

## **Aligning Business and Education: 21<sup>st</sup> Century Skill Preparation**

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### **ABSTRACT**

*The purpose of this paper is to explore stakeholder perceptions concerning four key 21st century skills required for graduates to be successful in today's workplace, and to report on common themes surrounding how a post-secondary school in the Southwest United States is preparing graduates with predominant 21st Century skills: interpersonal communication, critical thinking, information literacy, and adroit writing. A qualitative exploratory case study was employed. Semi-structured interviews were conducted with 14 local employers who hire graduates, and 14 faculty members and 14 administrators from the research site. Data were coded and analyzed for common themes with the support of NVivo qualitative software. Overall, the three participant strata group stakeholders indicated that the research site is not doing very well integrating the predominant four 21st Century skills into curricula. Interpersonal communication was rated as the highest skill evident in graduates, followed by critical thinking, information literacy, and the skill needing the most improvement, adroit writing.*

**Keywords:** business education; 21<sup>st</sup> century business skills.

**JEL Classification:** I21

**PsycINFO Classification:** 3550

**FoR Code:** 1302; 1503

**ERA Journal ID#:** 35696

## Introduction

Government and business leaders are calling for reform across all academic levels especially in the collegiate arena where the greatest misalignment exists between 21st Century employer needs and university deliverables (Daggett, 2005). As business enterprises, post-secondary academic institutions have social and economic responsibilities to respective local, state, and national business communities to prepare graduates with contemporary skills needed to become productive members of society (Lehmann, 2009). The need to determine if colleges and universities are teaching and refining students with the 21st Century skills employers are demanding is imperative (Harvard, 2011; Palmer, Scribner & Zajonc, 2010).

Bushaw and Lopez (2012) found that less than 10% of high school dropouts and less than 20% of high school graduates possess 21st Century skills needed to succeed in the modern workforce. Additionally, less than 33% of high school graduates have skills necessary to enter post-secondary academic programs (Bushaw & Lopez, 2012). Americans view college graduation as the principle benchmark for workforce readiness but only 54% agreed college graduates understand and retain 21st Century skills sought after by contemporary employers (Bushaw & Lopez, 2012).

In the United States, the post-secondary educational system is in an alarming, yet silent and misaligned state of panic (Friedman, 2005). Panic in secondary educational institutions has resulted in uncaring and frustrated students, decentralized curriculum and teaching pedagogies, frustrated employers seeking graduates with 21st Century skills, and a decrease in financial support from taxpayers and philanthropic groups (Friedman, 2005). A primary area of reform involves whether or not students entering the 21st Century workforce comprehend what is required and can implement the 21st Century skills needed to flourish in the contemporary workplace (Trilling & Fadel, 2012).

## Literature Review

Preparing for a career in the 21st Century workplace involves more than the completion of a particular post-secondary degree (Correll, 2001). Students' understanding about available career paths and specific skills desired by contemporary employers should be developed during the college years (Magnuson & Starr, 2000). Post-secondary academic institutions are at least partly responsible for future success rates of graduates, as students form perceptions of the 21st Century labor market and career goals during the college years (Magnuson & Starr, 2000). Post-secondary education systems operate under a business model, which has not adapted to contemporary employment realities, concerns, and business needs (Bookman, 2010).

Institutions of higher learning have been slow to change and keep up with contemporary needs of the workforce (Palmer, Scribner & Zajonc, 2010). One of the greatest challenges for modern business management is finding and retaining qualified individuals with the 21st Century skills needed to achieve stated business goals (Kezar, 2009). A crucial element for business and educational leaders should be to align workplace needs with higher education preparation systems to promote student success in a career after graduation, rather than simply focusing on traditional academic achievements or grades (Harvard 2011).

Attending college and becoming career-ready often requires more from students than simply performing well academically (ACTE, 2014). Problem and design-based teaching methods align with individual propensities 21st Century employers are seeking (Lehmann, 2009). Cohort designed programs focusing on problem-based

experiential learning assist students with developing content knowledge in harmony with authentic, real-world problems and questions students might experience in the professional arena (Lehmann, 2009). Employability should be sustainable (Watts, 2006).

Sustainable employability refers not only to the development of skills, which would enhance opportunities when job hunting but also concerns acquiring skills to sustain employment for the long-term, or to transition into new opportunities as needed (Watts, 2006). Critics accuse post-secondary faculty members of teaching the same classes in the same manner with the same materials used for decades with no upgrades in curriculum, delivery methods, or learning objectives that align with changes in the workplace (Pietka, 2007). In short, students do not have skills needed for the modern workplace (Pietka, 2007). If 21st Century post-secondary schools are going to attract and retain quality learners, faculty must participate in workshops regarding how to connect with technology-driven students (Pietka, 2007).

