development for the educational setting has been defined as the "systematic attempt to affect the professional practices, beliefs and understandings of school persons toward an announced goal" (Bradley, Kallick, & Regan, 1991, p. 3). Conceptually, professional development is "a continuous process for shaping the organization" (Hoyle et al., 2005, p. 167). To be most effective, professional development plans should be guided by a district's mission, and activities should strengthen the ability to support this purpose (Hoyle et al., 2005). Because of their responsibility to promote and encourage professional growth by

teachers, it is important that superintendents be included in the determination of in-service needs, including those in the CTE content areas. As Wilmore (2008) noted, "Superintendents must…have the ability to use strategies such as observations of others and collaborative reflection to help form comprehensive professional growth plans with district and school personnel..." (p. 37).

The success of professional development and in-service activities is contingent on a well-designed needs assessment plan (Guskey, 2000). The needs assessment framework for this study was modeled after the work of Borich (1980) and subsequent researchers who have modified Borich's instrument in the CTE area (Cannon, Kitchel, & Duncan, 2012, 2013; Duncan, Ricketts, Peake, & Uesseler, 2006; Edwards & Briers, 1999; Garton & Chung, 1996, 1997; Joerger 2002; Layfield & Dobbins, 2002). Previous use of the model for the CTE profession has engaged the teachers in determination of professional development priorities (Cannon et al., 2012, 2013). The Borich model utilizes a descriptive survey designed to assess needs. For this study, the model informed the development of the survey instrument, which allowed respondents to rate items "*perceived level of importance*" and the respondent's "*perceived level of competence*" towards the item addressing teaching and learning and CTE program management items that had been identified by previous research (Cannon et al., 2012, 2013; Duncan et al., 2006; Garton & Chung, 1996; Joerger, 2002; Layfield & Dobbins, 2002). It must be emphasized that previous research using this methodology has been primarily focused on teachers' perceptions and not the views of administrators.

The Borich model provides researchers with two scores for items related to teaching and learning and CTE program management, importance and competence. The importance and competence scores are compared and the mean weighted discrepancy score (*MWDS*) is calculated for each item. This data are then analyzed and the items are ranked with those having the highest *MWDS* considered the most pressing professional development needs. Previous research has been critiqued for solely focusing on the perceptions of teachers, leading to the possibility that true professional development needs are not being identified (Cannon, Kitchel, Duncan, & Arnett, 2011). By considering the perceptions of school leaders such as district superintendents, as well as teachers, a better understanding of what the true needs are may be developed.

Early use of the Borich model to determine CTE professional development needs was mostly in the area of agricultural education (Duncan et al., 2006; Edwards & Briers, 1999; Garton & Chung, 1996, 1997; Joerger, 2002; Layfield & Dobbins, 2002). Researchers have identified "motivating students to learn", "classroom management and student discipline", "using the internet as a teaching tool", "teaching students problem solving skills", "using computers in the classroom", "using multimedia equipment in teaching", and "assisting students to increase critical thinking skills" as professional development needs for agricultural education teachers (Duncan et al., 2006; Edwards & Briers, 1999; Garton & Chung, 1996, 1997; Joerger, 2002; Layfield & Dobbins, 2002). Gathering and analyzing data may provide practical ways for educators to reflect on their practices and implement improvements for their programs.

The work by agricultural education researchers over the last sixteen years has provided a foundation for needs assessment in other CTE program areas; such as engineering and

technology, business and marketing, family and consumer sciences, and skilled and technical sciences (trades and industrial) (Cannon et al., 2011; Kitchel, Cannon, & Duncan, 2009, 2010; Cannon, Kitchel, & Duncan, 2010). CTE teachers as a group, excluding agricultural educators, have identified "teaching students to think critically and creatively", "motivating students to learn", "designing and developing digital-age learning experiences and assessments", and "utilizing website development and software" as teaching and learning priorities (Cannon et al., 2012). "Teaching students to think critically and creatively" and "motivating students to learn" have been consistently ranked in the top five by business teachers and engineering and technology education (Cannon et al., 2011; Kitchel et al., 2010).

