Managing the Growing Complexity of Administration of Academic Technology in Higher Education

JOHN NWORIE
Kent State University, USA
jxn900@yahoo.com

The academic technology units support the process of using technology and pedagogy in teaching and learning and so occupy an important position in higher education, as their functions impact the instructional mission of institutions. Similarly, the administrators who have the important function of overseeing academic technology units, manage the instructional technology resources that their institutions have heavily invested in, and direct the application of the technologies, hold an equally important position as their leadership can contribute to the effective use of instructional technologies, leading to the realization of the potentials of technology in educational institutions. While there have been frequent calls on faculty by institutional administrators to embrace the use of technology in their teaching or to adopt effective pedagogy, the administration of academic technology units is an essential component in the effective use of instructional technologies in higher education. This article examines administration of instructional technology as a support service, the position of directors of academic technology in higher education, and discusses ways institutions can support the position.

ACADEMIC TECHNOLOGY IN HIGHER EDUCATION

Academic technology support service units are not new to higher education. They have been around for a fairly long time and go by many different names. The academic technology units offer unique and important services to the college and university community. They help significantly and directly in the process of instructional improvement, in the improvement of

faculty teaching skills, and in the use of technology (Eidgahy & Bennett, 1991). Academic technology support service (ATSS) units support faculty in developing pedagogical and technological skills (Rutherford & Grana, 1995; Bourdeau & Bates, 1997; Ritchie & Hoffman, 1997; Privateer, 1999). On many campuses the ATSS units undertake the functions of: (a) developing instructional materials using the instructional systems approach; (b) consulting with faculty on designing, redesigning, or improving courses; (c) conducting training sessions on various technologies and their application in instruction; (d) providing consultation to faculty on media selection; (e) supporting distance education; and (f) providing classroom technologies to support the instructional process. Faculty members are supported by ATSS units to embrace appropriate strategies, to sustain innovations they have adopted, and to improve teaching and learning efforts (Lane, 2001). Among many other roles that are designed to help improve teaching effectiveness and student learning in higher education are ones in which faculty are supported through training in the use of different technologies and support in the design of learning environments. Overall, the academic technology units in higher education support in meeting the instructional mission of institutions.

Academic technology support is not new, but recent trends are drawing more attention to this service area. In the last decade and a half, there have been rapid changes in higher education resulting from developments in information technology. These changes have extended to various areas in institutions and have particularly impacted ATSS units (Hutchinson, 1996; Milet & Albright, 1997; Johnson, 2001; Laskowski, 2000). As a result of the changes, ATSS units have witnessed unprecedented transformation from within, leading to mergers, different reporting arrangements, new organizational structures in academic technology, increased demand in services, and similar changes. The developments that have affected the field of instructional technology have also impacted leadership positions in academic technology. Results of that impact include, in some cases, new administrative patterns and the emergence of top administrative positions to oversee the ATSS units (Albright, 1995; Johnson, 2001), and changes in the roles and responsibilities of the directors of the units (Nworie, 2004). As Kerstetter and Post (2000) noted, "Since the start, media management has gone through many changes, responding to new technologies, pedagogical theories, and organizational structure" (p. 11). Over four decades ago, Morris (1963) predicted that the "application of the new technology will result in major changes affecting the administration, organization, and physical facilities" of units that are responsible for instructional technology in higher education (p. 11). A few years later, Torrey (1969) added that the introduction of new or advanced technologies often results in new responsibilities. Tor-

rey (1969) further suggested that the changes that affect audiovisual service centers often result in expanded roles for the directors and often lead to the increased need for hiring more experienced directors and other professional staff. In a nationwide survey conducted in the fall of 2003 by Pike (2004), 77% of the respondents indicated that the responsibilities of their unit had changed significantly since 1993. In recent times, the ATSS units are gradually gaining prominence of immense proportions in higher education amidst rapid change and rising complexities in information technology (Geoghegan, 1994). The increasing demand for services (Johnson 2001; Milet & Albright, 1997) has resulted in new positions being created and in the employment of additional professionals to help provide expanded service (Surry, 1996; Surry & Robinson, 2001). Furthermore, the competencies required of educational technology professionals and those that head the ATSS units are also changing. As new technologies emerge, there has been a corresponding need to integrate them into the teaching and learning experience of students in colleges and universities. The growing importance of instructional technology in teaching and learning and the technological change taking place in higher education draws attention to the role of ATSS directors. It calls for the institution of appropriate leadership structure in academic technology by colleges and universities and support of the academic technology leaders, as they direct the ATSS units in navigating through this era of transformations. Their roles, as noted by Hope (1997) can be crucial to the realization of the potential of technology in the teaching and learning process in academic institutions.