These activities along with campus-wide efforts focusing on the integration of laptops, smart-phones, and other personal technology devices may place students at odds with faculty in the classroom (Pietka, 2007). Post-secondary educational institutions should consider the needs of the 21st Century world of business because success or failure of graduates is a direct reflection of the training and preparedness of the school (Taylor, 2010). If today's higher learning institutions were placing the requisites of graduates at the forefront of instructional practices, a majority of the frustrations caused by misalignment between employers, schools, and students would not exist. The future of the American workforce is lacking in 21st Century skills demanded by the modern global workforce (Casner-Lotto & Benner, 2006). Current literature identifies four highly sought after skills for the contemporary workplace including interpersonal communication, critical thinking, information literacy, and adroit writing. Given the pressures for academic reform from modern employers, students, government officials, and private and public scholarship foundations, the need to examine frontline academic stakeholder perceptions regarding the definition and classroom integration levels of the 21st Century skills should reveal prudent courses of action to address the problem (Taylor, 2010).

Global economies have shifted priorities in proficiencies needed by employees in the 21st Century (Gardner, 2011; Trilling & Fadel, 2012; Wagner, 2008). The Partnership for 21st Century Skills (P21), a collaborative created by a consortium of business leaders, (including Fortune 500 firms including Apple, Ford, Microsoft, Texas Instruments, and Verizon), departments of education, and research organizations was an initiative to develop a framework for secondary and post-secondary students to be prepared for success in the 21<sup>st</sup> century workplace (Trilling & Fadel, 2012). According to the consortium research, critical thinking and problem solving, information/digital literacy, communication and collaboration, and creativity and innovation were identified as groups of skills modern employers seek in graduates entering the workforce (Trilling & Fadel, 2012). Following an extensive review of the literature provided by the consortium, four of these skills were repetitively identified as key skills highly sought after by contemporary employers: interpersonal communication, critical thinking, information literacy, and adroit writing (Partnership, 2014; Trilling & Fadel, 2012).

Critical thinking is a way of distinguishing significant elements from insignificant data (Browne & Keeley, 1986). A critical thinker scrutinizes assumptions, detects hidden values, evaluates evidence, assesses conclusions, identifies fallacies, explores problems, asks pertinent questions, creates effective solutions, and justifies actions (Petress, 2004). If students are to become critical thinkers educators should provide opportunities for learners to express different views and to work through independent

thinking, deciphering how the views of others fit in with personal opinions (Paul, 2001).

Information literacy involves the capacity to find and appropriately apply validated and useful evidence, a 21st Century skill that is vital to modern employers (Latham & Gross, 2013). Contemporary information literacy requires using the Internet effectively to manage, access, and discern information with technology (Shana & Ishtaiwa, 2013).

Interpersonal communication is a dynamic form of communication, between two or more individuals, where the message influences thoughts, emotions, behaviors and relationships (McCornack, 2010). Individuals employing efficient interpersonal communication abilities are not only aware of family, friend, work and romantic relationship types; but can also apply competent listening, cultural sensitivity, emotional intelligent and conflict management styles across all kinds of human associations (DeVito, 2009).

Adroit writing surrounds the aptitude to transcribe language into written forms with few or no errors in spelling, grammar, syntax, flow, structure, or meaning relating to a specific topic (Mascle, 2013). A primary goal of secondary and post-secondary academic institutions is to prepare learners with fundamental scripting blocks, which would transfer later into the writing needs of 21st Century employers (Mascle, 2013). Some of the most important adroit writing implications modern employers seek include data organization, stakeholder relationships, creativity, planning, reporting, emotional intelligence, and ethics (Mascle, 2013).

## Method

The purpose of the exploratory case study was to uncover stakeholder perceptions concerning four key 21st century skills required for graduates to be successful in today's workplace, and to report on common themes surrounding how a post-secondary school in the southwest United States is preparing graduates with predominant 21st Century skills: interpersonal communication, critical thinking, information literacy, and adroit writing. An exploratory case study design was used to uncover common themes surrounding the central research question. Data collection occurred during individual semi-structured interviews using open-ended interview questions (Merriam, 2009; Shank, 2006; Yin, 2003). The study addressed the primary research question: How is a post-secondary educational institution in the southwest region of the United States preparing graduates with the top four 21st Century skills needed to succeed in the contemporary business world?