Research has also shown results for management of the entire CTE program. Grant writing and funding opportunities along with an understanding of federal (Perkins), state, and local policy have consistently ranked as high needs across CTE program areas (Kitchel et al., 2009; Cannon et al., 2011; Kitchel et al., 2010; Cannon et al., 2010). Additional program management needs identified in previous studies were developing a public relations plan, developing curriculum based school-to-work activities, and establishing and organizing cooperative internships (Kitchel et al., 2009; Cannon et al., 2011; Cannon et al., 2010).

Research Objectives

School district educational leaders (i.e., superintendents) play an important role in providing professional development opportunities for staff, which include CTE teachers. Through observation and reflection, these leaders can provide valuable insight into the prioritization of in-service needs. Identifying professional development priorities of CTE teachers is a part of the national CTE research agenda (Lambeth, Elliot, & Joerger, 2008). Determining superintendents' perceptions of Idaho CTE teachers' professional development priorities was the overall research objective for this research. The specific research questions for this study were as follows:
1. What are the characteristics and educational backgrounds of Idaho superintendents?
2. What is the level of importance of specific concepts related to teaching, learning, and managing a CTE program as perceived by Idaho superintendents?
3. What is the perceived level of competence of Idaho CTE teachers in regards to the specific concepts related to teaching, learning, and managing a CTE program as perceived by superintendents?
4. What are Idaho CTE teacher professional development priorities as perceived by superintendents?

Methods and Procedures

A descriptive online survey, developed after a thorough review of relevant literature, was the data collection instrument used for this study. Idaho public school superintendents, as identified by the state's Department of Education, served as the population ($N = 150$). Because the researchers used a census population without employing sampling procedures, generalizability may be limited to the population or participants of this study.

Prior research on the professional development needs of secondary CTE and agricultural education teachers served as the basis for the design and development of the survey instrument

(Cannon et al., 2012, Kitchel et al, 2010; Duncan et al., 2006). All of the previous research was based on the Borich's Needs Assessment Model (Borich, 1980). Survey items were divided into two categories related to teaching in a CTE program, teaching and learning and program management. Of the 56 items, 32 were identified as concerning teaching and learning (see Table 1).

Table 1

CTE Teaching and Learning Statements

Motivate students to learn
Teach students to think critically and creatively
Integrate writing standards into the CTE curriculum
Integrate reading standards into the CTE curriculum
Design & develop digital-age learning assessments
Integrate math standards into the CTE curriculum
Integrate science standards into the CTE curriculum
Teach learning disabled students
Use digital tools to facilitate student learning, creativity, and innovation
Design & develop digital-age learning experiences
Assess and evaluate student performance
Teach problem-solving & decision-making skills
Develop performance based assessment instruments
Use digital tools for blended instruction
Integrate life skills into the curriculum
Embed graduation standards into the CTE curriculum
Use digital tools for on-line instruction
Teach gifted and talented students
Utilize website development software
Teach using experiments
Use multimedia equipment in teaching
Promote and model digital citizenship and responsibility
Use digital tools for face-to-face instruction
Classroom management
Teach proper safety practices in the lab
Teach proper safety attitudes in the classroom
Utilize database software (e.g., MS Access)
Utilize graphic design & publishing software
Utilize productivity software (word processing, spreadsheets, presentation software)
Organize and supervise teaching laboratories
Use non-computer technology in teaching
Integrate technology standards into the CTE curriculum

The remaining 24 items within the survey were directly related to program management. These items concern leading, organizing and maintaining a CTE program (see Table 2).

Table 2

CTE Program Management Statements

Grant writing & funding opportunities
Understand federal (Perkins), state, and local funding
Develop curriculum-based School-to-Work and/or School-to-Career activities
Provide guidance & career exploration activities to students
Develop public relations program
Evaluate a CTE program
Keep current with program related trends & issues
Conduct a needs assessments to determine Programs of Study / Pathways
Understand Career Clusters & Programs of Study / Pathways
Coordinate activities with local organizations/agencies
Determine CTE program content for specific courses
Develop relations with fellow teachers and administrators
Establish and organize co-op/internships
Develop and maintain required safety standards (State and Federal/OSHA standards)
Recruit/promote student involvement with Professional-Technical Student Organizations
(CTSOs)
Integrate CTSO activities into the regular classroom
Establish & use a program advisory committee
Complete reports for local and state agencies
Identify appropriate course textbooks, references, and materials
Knowledgeable of issues involved with traveling with students
Conduct parent/teacher conferences
Fundraise for Career-Technical Student Organizations (CTSOs)
Conduct an adult program
Plan and conduct student field trips