ATSS is used in this article as a general term to represent the units that support faculty in instructional development and technology application in teaching and learning to reflect the contemporary trend. Different names, such as instructional technology support units, media services centers, instructional technology centers, audiovisual services, educational technology centers, educational technology and distance learning, office of instructional technologies, educational communications and technology, instructional development centers, instructional media and technology centers, and a host of other names are used to refer to these units by higher education institutions. The many different names can be confusing. Albright (1984), Milet and Albright (1997), Johnson (1996) and others have reported on the many different names associated with the academic technology support units. ATSS is, therefore, used here to reflect these different names and identities of units that provide instructional technology support to higher education faculty. Academic technology is also used to denote the emerging trends in the evolution of media services and instructional technology support services units. Across higher education institutions, many colleges and universities use the term "academic technology" to describe technology units that support ac-

ademic activities, as opposed to "administrative computing" that supports administrative functions. While some of the academic technology support units are part of the larger information technology (IT) groups at various institutions, many are still part of the academic affairs division or the library and information services (Milet & Albright).

ADMINISTRATION OF ACADEMIC TECHNOLOGY

The instructional media and technology units have supported higher education faculty in the use of media and technologies in instruction for many years and at some point in this long history have had a need for individuals to head their operations. The need for that leadership has grown over the years as formal structures in its development and organization began to appear around the 1950's and 1960's. The advent of digital technologies and the growing interest in the application of supportive pedagogical methods have resulted in renewed interest in instructional technology and subsequently in staffing ATSS units with the right staff. A review of position announcements for directors of ATSS units since the 1990's show increases in the hiring of ATSS directors. The current leaders of ATSS in higher education come from various academic backgrounds, with the majority coming from the fields of instructional design and technology, library science, and communications. Many other disciplines are also represented. While a good number were former faculty members, there are many that have advanced through the administrative structure.

Effective leadership is crucial to the survival of any enterprise, as well as in authorizing, managing, and sustaining change efforts. Hope (1997) noted that leadership is a necessary requirement for an organizations progress and performance. The administration of ATSS units in higher education, helping institutions align technology to their instructional missions, and helping institutions realize the benefits of technology, requires leadership at an appropriate level and is equally essential. The academic technology support units, just like other areas in higher education, need strong leadership for greater efficiency. Moreover, the changes occurring in ATSS call for a special type of leadership to steer the course of technology application in the right direction for the benefit of the institutions. Barone (2001) suggests that the new economic, social, and technical changes taking place in higher education in the information age call for new approaches to administration, and this will include the ATSS units. In these changing times, the directors of ATSS units are expected to provide leadership that functions at the strategic level (Johnson, 2001; Bates, 2000; Kostic, 1998; Albright, 1992). Administrators who oversee the ATSS units are in a unique position to direct the operation to achieve the desired goal, which is to enable institutions to effectively com-

bine the use of pedagogy and technology to meet the institution's instructional goals.

Professionals within and outside the field of instructional technology do recognize that the academic technology units need strong leadership to succeed (Kearsley & Lynch, 1994; Dede, 1994; Albright, 1992; Bates, 2000; Bates 1999; Hawkins, 2000; Hope, 1997; Kostic 1998). Tiedemann (1986) argued that strong leadership is essential for successful technological innovation to take place in higher education (p. 42). Furthermore, Kostic suggested the creation of essential leadership positions in establishing an academic technology support unit. After visiting several colleges and universities to investigate the use of technology, Bates (2000) commented: "In all the organizations that I visited where technology was being used successfully for teaching, strong leadership was a critical factor. Without leadership and a strong sense of support for change in an organization, the barriers of inertia will be too great" (p. 43).

Some progress has been made in recent times in addressing the need for top leadership in ATSS units. Some institutions have responded accordingly and have created top administrative positions to oversee the units that support the use of instructional technology (Albright, 1995; Johnson, 2001). In reporting on current trends in this area, Albright wrote, "Whereas past announcements for media directors typically focused upon technical knowledge and management experience, we are now seeing much more emphasis placed on terms such as organization, leadership, and vision" (p. 39). He further observed that title designations for the ATSS director are changing, suggesting elevation to decision-making positions (Albright). More needs to be done in elevating, recognizing, supporting, and positioning the ATSS director.