The research site was a four-year university in the southwest region of the United States. Three strata groups served as study participants: (1) local employers who hired research site graduates in the past five years (2) faculty members, and (3) administrators from the research site. Random sampling was utilized to select individual participants belonging to the larger strata populations. Lists of university faculty and administration were obtained from the research site and lists of local employers who hired graduates were obtained from the Office of Graduate Support. All three lists were edited so that none of the participants were former students, supervisors, or friends of the researcher to prevent conflict of interest or bias (Bryman, 2012). Members of each strata group (20 employers, 25 administrators, 40 faculty) were assigned a numerical value and each list was randomly sorted via Microsoft Excel functions, aligning with the operational premise of random sampling in qualitative studies (Bryman, 2012).

Following study email invitations and participant written consent, 42 semi-structured interviews took place over a 60 day period. Participants included 14 members from

each strata group. Delivering open-ended interview questions to multiple random sample strata groups provided converging lines of inquiry, yielding rich, more accurate conclusions (Yin, 2009). Field study questions were delivered during the first five interviews of each participant strata group involved in this study (Yin, 2009). The purpose of the field study was to validate the credibility of the interview questions.

The first five randomly selected subjects from each strata group read through the interview questions and answered two field test inquiries pertaining to the clarity of the interview questions and the alignment with the study purpose and primary research question (Merriam, 2009; Shank, 2006; Yin, 2009). Field study participants were treated in the same manner as other study participants in regards to human right and protection protocols. An advantage of field testing in an exploratory case study design is that it allows the field test participants to be included in the main subject groups if the responses to validity questioning are conclusive (Babbie, 2012, Merriam, 2009, Shank, 2006). All 15 field test participants in the study offered affirming responses that the interview instrument questions were clear, understandable and aligned well with the purpose and primary research question of the study (Cozby, 2009; Yin, 2009).

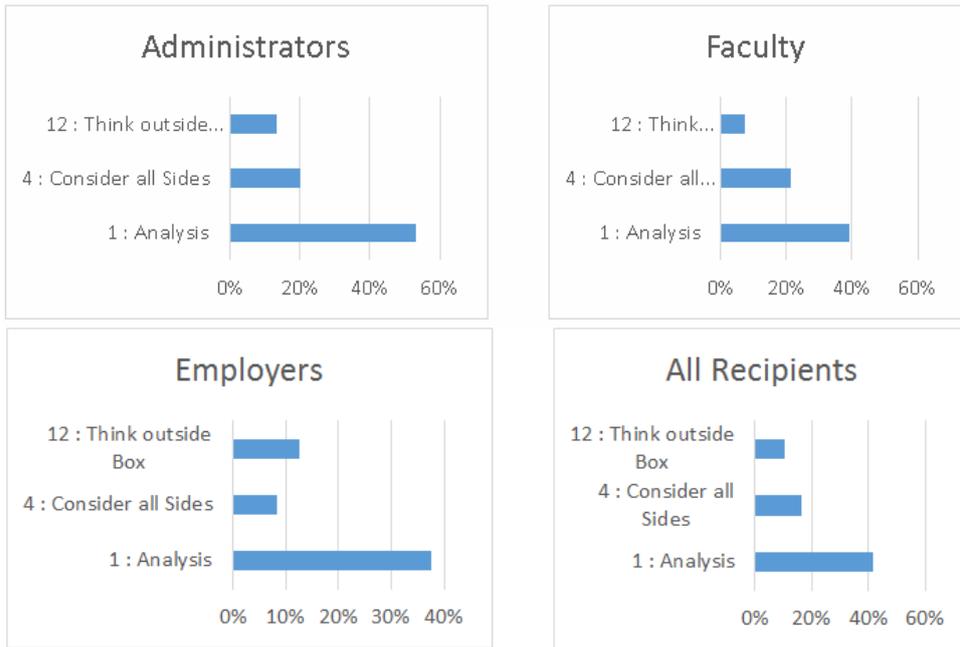
Responses obtained from 42 open-ended interviews were transcribed, scrubbed and coded into appropriate nodes utilizing the NVivo qualitative software program for thematic analysis. Nodes, or thematic bins, were created using key words and phrases mined from the literature review and aligned with the interview questions. Data collection and analysis began during the first participant interview, continued throughout all process venues, and ceased when data saturation occurred. Data saturation, when no new information pertinent to the study is revealed, (Leedy & Ormrod, 2009) occurred after 14 subject participants were interviewed from each strata group. A thorough and exhaustive exploration for common themes surrounding the primary research question took place. by comparing, contrasting, and performing regular reviews of audio files, transcribed and scrubbed documents, key words and phrases used to create nodes in NVivo and the manual coding of data into thematic bins. In this manner, the rich data obtained from the different strata group interview responses developed into relevant common themes surrounding the primary research question of the study. Several common themes directly related to the purpose and primary research question of this study emerged.

