© *Journal of Interdisciplinary Studies in Education*
ISSN: 2166-2681 Volume 1, Issue 1, 2012
http://isejournal.org/

Analysis of Educators' Perceptions Regarding Career and Technical Education, Academic Content, and Blended Curricula

Kimberley Handy
Richard Braley

Walden University (USA)

Abstract

Career and technical education (CTE) and academic content (AC) curricula are often perceived as conflicting*; however, research indicates that a blend of CTE and AC maximizes students' benefits. This study identified and categorized educators' perceptions of CTE and AC curricula in a large school district. Data from the survey and interview responses were transcribed, sorted, coded, and analyzed. The results indicated that educators realized the importance of an individualized teaching approach. Additionally, educators described the importance of blending CTE and AC, as well as obstacles to integration of the curricula. The barriers educators' perceived to integrating curricula affected the blending of curricula in classrooms. By providing the school district with research-based curricula improvements, students maximize earning, learning, and employment potentials.*

Keywords: *Career and Technical Education, Academic Content, Blended Learning, Educators' Perceptions*

Background

Career and Technical Education (CTE) and Academic Core (AC) curriculum components may be perceived as conflicting or separate at many public schools. According to Zirkle (2004), CTE teachers emphasize developing technical skills while AC teachers focus on teaching math, science, and language arts. There exists very little overlap between these two groups, with each group of teachers focusing on a relatively narrow subject matter (Zirkle, 2004). With this clear distinction in roles, there may be a conflict in how CTE and AC teachers address the needs of the school to

prepare students to join business, industry, and postsecondary education.

The CTE curriculum strives to produce a well-rounded education that links theoretical, individual thoughts with active group activities (Bray, 2009). After a significant decrease in vocational courses during the 1980s and 1990s, CTE curricula are again increasing in prevalence (Plank, 2001). These programs will likely play a major role in shaping the future United States workforce, as the projected numbers of jobs in health care, technology, and social justice fields continue to rise (Gordon, 2008). In spite of these benefits, CTE programs may be perceived as inferior to the AC educational track or as only suitable for students who are unable to fulfill the requirements of the academic curriculum (Lewis, 2001; Gordon, 2008).

The AC, or college preparatory, curriculum focuses primarily on math, science, and language arts. An increasing proportion of students now pursue postsecondary education, so the number of students in the AC track (or dual AC/CTE track) is also increasing (Plank, 2001). In the state of Alaska, where this study was conducted, standards of learning (SOL) have led to the adoption of a more academically based curriculum because most SOL objectives focus on academic courses, as opposed to vocational, CTE taught courses (Alaska State Board of Education and Early Development, 2006).

Many educators in the Anchorage School District do not incorporate both AC and CTE components into their classroom plans. It is thought that educators' perceptions about these curricular areas may be partially responsible for the absence of blended components from courses. While educators' perceptions have not yet been thoroughly described, anecdotal evidence suggests that some faculty may view CTE as unhelpful for students bound for postsecondary education.

As educators strived to balance the goals of academic learning and real world experiences, a separation between AC and CTE curricula emerged, often to the detriment of students' learning (Stern, 2009). More recently, studies have identified the benefits of the combined use of those curricular approaches: students who learn through a combination of AC and CTE components have higher achievement levels and are more likely to graduate (Plank et al., 2008). A balanced curriculum, connecting both AC and CTE components, may provide the greatest benefit to students, educators, and the entire community.

Although a balanced approach to education makes intuitive sense, identifying or quantifying the success of any curricular approach is difficult. In many cases, the perception of a program's effectiveness is important to measuring that program's success (Corbell, Reiman, & Nietfeld, 2008). An understanding of the perceptions of the stakeholders in the school community is necessary before informed decisions can be articulated about how to improve, fully integrate, or harmonize AC and CTE curricula to benefit all students. In the school district where this study took place, a blended curricular combination could further benefit administrators interested in harmonizing their school's curricula. Curricula harmonization occurs when teachers, administrators, and counselors understand both AC and CTE curricula and work together to unite the content, such that the students can benefit from the strengths of each curriculum.