Different designations and titles have been used to refer to the directors of academic technology support services in higher education, some of which reflect emerging trends. Johnson (2001), following his study of problems facing academic technology units, reported that 56.2% of the academic technology administrators in his survey held the title of director or executive director, 7.5% were deans or assistant deans, 3.5% were assistant or associate vice presidents, and 1.3% were vice presidents. Also, 24% held the title of manager, coordinator, assistant or associate director. Judging from the results of the study, it is apparent that more needs to be done in this area, as the vast majority of the administrators that head the ATSS units hold mid to low level positions. Most hold position titles or ranks that do not qualify them to authorize change or have much influence within the institution. Administrators in top leadership positions are in a better position to authorize change (Lick & Kauffman, 2001). Bates (2000) recommended that colleges and universities create leadership positions in the rank of "associate vice

president with overall responsibility for academic technology issues, probably as part of a larger unit for teaching and learning" (p. 195). This position will collaborate with the information technology group and similar on-campus organizations to manage instructional technology, administer faculty training, and design instruction for better student learning.

THE POSITION OF ATSS DIRECTORS

Kerstetter and Post (2000) wrote that "Media management, the administration of college and university audiovisual media programs is a relatively young field––most programs date from the 1950s or 1960s" (p. 11). The functions of the ATSS directors encompass leadership and management, which involve performing many roles and responsibilities (Nworie, 2004). While ATSS unit directors are involved in some aspects of management, their position seems to require more leadership qualities and attributes, which involve being innovators, visionaries, and having influence on people. They have a broad view of how instructional technologies can be used to meet the institution's instructional goals and mission. Eidgahy (1991) has described media directors as higher education administrators as well as technology experts (p. 45). As a professional group, academic technology administrators are not "well defined or distinctly bound" (Johnson, Lamb, & Teclehaimanot, 2003, p. 91). One of the areas that have remained unchanged, however, is the director's customer service role, which involves meeting the needs of individuals (Kerstetter & Post, 2000).

Directors of ATSS units occupy important positions on college and university campuses; they "….belong to an entire profession that specializes in supporting the educational mission of the institution" (Albright, 1995, p. 52). Supporting them well in their many roles and organizing the units they oversee in an efficient manner could result in having an effective academic technology unit that will best meet the needs of the institution in supporting the faculty role of teaching and learning. The need for a strong foundation in structure and administration of ATSS units is very important.

The position of the ATSS directors is a crucial position on college and university campuses, as it is essential in directing efforts in the application of technology to the teaching and learning process.

ATSS directors belong to the group of technology leaders since they seek to adopt new technological innovations, manage change, develop policies and procedures that guide the use of technologies in the instructional process, and support higher education institutions in the application of technology to teaching and learning. According to Kearsley and Lynch (1994), "Technology leadership is inherently linked to innovation and this

provides unique consideration. While leadership usually involves dealing with change, technology leadership deals almost exclusively with new procedures, policies, and situations" (p. 6). They further identified the potential benefits of good technology leadership, which includes, "improved academic achievement by students, improved student attendance and reduced attrition, better vocational preparation of students, more efficient administrative operations, reduced teacher/staff burnout and turnover." Additionally, technology leadership provides support and training for faculty. Leadership of ATSS can help determine: (a) how institutions apply technology in instruction and (b) how instructional technology resources are managed.

FUNCTIONS OF THE ATSS DIRECTORS

The literature suggests that the functions of ATSS directors are many and varied. Their roles range from providing oversight of the ATSS units to providing instruction on technology integration in teaching and learning, managing technological resources, researching and adopting technological innovations, supporting technology application in instruction, investigating the proper integration of pedagogical methods with technology, managing learning environments, providing budget oversights, collaborating with other institutional constituencies that support faculty and students, and providing institution-wide strategic leadership in academic technology. Other roles of the ATSS directors include supervising their staff, managing the daily activities of their units, responding to the needs of supporting faculty in technology application, serving on various campus committees, aligning the functions of the ATSS unit to the instructional mission of their institution, and providing a strategic leadership of the ATSS. As new technologies are adopted and pedagogical strategies are applied to instruction, their roles and responsibilities change, as they plan to effectively integrate these. The task of supporting faculty in the use of technology in higher education, which is the major focus of the ATSS units, is an enormous one, requiring institutions to ensure that they have someone at the right level of authority at the helm of affairs in the ATSS units. Albright and Nworie (2008) have identified and suggested some of the requisite competencies and responsibilities for the ATSS directors.