Two Likert type scales were associated with each item statement, one addressed the level of importance for the CTE teacher, and the other addressed the level of competence of CTE teachers towards it. The scales were designed so that district instructional leaders could rate the teaching and learning and program management items. The scale for level of importance was 1=*Not Important*, 2=*Little Importance*, 3=*Somewhat Important*, 4=*Important*, 5=*Very Important*. Level of competence was represented by the following scale; 1=*Not Competent*, 2=*Little Competence*, 3=*Somewhat Competent*, 4= *Competent*, 5=*Very Competent*. Content and face validity was established using a panel of experts consisting of CTE researchers, educational leadership researchers, and retired public school administrators reviewed the instrument. The researchers revised the instrument using suggestions from the panel of experts. Survey items were also created to ask the participants questions concerning characteristics of their school districts and personal information (e.g. age, gender, years of administrative experience, subjects taught, etc.).

The use of the internet as a delivery mode for survey implementation is widely accepted because of time, cost, accuracy, and efficiency advantages (Puig, 2002; Shannon, Johnson, Searcy, & Lott 2002; Topp & Pawloski, 2002; Wright, 2005). Researchers used research based

methodology to deliver the survey online (Dillman, Smyth, & Christian, 2009). When the survey was closed, 78 superintendents had participated in the study.

Late/non-response bias, which is a threat to external validity in survey research, was a concern for the researchers (Fowler, 2009). Procedures suggested from previous research were used to exam for late/non-response error (Lindner, Murphy, & Briers, 2001; Miller & Smith, 1983; Radhakrishna & Doamekpor, 2008). By analyzing late/non-response bias, it can be determined whether a sample is representative of the population. The evaluation of late/non-response bias was analyzed using an independent samples t test, which compared the mean scores for importance and competence between early respondents ($n = 24$) to late respondents ($n = 9$). Results revealed no statistically significant difference in the importance ratings between early respondents ($M = 4.24$, $SD = 0.51$) and late respondents ($M = 4.07$, $SD = 0.66$) ($t(31) = 0.798$, $p > .05$). No statistical difference was found for competence between early ($M = 3.34$, $SD = 0.83$) and late responders ($M = 3.58$, $SD = 0.65$) ($t(31) = -0.791$, $p > .05$). It was determined, based on the findings, that the sample was representative of the population of Idaho superintendents.

Data were analyzed using SPSS and MS Excel™. The superintendents' perceptions of CTE teacher professional development priorities were determined by calculating the mean weighted discrepancy scores ($MWDS$). The competence score was subtracted from the importance score for each item, and then the values were multiplied by each items mean importance rating. This produced weighted discrepancy scores, which were then averaged and ranked for all items. The higher the $MWDS$, the higher the item is considered as a professional development priority (Borich, 1980; Joerger, 2002).

Findings

Research Question 1: What are the characteristics and educational backgrounds of Idaho superintendents?

As mentioned previously, 78 Idaho superintendents responded to the survey. Of the participants just over three quarters were males (76.9%), almost all had been a classroom teacher (97.4%), and almost three quarters had over 10 years of experience as an administrator. Most of the superintendents were over the age of 45 (84.6%), and 10 were older than 65 years of age. Only 10 of the respondents had experience as a CTE teacher, with agriculture ($n = 4$) being the content area which had the most former teachers serving as superintendents in this study. Most of the superintendents had been high school teachers ($n = 62$).

Research Question 2: What is the level of importance of specific concepts related to teaching, learning, and managing a CTE program as perceived by Idaho superintendents?