Problem Statement

In spite of the research-based benefits of a blended curricular approach (Plank, 2001), mutual support between AC and CTE curricula does not occur at all levels or in all classrooms. Such unbalanced instruction can negatively impact student learning in academic and vocational courses, leading to reduced achievement and increased dropout rates

(Gordon, 2008; Plank, 2001; Plank et al., 2008; Stern, 2009). The type and quality of instruction that a secondary student receives is influenced by top-down (e.g., state or federal) guidelines and the administrators' interpretation and implementation of those guidelines. The teachers then adapt the administrators' curricula recommendations to their own classrooms and teaching methods. In addition, counselors advise students on course selection and career paths.

In each of the steps and for each stakeholder, personal perceptions and values can influence pedagogical outcomes. Each stakeholder has some degree of flexibility in educational approach; decisions to balance education are partially personal, based on an individual's perceptions and values. Administrators who see little value in a balanced curriculum may not demand that faculty incorporate different components into their curricula. For instance, a counselor who believes that hands-on experience is important may encourage students to participate in experiential learning courses or internship opportunities. Likewise, a teacher who is focused on traditionally academic subjects may exhibit an unintentional bias toward college-bound students. If a district hopes to move toward a balanced and blended curriculum, it is important to evaluate the perceptions of all of the individuals who play a role in students' educational processes (Chartrand & Bargh, 1999; Dijksterhuis & Bargh, 2001; Georginia & Hosford, 2009).

Nature of the Study

The perceptions of teachers, counselors, and administrators in the Anchorage School District related to AC, CTE, and blended curricula were unknown. To gain a better understanding of stakeholder perceptions, a qualitative study was designed to examine the perceptions of participants in each of six studied groups. Qualitative research was used because it presented an opportunity to explore unique strategies of inquiries (Creswell, 2003). Analysis involved the utilization of surveys and face-to-face interviews to explain, interpret, and analyze the essence of a group over time, in terms of the group's shared beliefs, behaviors, and language.

The study was comprised of AC teachers, counselors, and administrators and CTE teachers, counselors, and administrators in the Anchorage School District. This study incorporated interviews and surveys to achieve a holistic view of the perceptions of AC and CTE. An online survey was sent to teachers (N=54), counselors (N=32), and administrators (N=24) employed in the Anchorage School District during the 2011-2012 school year. The survey questions encouraged deep, thoughtful responses; participants were able to give their perceptions on learning styles, pedagogical knowledge on how to incorporate both CTE and AC in the classroom, the characteristics of a CTE or AC student, the lack of integration, and possible goals of integrating more CTE and AC into the classroom. Table 1 lists the survey questions used.

All faculty members who received the survey were familiar with at least one of the two curricular components being studied, ensuring that participants had sufficient insight into AC or CTE programs. Researchers assumed that respondents were representative of all potential participants, regarding gender, ethnicity, and demographic characteristics. From the survey participants, a random subsample was selected to participate in one-on-one, face-to-face interviews. The interview questions are outlined in Table 2.

Table 1

Questions Used in Qualitative Survey

Question Number	Survey Question
1	Describe a typical student in the CTE curriculum, including his or her strengths and weaknesses and postsecondary path.
2	Describe a typical student in the AC curriculum, including his or her strengths and weaknesses and postsecondary path.
3	Describe a typical CTE class period, including activities, content, rigor, learning, and engagement.
4	Describe a typical AC class period, including activities, content, rigor, learning, and engagement.
5	If you were on a college admissions board, would you be more likely to admit a CTE student or an AC student? Why?
6	If you were an employer, would you be more likely to hire a CTE student or an AC student? Why?
7	To what extent do you think CTE and AC should be integrated and balanced? Why do you think this?
8	Describe a curriculum that would best prepare students for the future. What aspects of instruction do you view as most valuable to the student?
9	To what extent do you think CTE and AC are currently integrated and balanced? Why do you think this?
10	What are some instructional areas (e.g., math, English, etc.) that you feel CTE and AC support each other? What are some examples of this?
11	What instructional areas (e.g., math, English, etc.) do you see the least mutual support between CTE and AC components? What are some examples of this?
12	What are some obstacles to achieving a balanced curriculum with both CTE and AC components? What are some potential solutions to these problems?

Table 2

Questions Used for Interviews

Question Number	Interview Question
1	Expand -To what extent do teachers, counselors, and administrators in Academic Core (AC) programs and Career and Technology Education (CTE) programs perceive AC and CTE curricula to be mutually supportive or mutually exclusive as separate curricula?
2	Expand -To what extent do teachers, counselors, and administrators in AC and CTE programs see value in an integrated and balanced curriculum?
3	Expand -What are the perceived barriers to the integration and harmonization of AC and CTE curricular areas?
4	Expand -To what extent do you think CTE and AC should be integrated and balanced? Why do you think this?
5	Expand -What are some instructional areas (e.g., math, English, etc.) that you feel CTE and AC support each other? What are some examples of this?