However, the roles of the ATSS directors face constant changes because of the rapidly changing technological environment. As such, they have learned to keep abreast of trends to identify the emerging roles and responsibilities. This flexibility of those in ATSS leadership positions enables them to function effectively in times of change. Johnson (2001) maintained that the director of a successful academic technology unit will be required to spend requisite time at the strategic level. Meeting the leadership require-

ments in academic technology and leading a program that is involved in various functions can be daunting and demanding. Performing the essential roles of an ATSS director in higher education requires leadership and management skills.

Management Role

The overarching role of directors of ATSS units appears to center on the leadership roles, but they must also deal with management functions. While professionals in the field call for the involvement of ATSS directors in strategic leadership, there is still a large component of management activities involved in the daily functions required in the administration of the ATSS units. Oftentimes, the leadership and management functions tend to overlap. However, managers are generally viewed as individuals who can manage transactions and projects, while leaders are considered transformers (Burns, 1978). Managers engage in transactions that lead to the accomplishment of projects and organizational goals, while leaders focus on providing strategic vision and mobilizing others to share and accomplish the vision. According to Hersey, Blanchard, and Johnson (1996), management is "the process of working with and through individuals and groups and other resources to accomplish organizational goals" (p. 7). Hawkins (2000) addressed the need for strong managerial and leadership skills for professionals in this field and a new mindset in the era of change. In an earlier study, Silber (1970) investigated the instructional management functions for the domain of instructional technology and identified two major management functions that are essential: Organization Management Function and Personnel Management Function. Other professionals and researchers in the field have also addressed the need for the directors to possess management skills. Babcock and Borek (1978), for example, suggested that "There is little doubt about the need for management skills. Media managers must be able to act, react, and survive in a changing environment. The alternative is extinction" (p. 18). Having good management or administrative skills is important for the success of the ATSS directors in their roles.

To function effectively in the managerial role, the manager is expected to possess some skills and qualities that include good interpersonal skills, good project management skills, communication skills, ability to meet deadlines, ability to supervise staff, and the ability to manage a given budget. Babcock and Borek also identified the essential aspects of media management as planning, organizing, directing, and controlling. Essential management skills for media managers and administrators as provided by Wilkinson (1978) include planning, organizing, motivating, and controlling as some of the functions. Wilkinson further identified general skills needed to operate

at different levels in administrative positions. For top management, "conceptual skills" are needed, while "human skills" are needed at the middle management level (p. 21). Wilkinson admitted that while managerial skills are important in the roles of media managers, acquisition of such skills will be of immense help to educational institutions. Wilkinson's view is best summarized in this comment: "We must become managers, in addition to being competent administrators. We need to develop the human skills that will make us open to the needs, desires, and aspirations of others within the educational enterprise and the conceptual skills that will enable us to integrate media programs into the total environment of educational institutions" (p. 21).

Working in today's higher education environment is different than it was in the past, as it goes through rapid changes. As noted by Gilland and Tyan (1997), current trends in higher education have impacted the effectiveness of traditional strategic planning, management approaches, and leadership models. It has become clear that without the essential leadership and management skills, it could be difficult for those leading ATSS units to operate successfully in the face of present rapid technological, economic, political, cultural, and global change.

Faculty Support or Collaboration with Faculty

Another area of major function for the ATSS directors is supporting faculty in instructional development and providing them with the necessary technological skills that are essential to the effective use of technology in the classroom. There has been a growing interest in engaging in instructional development and in the use of appropriate pedagogy by faculty. The interest to engage instructional development may have been driven by the desire to effectively employ the digital technologies for instructional improvement. The effort to engage and support faculty in technology training is consistent with the function of the ATSS units in supporting the instructional mission of colleges and universities. In the survey of technology use in higher education conducted by Green (2001) since 1990, college and university officials have for many years rated the need to assist faculty with technology integration as one of the most important issues facing higher education technology use. Providing faculty with the necessary technological skills is essential to the effective use of technology in the classroom. In providing this service, an effective model seems to be the collaborative approach, rather than taking up a subservient role (Heinich, 1995).