Table 3 provides the mean scores and standard deviations for the importance ratings for items related to teaching and learning and program management for a CTE teacher. Teaching and learning items comprised nine of the top ten highest rated competencies. Competencies which had the highest rated mean scores were *Teach Students to Think Critically and Creatively*,

Teach Proper Safety Attitudes in the Classroom, Motivate Students to Learn, Teach Proper Safety Practices in the Lab, and *Teach Problem-Solving & Decision-Making Skills.*

Table 3

Superintendents' Perceived Importance Ratings of CTE Teaching, Learning, and Program Management Items (n = 78)

Item	M[a]	SD	Category[b]
Teach students to think critically and creatively	4.77	0.48	T&L
Teach proper safety attitudes in the classroom	4.76	0.49	T&L
Motivate students to learn	4.74	0.47	T&L
Teach proper safety practices in the lab	4.74	0.57	T&L
Teach problem-solving & decision-making skills	4.65	0.55	T&L
Classroom management	4.64	0.60	T&L
Develop and maintain required safety standards (State and Federal/OSHA standards)	4.62	0.69	PM
Assess and evaluate student performance	4.55	0.60	T&L
Integrate life skills into the curriculum	4.51	0.64	T&L
Integrate writing standards into the CTE curriculum	4.49	0.66	T&L
Integrate math standards into the CTE curriculum	4.48	0.72	T&L
Integrate reading standards into the CTE curriculum	4.47	0.73	T&L
Design & develop digital-age learning experiences	4.44	0.64	T&L
Utilize productivity software (word processing, spreadsheets, presentation software)	4.44	0.66	T&L
Provide guidance & career exploration activities to students	4.42	0.66	PM
Develop performance based assessment instruments	4.42	0.85	T&L
Develop relations with fellow teachers and administrators	4.41	0.72	PM
Teach learning disabled students	4.39	0.81	T&L
Integrate science standards into the CTE curriculum	4.38	0.84	T&L
Integrate technology standards into the CTE curriculum	4.38	0.69	T&L
Conduct parent/teacher conferences	4.36	0.74	PM
Teach using experiments	4.35	0.76	T&L
Promote and model digital citizenship and responsibility	4.30	0.73	T&L
Embed graduation standards into the CTE curriculum	4.30	0.78	T&L
Knowledgeable of issues involved with traveling with students	4.29	0.84	PM
Organize and supervise teaching laboratories	4.28	0.77	T&L
Use non-computer technology in teaching	4.26	0.78	T&L
Keep current with program related trends & issues	4.26	0.89	PM
Evaluate a CTE program	4.26	0.67	PM
Teach gifted and talented students	4.26	0.84	T&L
Develop curriculum-based School-to-Work and/or School-to-Career activities	4.23	0.86	PM
Identify appropriate course textbooks, references, and materials.	4.23	0.67	PM
Use multimedia equipment in teaching	4.23	0.75	T&L
Use digital tools for blended instruction	4.22	0.71	T&L
Determine CTE program content for specific courses	4.21	0.86	PM

Design & develop digital-age learning assessments	4.19	0.87	T&L
Use digital tools to facilitate student learning, creativity, and innovation	4.15	0.85	T&L
Recruit/promote student involvement with Career-Technical Student Organizations (CTSOs)	4.14	0.83	PM
Develop public relations program	4.12	0.84	PM
Understand Career Clusters & Programs of Study / Pathways	4.12	0.74	PM
Understand federal (Perkins), state, and local funding	4.09	0.89	PM
Complete reports for local and state agencies	4.05	0.96	PM
Coordinate activities with local organizations/agencies	4.01	0.81	PM
Establish & use a program advisory committee	4.00	0.87	PM
Use digital tools for face-to-face instruction	4.00	0.93	T&L
Use digital tools for on-line instruction	3.96	0.83	T&L
Utilize database software (e.g., MS Access)	3.94	0.89	T&L
Conduct a needs assessments to determine Programs of Study / Pathways	3.87	0.85	PM
Integrate CTSO activities into the regular classroom	3.86	0.92	PM
Plan and conduct student field trips	3.84	0.95	PM
Utilize website development software	3.84	0.94	T&L
Establish and organize co-op/internships	3.78	0.93	PM
Utilize graphic design & publishing software	3.77	0.85	T&L
Grant writing & funding opportunities	3.65	0.91	PM
Fundraise for Career-Technical Student Organizations (CTSOs)	3.45	0.99	PM
Conduct an adult program	2.75	1.13	PM

[a]Scale of 1=Not Important, 2=Little Importance, 3=Somewhat Important, 4=Important, 5=Very Important.
[b]T&L = Teaching and Learning, PM = Program Management.

Research Question 3: What is the perceived level of competence of Idaho CTE teachers in regards to the specific concepts related to teaching, learning, and managing a CTE program as perceived by superintendents?