The grounded theory approach, in which hypotheses were developed after analyzing data, rather than a priori, was used to evaluate participants' survey and interview responses. This approach provided more freedom to explore themes and perceptions, particularly with qualitative and narrative data. Both the surveys and the interviews provided a qualitative view of respondent perceptions, as viewed through the lens of perceptual control theory (PCT) (Zhao & Cziko, 2001). The survey questions were broken down into categories based on the respondent's feedback on perceptions, goals, and actions of CTE and AC in the Anchorage School District. Information was derived from the survey questions and face-to-face interviews, and data were sorted, coded, and analyzed.

Conceptual Framework

At the Anchorage School District, two curricula had been developed to comply with Alaska educational standards:

student knowledge-based needs for entry into the workforce and for entry into postsecondary education. The two curricula had each developed groups of supporters, causing divisiveness among stakeholders. Both curricula were founded on differing frameworks and had conflicts in value, purpose, and degree to which each strengthened or supported the other.

Study Results

This study described educators' perceptions of AC and CTE curricula and identified common themes among groups. The results indicated how educators perceived such items as the strengths and weaknesses of typical CTE and AC students, content rigor, learning styles, hiring processes of a CTE or AC student, and integration of and obstacles to a blended learning environment. Through qualitative analysis of the data, participants' perceptions emerged as three themes: (a) individualized approach, (b) importance of blended learning, and, (c) obstacles to integration.

Theme 1: Individualized Approach

Educators came to the realization that all students are different and must be taught according to their unique needs and abilities. Survey and interview responses indicated that educators' perceptions are a critical element in an AC classroom, affecting learning, engagement, and teaching approaches. CTE classrooms involved more problem solving activities and real world experiences. By reflecting on their students, teaching methods, and classroom environments, participants realized that, although both AC and CTE curricula have advantages, the inherent difference between each student requires a more blended and dynamic instruction.

Theme 2: Importance of Blended Learning

Educators realized the importance of ensuring that all students have opportunities to learn, not only from academic content but from hands-on learning as well. Responses to survey and interview questions indicated that participants were supportive of a blended learning environment and that an ideal classroom environment would incorporate both AC and CTE. Educators realized that by teaching a curriculum that emphasizes both hands-on learning and academic content, students would have a more valuable learning experience.

Theme 3: Obstacles to Integration

Educators reflected on their

teaching environment, thereby realizing the obstacles to integrating AC and CTE. Participants expressed concerns regarding finding balance between CTE and AC, time commitments, and standardized testing that would hinder teachers from incorporating both AC and CTE into the classroom. Participants also proposed means of overcoming the perceived obstacles to integration of AC and CTE.

Survey and Interview Findings

Responses to the survey and interview questions were grouped into the three previously mentioned themes. This section elaborates the participants' survey and interview responses, illuminating how the themes were derived from the qualitative data.

Overall, the participants ruminated on the applied strategies for integration of AC and CTE in the classroom. Many increased their knowledge of the importance of having a blended learning environment. As they discussed strategies in the surveys and during face-to-face interviews, participants increased their content and CTE knowledge. As part of their reflection, many noted the blended learning environment also enhanced their pedagogical knowledge, particularly in the areas of their respective curricula. The participants and researchers found the blending of the surveys and face-to-face interviews provided a venue to share classroom knowledge and resources for developing a learning environment. A common theme emerged from the interviews in that it is a laudable goal to want a blended learning environment but that implementing the two will definitely take time and commitment.

Theme 1: Individualized Approach

As to the first theme, individualized approach, teachers, counselors, and administrators in AC and CTE programs came to the realization that each student must be taught according to his or her needs and abilities. Specifically, participants responded that, regarding the strengths and weaknesses of CTE students, many of them (a) followed certain career paths, (b) were sometimes academically unsuccessful, (c) were students who appreciated a hands-on learning environment, and, (d) were usually technology driven.

Alternatively, respondents described a typical AC student as one who (a) was academically driven, (b) spent more time on content than on theory, (c) had a strong sense of basics such as math and English, and, (d) had more divergent academic interests and capabilities. Some participants stated that AC students would have the more well-rounded skills necessary for success in college and were more college-oriented; however, others believed that the likelihood of an AC student or a CTE student being admitted to college varied tremendously, depending on the student's performance in school and the community, as well as the student's future goals.