## Results

Several common themes related to graduates' 21<sup>st</sup> Century skill preparation emerged from the analyses. In the study, ten interview questions were posed to participants in three educational stakeholder strata groups including administrators, faculty and local employers hiring or interviewing research site graduates in the past five years. Odd numbered interview queries involved participants offering individual understanding of the four top 21st Century skills explored in the study. Even numbered inquiries posed to subjects surrounded thoughts and opinions on the integration levels of the predominant four 21st Century skills at the research site.

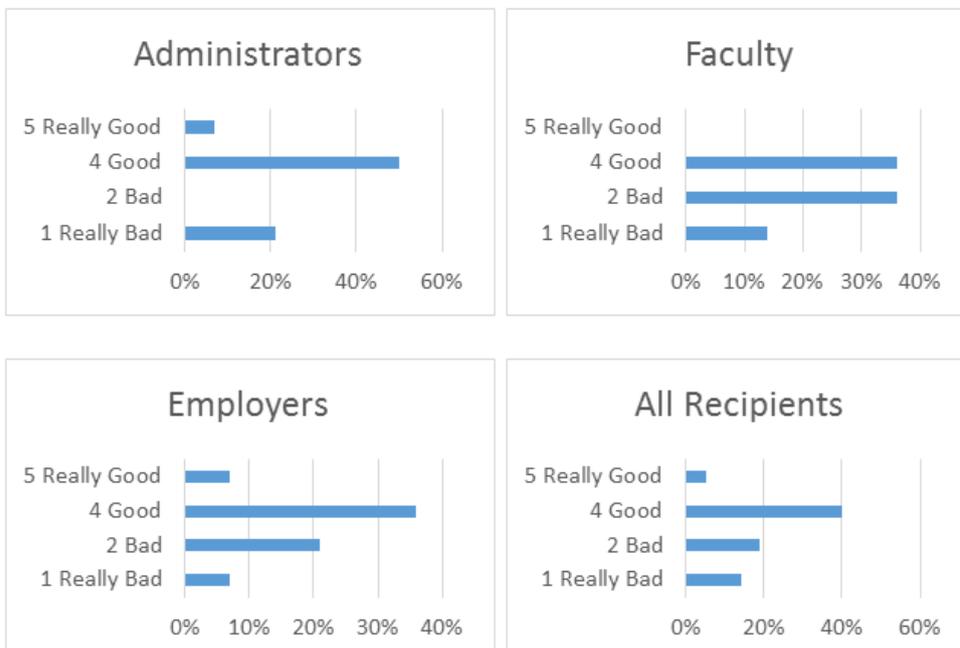
The first interview question posed to 14 employer, 14 administrator and 14 faculty member subject participants involved their perceptions to the meaning of the 21st Century skill, critical thinking. Responses included the terms analysis (42%), considering all sides (16%) and thinking outside the box (10%).

**Table 1**  
*Interview Question One - Bar Graph Illustrations*



The second interview question posed to all three subject participant groups involved their perceptions on the level of integration of the 21st Century skill critical thinking in the classroom at the selected research site (administrators and faculty members) and practiced by graduates of the site (local employers). Four themes emerged regarding subjects' perceptions of critical thinking skills integrated in the classroom, and the ability for graduates to apply the skill. Results included really bad (14%), bad (19%), good (40%) and really good (5%).

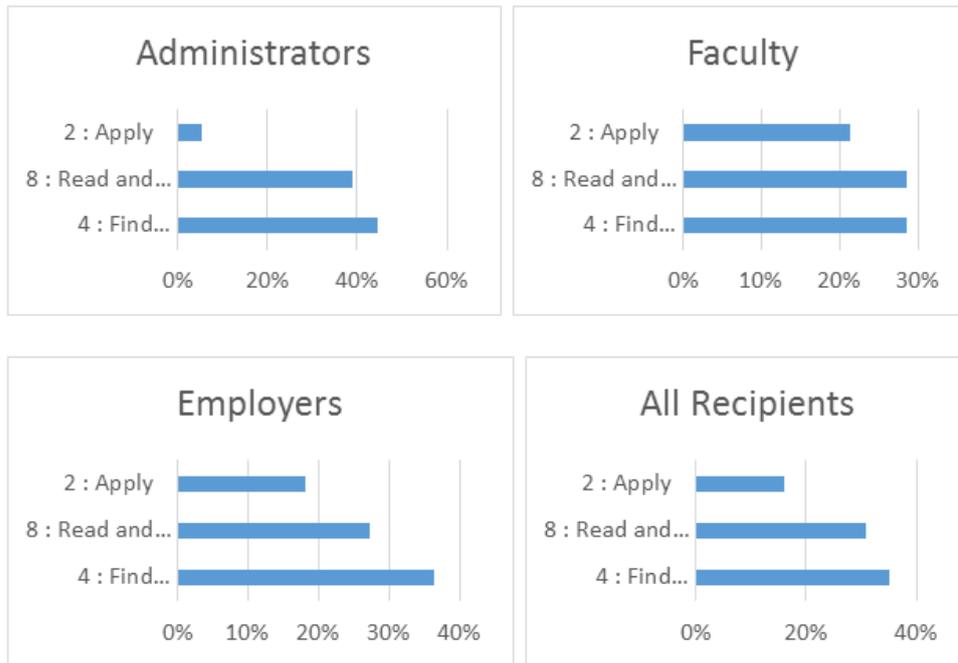
**Table 2**  
*Interview Question Two - Bar Graph Illustrations*