Perceptions held by superintendents about the competence level of their CTE teachers in regards to the teaching and learning and program management items are found in Table 4. The items with the highest mean scores were *Teach Proper Safety Attitudes in the Classroom, Teach Proper Safety Practices in the Lab, Conduct Parent/Teacher Conferences, Classroom Management,* and *Knowledgeable of issues involved with traveling with students.* Superintendents perceived teachers to be least competent in their ability to *Conduct an Adult Program.*

Table 4

Superintendents' Perceptions of CTE Teacher Competence for Teaching, Learning, and Program Management Items (n= 78)

Item	M [a]	SD	Category
Teach proper safety attitudes in the classroom	4.24	0.82	T&L
Teach proper safety practices in the lab	4.15	0.85	T&L
Conduct parent/teacher conferences	4.09	0.93	PM
Classroom management	4.04	0.99	T&L
Knowledgeable of issues involved with traveling with students	3.96	0.97	PM
Develop and maintain required safety standards (State and Federal/OSHA standards)	3.96	0.94	PM
Plan and conduct student field trips	3.88	0.95	PM
Utilize productivity software (word processing, spreadsheets, presentation software)	3.87	0.87	T&L
Develop relations with fellow teachers and administrators	3.87	0.95	PM
Teach students to think critically and creatively	3.78	0.93	T&L
Identify appropriate course textbooks, references, and materials	3.78	0.92	PM
Integrate life skills into the curriculum	3.76	0.84	T&L
Teach problem-solving & decision-making skills	3.76	0.91	T&L
Assess and evaluate student performance	3.74	0.97	T&L
Motivate students to learn	3.73	0.98	T&L
Use non-computer technology in teaching	3.71	0.94	T&L
Organize and supervise teaching laboratories	3.70	0.95	T&L
Teach using experiments	3.65	0.88	T&L
Teach learning disabled students	3.64	0.94	T&L
Keep current with program related trends & issues	3.64	0.89	PM
Determine CTE program content for specific courses	3.63	0.96	PM
Complete reports for local and state agencies	3.60	1.05	PM
Develop performance based assessment instruments	3.57	0.94	T&L
Promote and model digital citizenship and responsibility	3.55	0.94	T&L
Provide guidance & career exploration activities to students	3.55	0.88	PM
Use multimedia equipment in teaching	3.54	0.92	T&L
Integrate technology standards into the CTE curriculum	3.54	0.88	T&L
Design & develop digital-age learning experiences	3.51	1.01	T&L
Evaluate a CTE program	3.49	0.85	PM
Integrate science standards into the CTE curriculum	3.47	0.95	T&L
Teach gifted and talented students	3.46	1.00	T&L
Recruit/promote student involvement with Career-Technical Student Organizations (CTSOs).	3.45	0.98	PM
Embed graduation standards into the CTE curriculum	3.44	0.95	T&L
Establish & use a program advisory committee	3.43	1.03	PM
Integrate math standards into the CTE curriculum	3.41	0.92	T&L
Use digital tools for blended instruction	3.41	0.97	T&L
Understand Career Clusters & Programs of Study / Pathways	3.39	0.91	PM
Understand federal (Perkins), state, and local funding	3.38	1.01	PM

Topic		Category
Use digital tools to facilitate student learning, creativity, and innovation	3.31 1.04	T&L
Integrate writing standards into the CTE curriculum	3.30 1.04	T&L
Develop curriculum-based School-to-Work and/or School-to-Career activities	3.29 0.98	PM
Design & develop digital-age learning assessments	3.27 0.98	T&L
Utilize database software (e.g., MS Access)	3.26 1.05	T&L
Coordinate activities with local organizations/agencies	3.26 0.86	PM
Integrate reading standards into the CTE curriculum	3.25 1.06	T&L
Use digital tools for face-to-face instruction	3.25 0.88	T&L
Fundraise for Career-Technical Student Organizations (CTSOs)	3.24 0.91	PM
Develop public relations program	3.21 1.11	PM
Use digital tools for on-line instruction	3.19 1.03	T&L
Integrate CTSO activities into the regular classroom	3.19 0.93	PM
Conduct a needs assessments to determine Programs of Study / Pathways	3.16 0.91	PM
Utilize graphic design & publishing software	3.13 0.97	T&L
Establish and organize co-op/internships	3.12 1.02	PM
Utilize website development software	3.09 1.03	T&L
Grant writing & funding opportunities	2.87 0.99	PM
Conduct an adult program	2.86 1.25	PM

[a]Scale of 1=Not Competent, 2=Little Competence, 3=Somewhat Competent, 4=Competent, 5=Very Competent.