As to what attributes of CTE or AC students would be more preferential to future employers, many responded that the CTE student would have more of the necessary skills. Other respondents thought the necessary skills for employment depended upon the field or business; the student with CTE skills, as far as computer knowledge or auto mechanical background, may not be the right fit for a retail sales position.

In comparing CTE and AC classroom environments, respondents described a typical CTE class period as (a) not very academically rigorous, (b) containing more hands-on instruction, (c)

dealing with more real world scenarios, and, (d) more geared toward a visual learner. In contrast, many respondents described that directional instructions were essential in a typical AC class, and the instructional process should include writing assignments and hands-on projects. Further, the subject matters in AC curricula were often broader and less focused than those in a CTE classroom environment.

Echoing the importance of the first theme, creating an individualized approach to learning, Participant 2 noted the importance of going back to the basics and not taking too many students in the same direction, despite their obvious cognitive differences. Another participant (7) described how CTE and AC are used in a special education classroom, mentioning the importance of using a blended learning environment for everyone:

> The cognitively impaired student often times will go to the ACE program, which is Alternative Career Education. It is a postsecondary program, offered through the school district that focuses just basically on life skills. So they have job placement there. I think there are like 18 or 20 sites in Anchorage where kids work…. They have quite a few different ones. When they start out, … they'll give them small jobs on campus, you know, like snow removal or janitorial kinds of things, which they do probably 3 hours, two or three times a week. And then classes are geared towards life skills. They teach them to ride the city bus; they can study how to get a driver's license. They, you know, get them all, you know the selective service. They do all adult things that we need to do. And again, they practice banking, you know, phone skills and things you need to do to get along in this world.

Theme 2: Importance of Blended Learning

The findings related to the second theme, the importance of blended learning, showed the extent to which teachers, counselors, and administrators in AC and CTE programs saw value in an integrated and balanced curriculum. Most participants were supportive of the integration and balance of CTE and AC programs, responding that it was favorable to have a crossover. Some respondents suggested that courses should be offered to all students, especially students who might not be exposed to a CTE class, such as those in Advanced Placement or honors classes. Further, a few participants responded that a CTE course should become a requirement for graduation. Some participants suggested that AC should take precedence over CTE but that students should be given the option to explore CTE classes. Contrastingly, several respondents felt that integration was unnecessary because many of the CTE courses were focused and AC classes were much broader; therefore, each course satisfied the students' needs in different ways.

The educators' survey and interview answers revealed that confidence in their teaching ability was high related to content, curricula, knowledge of students and educators' learning, planning, instruction, and professionalism; some participants expressed concern about their preparation for managing the learning environments and constructing effective assessments for the integration of CTE and AC in the classroom. While eager and determined to succeed in their profession,

some educators expressed that they felt unequipped to manage the learning environment for a blended learning setting.

As to the value respondents placed in a blended curriculum, participants felt that the best curriculum prepares a student for the future by allowing the student to lead the direction of the classroom. Also, increased rigor in AC classes, hands-on projects, student engagement, learning specific career related skills, and direct instruction from the teacher were attributes participants preferred in curricula.

Respondents answered questions as to how AC and CTE were applied in their classroom practices. Areas in which educators felt less accomplished were finding ways to integrate CTE and AC and finding resources and time. PCT explained why their actions and perceptions were the only variables over which they perceived control in the classroom.

Many of the participants were able to reflect on their use, nonuse, or limited use of the integration of AC and CTE in their classroom. One participant gave an example of how to integrate AC and CTE methods, commenting in the survey, "An instructor would present a problem or directions to follow in order to complete an activity. For the rest of the class period, the students would work to discover the way to solve the problem or research the information they needed to complete the task." During face-to-face interviews, participants described using kinesthetic related assignments in the classroom, giving the perception that there are many opportunities for blended learning in the curricula. Having students participate in hands-on learning allowed teachers not only to teach, but also to act as coaches, facilitators, role models, advisors, and advocates.