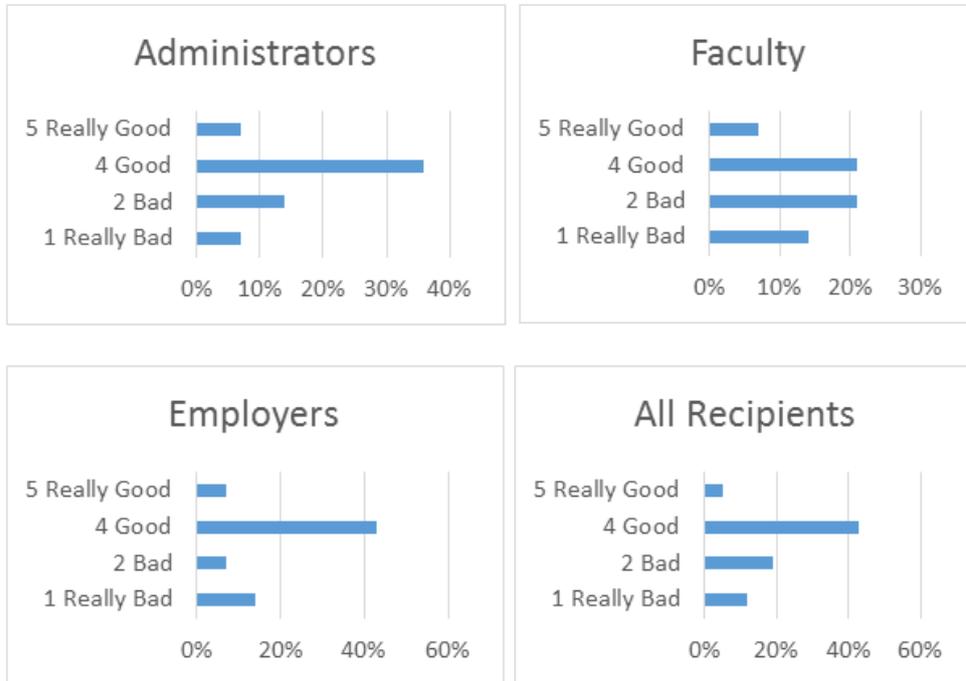
The third interview question posed to all three subject participant groups involved their perceptions to the meaning of the 21st Century skill, information literacy. Three primary themes emerged including finding (35%), reading (31%) and understanding and applying information (16%).