Research Question 4: What are Idaho CTE teacher professional development priorities as perceived by superintendents?

Superintendent perceptions of secondary Idaho CTE teachers' professional development priorities can be found in Table 5. Using the *MWDS, Integrate Reading Standards into the CTE Curriculum, Integrate Writing Standards into the CTE Curriculum, Motivate Students to Learn, Integrate Math Standards into the CTE Curriculum*, and *Teach Students to Think Critically and creatively* were the five highest rated items. All five of these items were from the teaching and learning category. The highest rated program management items were *Develop Curriculum-Based School-to-Work and/or School-to-Career Activities*, ranked eighth, and *Provide Guidance & Career Exploration Activities to Students*, ranked tenth.

Table 5

Idaho Superintendent Perceptions of Secondary CTE Teachers' Professional Development Priorities

Topic	Rank	MWDS[a]	Category[b]
Integrate reading standards into the CTE curriculum	1	5.50	T&L
Integrate writing standards into the CTE curriculum	2	5.36	T&L
Motivate students to learn	3	4.80	T&L
Integrate math standards into the CTE curriculum	4	4.77	T&L
Teach students to think critically and creatively	5	4.71	T&L

Teach problem-solving & decision-making skills	6	4.18	T&L
Design & develop digital-age learning experiences	7	4.15	T&L
Develop curriculum-based School-to-Work and/or School-to-Career activities	8	4.01	PM
Integrate science standards into the CTE curriculum	9	3.99	T&L
Provide guidance & career exploration activities to students	10	3.90	PM
Design & develop digital-age learning assessments	11	3.87	T&L
Develop public relations program	12	3.69	PM
Embed graduation standards into the CTE curriculum	13	3.68	T&L
Assess and evaluate student performance	14	3.63	T&L
Develop performance based assessment instruments	15	3.60	T&L
Use digital tools for blended instruction	16	3.53	T&L
Use digital tools to facilitate student learning, creativity, and innovation	17	3.45	T&L
Integrate life skills into the curriculum	18	3.41	T&L
Teach gifted and talented students	19	3.38	T&L
Evaluate a CTE program	20	3.27	PM
Teach learning disabled students	21	3.25	T&L
Promote and model digital citizenship and responsibility	22	3.23	T&L
Use digital tools for on-line instruction	23	3.19	T&L
Use digital tools for face-to-face instruction	24	3.17	T&L
Develop and maintain required safety standards (State and Federal/OSHA standards)	25	3.10	PM
Coordinate activities with local organizations/agencies	26	3.04	PM
Teach using experiments	27	2.99	T&L
Understand Career Clusters & Programs of Study / Pathways	27	2.99	PM
Utilize website development software	29	2.92	T&L
Understand federal (Perkins), state, and local funding	30	2.88	PM
Use multimedia equipment in teaching	31	2.87	T&L
Recruit/promote student involvement with Career-Technical Student Organizations (CTSOs)	31	2.87	PM
Grant writing & funding opportunities	33	2.86	PM
Classroom management	34	2.83	T&L
Conduct a needs assessments to determine Programs of Study / Pathways	35	2.80	PM
Teach proper safety practices in the lab	36	2.78	T&L
Utilize database software (e.g., MS Access)	37	2.71	T&L
Keep current with program related trends & issues	38	2.66	PM
Integrate CTSO activities into the regular classroom	39	2.57	PM
Organize and supervise teaching laboratories	40	2.56	T&L
Establish and organize co-op/internships	41	2.52	PM
Determine CTE program content for specific courses	42	2.44	PM
Utilize productivity software (word processing, spreadsheets, presentation software)	43	2.43	T&L
Utilize graphic design & publishing software	44	2.42	T&L
Teach proper safety attitudes in the classroom	45	2.38	T&L