During one face-to-face interview, Participant 3 provided information about the perceptions of the blended environment of CTE and AC in the classroom. This individual stated that many of the students are not receiving the hands-on experiences needed for learning:

> Thanks, I think some of my overall opinions are, first of all, we're kind of brainwashed over the last 10 years that all kids are college material, all kids need to go to college, and I just don't agree with that. The more this push goes with kids, more and more I just don't agree with it because there are some kids that like learning and they're good at learning, and the classroom environment really suits them. And there are some kids that that's not true for. And it doesn't mean they're bad kids, it doesn't mean they're non-ambitious kids, it doesn't mean they don't have goals and plans and careers and stuff like that. And I think, you know, when you get the kids in class, just as they get older you just notice there's just two different kinds of kids. And there are a few in the fringe, but a vast majority falls into one category or the other. And it's just obvious [to] me the more we try to push kids in one direction that they all don't go in that direction.

This interviewee continued to elaborate on how students needed two types of learning environments and that having a mutually supportive learning environment is most beneficial to the student.

Theme 3: Obstacles to Integration

As to the idea presented by the third theme, the perceived barriers to the

integration and harmonization of AC and CTE curricular areas, participants were eager to mention obstacles associated with integration, such as (a) not enough time, (b) standardized tests, (c) limited money for textbooks, (d) not having the skills to integrate the curricula, (e) not wanting to create a balanced curriculum, (f) the need for more curricula support, and, (g) wanting more cross-curricula training. Many educators did not want to change, stating that the separation was needed to keep students interested and engaged.

Indicative of an obstacle to integrating curricula, one interviewee stated, "The only way we're possibly wrecking it is by trying to satisfy too many different people, instead of focusing on these certain skills." Participants also responded that integration is an active process, requiring their initiatives to bring balance and harmony into their personal curriculum by stressing academic language, not only in core subjects, but in CTE subjects as well. Participant 24 wrote:

> Auto Mechanics pathway, for example . . . teach them the math specific to the industry, the history of the automobile throughout the course of US history, the science of the automobile today, and technical writing skills more emphasis should be placed on hands-on learning for training that require more hands-on experience and the same for academic preparation for academic fields of study. I don't think it's very balanced. It seems to be either/or. I think it should be balanced. They are not balanced. There is too much emphasis being put on the quantity of students graduating and not the quality of education. Many students are graduating with the 22.5 credits but are not prepared for the workforce or postsecondary education. I think that Career and Technical Education and Academic Content are relatively well balanced, though not integrated. When students have to travel to another school to participate in CTE, there is little or no integration. I do not believe that they are integrated well or balanced. Again, besides technical skill careers, most students do not have access to the types of jobs that will require skills developed in the academic classroom. I think our current arrangement is pretty good. There are options for students to pursue CTE coursework/training after through . . . after school programs. Not knowing the full offering of [the local technical school], I can't speak to its diversity of options, however. In some classes, technology is used. In others, it is not. Maybe 50-70% integrated? Don't know. Not familiar with CTE curricula.

After reading many of the responses, it was easy to see the common theme that many of the participants believed that the curriculum is not balanced, and some AC teachers are not aware of any of the opportunities for CTE at their present school or the local technical school

Discrepant Cases and Nonconforming Data

Each of the study groups provided a different outlook as to how CTE and AC may be incorporated into the classroom. The CTE group believed there was not enough CTE related material in the classroom and suggested that it should be integrated into the school curricula as soon as possible. The groups also differed as to how this integration should take place;

participants from the AC group maintained that class lessons did bring some engagement with CTE into the classroom, whereas CTE participants felt that the level of experiential learning did not take place as often as they would like. AC teachers brought up the conundrum of how one incorporates CTE and AC methods into physical education and world language classes.

As to the value respondents placed on a blended curriculum, participants felt that the best curriculum prepares a student for the future by allowing the student to lead the direction of the classroom. Also, increased rigor in AC classes, hands-on projects, student engagement, learning career related skills, and direct instruction from the teacher were attributes some participants preferred in curricula.

Implications for Social Change

The findings from this study could provide a catalyst for ongoing dialogue on the subjects of CTE and AC in the classroom and in seeking ways to understand how perceptions lead to barriers in integration in both CTE and AC classrooms. Additional research is needed in this area to implement and advocate for changes in the blending of AC and CTE. The research presented above is comprised of a small portion of the many facets of CTE and AC. As instructors continue researching information, they will begin to view CTE and AC as relevant and comprehensive components in the education curriculum and enjoy the areas that have been presented but, most importantly, expand on them. Students must be exposed to both academia and vocational education in order to take full advantage of opportunities for life-long learning and success in the job market or in postsecondary education. Today, many high schools offer CTE classes that require advanced academic skills to help students make the transition to college level technical and professional studies (Dare, 2006).