**Table 3**

*Interview Question Three - Bar Graph Illustrations*

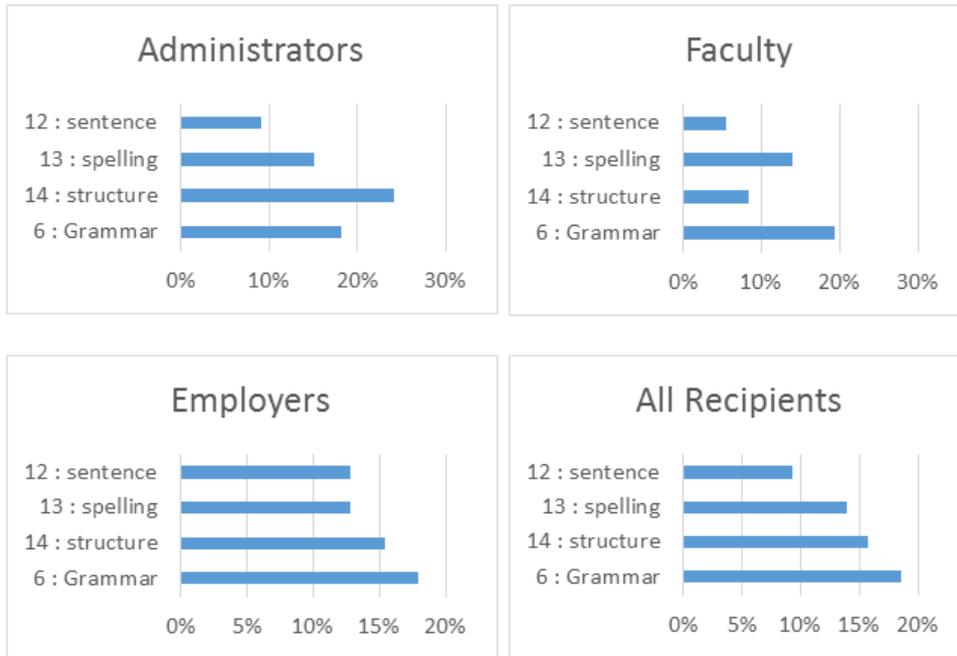


The fourth interview question posed to all three subject participant groups involved their perceptions on the level of integration of the 21st Century skill information literacy in the classroom at the selected research site (administrators and faculty members) and practiced by graduates of the site (local employers). Four themes emerged including really bad (12%), bad (19%), good (43%) and really good (5%).

**Table 4***Interview Question Four - Bar Graph Illustrations*

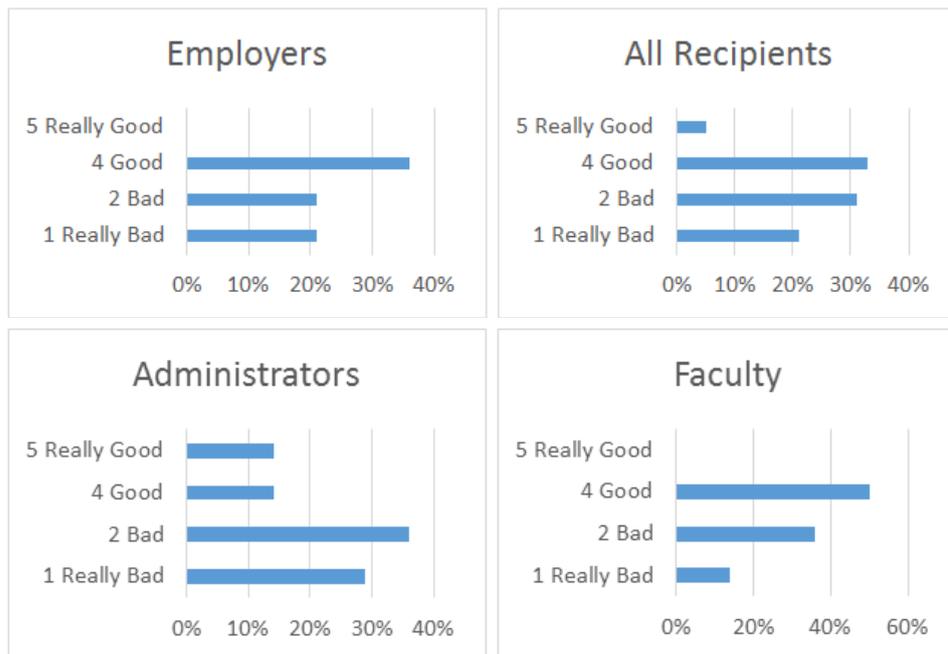
The fifth interview question posed to all three subject participant groups involved their perceptions to the meaning of the 21st Century skill, *adroit writing*. Three themes emerged including grammar (19%), spelling (14%) and sentence/structure (combined at 25%).

**Table 5***Interview Question Five - Bar Graph Illustrations*



The sixth interview question posed to all three subject participant groups involved their perceptions on the level of integration of the 21st Century skill adroit writing in the classroom at the selected research site (administrators and faculty members) and practiced by graduates of the site (local employers). Four themes regarding subject perception of information literacy in the classroom and graduates emerged including really bad (21%), bad (31%), good (33%) and really good (5%).