Develop relations with fellow teachers and administrators	45	2.38	PM
Use non-computer technology in teaching	47	2.30	T&L
Establish & use a program advisory committee	48	2.29	PM
Complete reports for local and state agencies	49	1.95	PM
Identify appropriate course textbooks, references, and materials	50	1.74	PM
Knowledgeable of issues involved with traveling with students	51	1.35	PM
Conduct parent/teacher conferences	52	1.15	PM
Fundraise for Career-Technical Student Organizations (CTSOs)	53	0.72	PM
Plan and conduct student field trips	54	-0.10	PM
Conduct an adult program	55	-0.29	PM
Integrate technology standards into the CTE curriculum	56	-2.54	T&L

[a]Mean Weighted Discrepancy Score.
[b]T&L = Teaching and Learning, PM = Program Management.

Conclusions

The quality of student achievement is related to the quality of the teacher, and the teacher is the most important variable in the classroom (Knowles, 1980). Student learning outcomes are indicative of a teacher's abilities and competence. Relevant training and professional learning opportunities are necessary for educators to improve the quality of instruction, including those in CTE classrooms and laboratories. As the educational leader of a school district, the superintendent has a responsibility to help provide learning opportunities for school personnel, including building level administrators and teachers (Hoyle et al., 2005). Identifying professional development needs for teachers is a part of the national CTE research agenda (Lambeth et al., 2008), and superintendents play an important role in professional development needs assessment (Wilmore, 2008).

The Borich (1980) needs assessment model was employed in this study to compare superintendents' and CTE teachers' perceptions of teachers' competencies and professional development needs. Findings indicated integrating core subjects with CTE courses was a top priority, demonstrating a consistent theme within the ten highest rated topics. Superintendents in this study also rated items related to the integration of core subjects into CTE courses as the top professional development priorities, supporting the belief that CTE programs can be used to delivery and reinforce academic content.

Implications

Findings from this study may help inform professional development planning for Idaho secondary CTE teachers. The process of corroborating perceptions of superintendents and teachers may increase credibility of results and provide a foundation for discussing teacher competencies and professional development needs. Information from key findings may be used to establish benchmarks for program improvement.

Findings from this study may provide insights for administrators and teachers as they prepare for implementation of Common Core State Standards (2010). A current national trend is to improve reading and writing through CTE content, and many states require content area reading courses for teacher certification. In support of this trend, professional learning

opportunities for student motivation, critical and creative thinking skills, and problem solving and decision-making skills were perceived as a need by the superintendents who participated in this study. Educators may use these findings to discuss implications for further improvement in training and professional growth to advance professional competencies associated with teaching higher order thinking skills.

Over the past couple of decades, CTE teachers have been encouraged to integrate core subjects into curricula with science and math being the most notable. In the current atmosphere of high stakes testing for measuring student achievement, findings reported superintendents demonstrated a lower priority placed on career exploration and preparation, which has been a traditional function of a CTE program. Superintendents reported the highest rated program management topics as developing curriculum-based school-to-work and school-to-career activities and providing guidance and career exploration activities to students. Looking at CTE teachers' perceptions in the aggregate, funding has consistently been found to be the highest program management priority (Cannon, et al., 2013). In comparison, superintendents placed a lower priority on funding related topics. "Understand federal (Perkins), state, and local funding" and "grant writing and funding opportunities" were ranked 30th and 33rd respectively. Findings from this study may prompt conversations relating to resources such as funding and providing necessary training to advance teachers' skills for managing CTE programs.

Recommendations

The *MWDS* scores for program management items were noticeably lower across the board for superintendents as compared to CTE teachers in previous research. A question for further study would be to explore possible reasons for this difference. Are school leaders so focused on academic achievement that the traditional view of a vocational program being the classroom/laboratory, CTSOs, and supervised experience programs are no longer in vogue? Or, do the current administrators lack an understanding of the components of the total CTE program? Are revisions for school leadership preparation needed to improve the understanding of the purpose of American career and technical education at the secondary level?

Idaho is one of 46 states currently implementing Common Core State Standards (CCSS, 2010). CCSS focus more on the process of learning that contributes to the development of higher ordered thinking skills. Similarly, CTE teachers as a whole have identified critical and creative thinking skills and motivating students to learn as in-service priorities (Cannon et al., 2012). Integration of core subjects with CTE curriculum may provide an opportunity for school districts to achieve desired student learning outcomes for CCSS.

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