CTE and AC play vital roles in increasing student achievement, student motivation, and alleviating some of the dropout rates that have continued to plague the school system thus far. There must be different pedagogical approaches to incorporating CTE and AC programs of study, which should focus on experiential learning, allowing the student to see a myriad of ways in which learning is relevant. Students themselves will then empower the change of learning toward practice and application rather than lectures and rote memorization (Gasper et al., 2007).

The role of the learner will not rely on autonomy but on collaborative learning; the student learning assessment will need to be revised and transformed into a group assessment rather than an assessment of individual work, thus allowing students to converse and participate in learning with others who share the same milieu (Anderson & Elloumi, 2004). As the school system evolves, so should options such as CTE and AC that would allow the focus of learning to return to its origin, the student. The process of learning is as diverse as a forest, but should be as humbling as one leaf. CTE and AC each has its own forest of concepts but must be handled as individually as leaves on a tree. Each area has its own idiosyncrasies and criticisms, and despite the challenges, CTE and AC must be seen as viable sources of educational support for schools and districts. Schools must become increasingly aware of the needs and skills of all students, including students preparing for college and students preparing to enter the workforce, upon

completion of high school.

Summary

Taking on any new curriculum brings with it complex changes for the educator, both in the short-term and long-term. Many factors go into the blending of CTE and AC environments, and any reform must take this complexity into consideration before involving already overburdened educators. Both groups will need to develop levels of flexibility, adaption, and willingness to work collegially with others across the curricula. Because a small population answered the survey questions and took part in the face-to-face interviews, it is also feasible to note this study does not represent the entire school system. There are numerous extrinsic and intrinsic factors in place such as (a) the educator's perceptions, (b) the current climate of the school, (c) the daunting task of student motivation, and, (d) improving student achievement.

References

Anderson, T., & Elloumi, F. (2004). *Theory and practice of online learning* (2nd ed.). Retrieved from http://cde.athabascau.ca/online_book

Chartrand, T. L, & Bargh, J. A. (1999). The chameleon effect: The perception-behavior link and social interaction. *Journal of Personality and Social Psychology, 76*(6), 893-910. doi:10.1037//0022-3514.76.6.893

Creswell, J. W. (2003). *Research design: Qualitative, qualitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Gasper, A., Langevin, S., & Boyer, N. (2007). Constructivist apprenticeships through antagonistic programming activities. *Encyclopedia of Information Science and Technology* (2nd ed.). Hershey, PA: Information Science Reference.

Gordon, H. R. D. (2008). T*he history and growth of career and technical education in America* (3rd ed.). Long Grove, IL: Waveland Press.

Lewis, M. V. (2008). Effectiveness of previous initiatives similar to programs of study: Tech prep, career pathways, and youth apprenticeships. *Career and Technical Education Research, 33*(3), 165-188. doi:10.5328/CTER33.3.165

Plank, S. (2001). *Career and technical education in the balance: An analysis of high school persistence, academic achievement, and postsecondary destinations.* National Research Center for Career and Technical Education, St. Paul, Minnesota.

Plank, S. B., DeLuca, S., & Estacion, A. (2008). High school dropout rate and the role of career and technical education: A survival analysis of surviving high school. *Sociology of Education, 81*(4), 345-370. Retrieved from 136.165.122.102/UserFiles/File/pubs/DroppingOut-Plank.pdf

Stern, D. (2009). Expanding policy options for educating teenagers. *The Future of Children, 19*(1), 211-239.

Zhao, Y., & Cziko, G. A. (2001). Teacher adoption of technology: a Perceptual Control Theory perspective. *Journal of Technology*

and Teacher Education, 9(1), 5-30. Retrieved from http://faculty.ed.uiuc.edu/gcziko/pdfpublic/zhao_y_cziko_g_a_2001_teacher.pdf

Zirkle, C. (2004). Integrating occupational and academic skills across the curriculum. Retrieved from http://eric.ed.gov/ERICWebPortal/search/detailmini.jsp?

About the Authors

Dr. Kimberly Handy holds an Ed.D. in Administrator Leadership for Teaching and Learning from Walden University. She currently teaches English and American Literature to high school students in Anchorage, Alaska.

Dr. Richard Todd Braley is an Assistant Professor of Occupational Safety and Health in the OSH Department, School of Arts and Sciences, Southern Oklahoma State University.