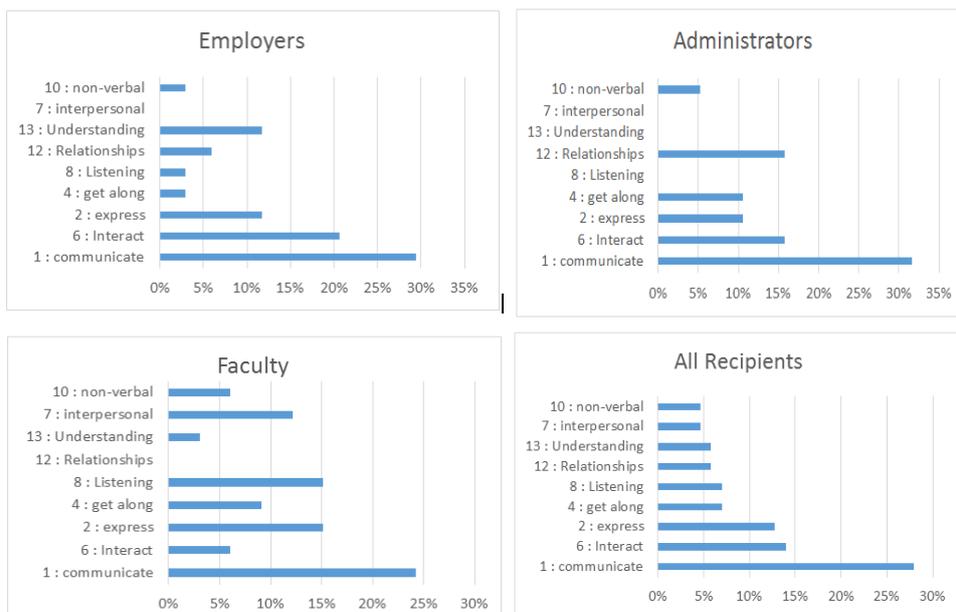
**Table 6**  
*Interview Question Six - Bar Graph Illustrations*



The seventh interview question posed to all three subject participant groups involved their perceptions to the meaning of the 21st Century skill, interpersonal communications. Three combined themes emerged including communicating and

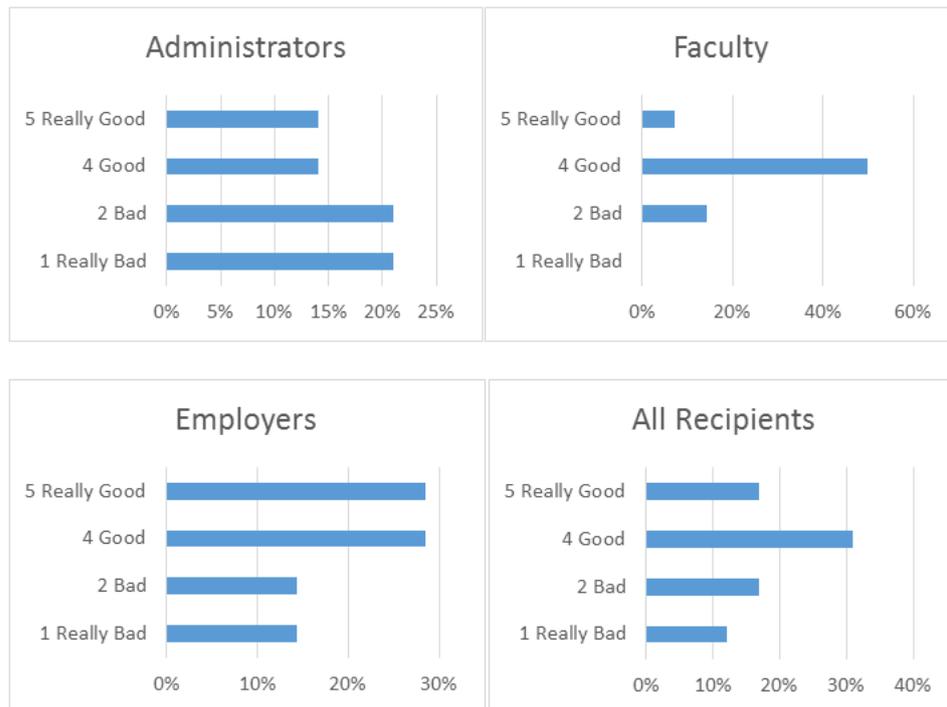
expression verbally and non-verbally (combined at 46%), interacting and getting along within interpersonal relationships (combined at 38%) and listening and understanding (combined at 13%).

**Table 7**  
*Interview Question Seven - Bar Graph Illustrations*



The eighth interview question posed to all three subject participant groups involved their perceptions on the level of integration of the 21st Century skill interpersonal communication in the classroom at the selected research site (administrators and faculty members) and practiced by graduates of the site (local employers). Table eight shows how the three strata groups rated the level of interpersonal communication at the research site including really bad (17%), bad (31%), good (17%) and really good (12%).

**Table 8**  
*Interview Question Eight - Bar Graph Illustrations*



## Conclusions

Several conclusions were evident upon a thorough review of the findings offered in the study. Overall, the three participant strata group stakeholders indicated that the research site is not doing very well integrating the predominant four 21st Century skills into curricula across campus or teaching them within classroom pedagogies. Faculty members, as stakeholders on the front line of education, rated their own research site lowest of the three groups. The administrator strata group, arguably understood as the stakeholders responsible for curricula and field of study decisions also did not grade their research site in a favorable manner. The third strata group of employers hiring research site graduates in the past five years, reasoned from a business perspective as the local customers of the research site, did not rate graduates of the research site very well regarding application of top four 21st Century skills. Another conclusion gleaned from subject interviews was that all three research site stakeholder groups seemed to care about and support the local education of higher learning that they are either employed by or depend upon for labor. Most of the subjects indicated the need for moderate to severe improvements concerning the integration of the top four 21st Century skills at the research site.

Conclusions pertaining to the individual 21st Century skills provided further information for educators and administrators. Interpersonal communication was rated the highest skill integrated into research site classrooms and evident in graduate abilities, with largely good to really good ratings from participant responses. Critical thinking followed closely with a respondent rating of good to very good, while information literacy received largely good to really good ratings from subjects. Lastly, adroit writing was indicated as the 21st Century skill needing the most improvement at the research site, whereby respondents offered mostly bad to really bad ratings. The overall respondent standpoint included conclusions pointing toward moderate to severe needs of inclusive improvement of top four 21st Century skill integration into the research site classrooms across campus. However, from an individual 21st

Century skill perspective, the majority of the moderate to severe improvements needed at the research site lay mostly within the adroit writing skill area and somewhat within the information literacy area. By contrast, critical thinking and interpersonal communication skills revealed only moderate to mild improvement needs at the research site, indicating that administrators and faculty are aware of the issues and are taking steps to address them.

Several internal and external recommendations pertaining to the post-secondary business market in the education sector developed. The primary recommendation focused on internal management of higher academics (administrators and faculty), their operational processes (curricula and pedagogies), their products (student graduates) and their end users (21st Century employers). Post-secondary academic decision makers should be keenly aware of the primary stakeholder group needs. Understanding how to develop and prepare students with the 21st Century skills needed to enter and succeed in the modern workplace should be paramount in the curricula and pedagogy decision making processes of any post-secondary institution (Trilling & Fadel, 2012). Ideally, administrators and faculty members should integrate at least top four 21st Century skills into the syllabi and pedagogies of every course offered across campus. In this manner, students will not only master particular fields of study, but will also become proficient in practical 21st Century skills. Learners should not only be assessed in every class on the specific discipline factors, but also on how to apply these skills in the workplace.

Critical to a 21st Century skill comprehensive integration plan, administrators and faculty need to clearly define how the institution will integrate, measure and monitor student mastery of the skills, and how faculty will be supported and rewarded for developing best 21st Century skill pedagogies. Each academic school and department on campus should be encouraged to develop detailed goals, assessments, and predominant 21st Century skill development opportunities pertinent within their particular fields and student needs as a part of the comprehensive plan (Lehmann, 2009). Complimenting and supporting such a comprehensive 21st Century Skill integration plan must also involve dedicated, appropriate and approved budget plans and funding to ensure success. Setting goals and informing stakeholders is a start, but providing and assigning resources demonstrates the institution is serious about actual implementation and support (ACTE, 2014; Partnership, 2014; Trilling & Fadel, 2012).

The creation and appointment of a 21st Century Advisory team, including members from administrative, faculty, student and local employer stakeholder groups should oversee the comprehensive plan and accompanying budget. The purpose of a 21st Century Advisory team will be to ensure that action steps are developed collaboratively and implemented consistently, ideas are generated from varied stakeholder perspectives, and the team works together to ensure the success of the overall plan. Implementation data collected by the Advisory team could prove invaluable for plan growth and long-term sustainability, including end-of-year reporting and beginning-of-year planning.

Further recommendations include developing professional learning communities (PLCs) for administrators and faculty members to work collaboratively with employers and other education stakeholders to continue to keep current on trends and skills graduates need to be successful in the global workforce. Similarly, local faculty members and administrators should also attend local business seminars and lectures, Chamber of Commerce functions, and network in as many local activities as possible in an effort to keep a pulse on the modern needs of its community stakeholders. Through these efforts, faculty members will also have the opportunity to directly practice the 21st Century skills they seek to instill in the eager young minds they teach. Ultimately, these internal and external recommendations will help higher

education systems align more effectively with the skills contemporary employers are seeking in graduates.

The need for additional research in this field is evident. It would be prudent to further delve into the stakeholder perceptions of the causes of the graduate skill deficiencies. A quantitative survey would allow researchers to collect, compare and contrast different strata group responses to close-ended interview questions to delineate stakeholder perceptions by skills. Current students and recent graduates could also be included as a critical stakeholder group in future studies. Data triangulation, including classroom observations, archived material reviews (syllabi, course descriptors), and notes taken by researchers at administrative and other curricula meetings, could provide rich data towards findings and conclusions (Shank, 2006). Ultimately, further study in this area may assist higher education institutions with preparing students to graduate with the skills and understandings to be successful in the global workplace.

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