To effectively function in the instructional development consulting relationship, the ATSS director acting as an instructional technologist should maintain a peer relationship, rather than play a subservient role. Heinich

(1995) suggested that instructional technologists move from a "nurturing to a commanding role and from a support to a design role" (p. 65). The academic technology leaders must have a clear vision of how the educational technology innovation would be adopted to produce the desired changes for the maximum benefit of higher education, and they must understand their own roles and responsibilities in administering ATSS units. Background in instructional technology, such as experience gained in the field of instructional design and technology graduate preparation, as suggested by Albright (1992), is crucial to support faculty in instructional development.

LEADERSHIP QUALITIES

Leaders in the area of technology support generally tend to share many attributes of other leaders, in addition to distinctive characteristics such as demonstrating unique abilities and knowledge regarding the impact of technology, and a few other qualities. Extant literature suggests leadership qualities that are essential for directors of ATSS units such as vision and strategic leadership, ability to manage change, management skills, assertiveness, and knowledge of higher education. Providing vision and strategic leadership appears to receive frequent mention and is widely accepted as an important quality. Absence of leadership qualities that will provide vision in the adoption of technological innovations and guide their use in improving teaching and learning can delay or erode the hopes of effective use of technology in instruction. Oftentimes, it is the top leadership positions that enable the ATSS directors to operate at the strategic level.

Strategic Leadership

To provide vision and the clear direction necessary to mobilize the available technology resources for instructional improvement at the institutional level, the direction to follow is engaging in strategic leadership. As leaders, ATSS directors must envision and facilitate the institution's strategic goals in the acquisition, deployment, and application of instructional technologies. Strategic leadership addresses the ability of a leader to apply strategic vision in developing strategic plans that encourage maintaining the competitive advantage of their organization and in building sustainability. In providing strategic leadership, the ATSS director articulates the institutions mission in its goals and collaborates with the information technology units, libraries, and similar campus organizations to manage instructional technology and administer faculty training, to achieve the goals of the ATSS unit and the mission of the institution. The level of leadership suggested by Bates (1999) places the ATSS directors in a position to operate at a strategic level. Much

of the literature suggests the need for exceptional leadership in academic technology if the promise of computer technology to improve education is to be realized (Kearsley & Lynch, 1994; Dede, 1994; Albright, 1992; Bates, 2000; Hope, 1997; Rossett, 2000; Galbraith, Grice, Carss, Endean, & Warry, 1990). Johnson (2001) maintained that the director of a successful academic technology unit would be required to spend enough time at the strategic level. Meeting the leadership requirements in academic technology and leading a program that is involved in various functions can be daunting, and performing some of the prescribed roles, as outlined in the literature, requires good leadership and management skills. Albright (1992) suggested reasons why leadership of ATSS units has not operated effectively at the strategic level in the past, based on the findings of a 1990 study. Some of the reasons adduced by Albright included: (a) reporting relationships that placed the directors under administrators who have no accountability for classroom instruction and (b) the detachment or isolation of the ATSS units from other instructional support functions, such as academic computing and faculty development (Albright, p. 381).

Kostic (1998) suggested the creation of essential leadership positions for academic technology support. The position would provide strategic vision and support faculty in their instructional roles. Similarly, Albright (1992) advocated that ATSS directors function at the strategic level instead of just managing the daily operation of their units. Operating at the strategic level will help the ATSS directors provide a broad vision of how academic technology interfaces with other departments within the institution, articulate a vision of how the resources of academic technology could be used effectively to meet the instructional mission of the institution, forge plans to support academic departments to integrate technology into the curriculum, provide strategic planning, and engage in program development. Albright argued that these functions are "absolutely essential if the unit is to have a long-term and significant impact" (p. 383).

In support of the need for visionary and strategic leadership, Winters (1997) argued that contemporary organizations need "bold and visionary" leaders (p. 1). She further added traits that distinguish a leader, which include exhibiting assertiveness to take a stand on unpopular issues, taking a strong position for the benefit of the team, bringing others in and empowering them to become a part of a vision, and possessing the strength to initiate change. There is a need for a new mindset and move by institutions to position ATSS leaders at levels that will enable them to contribute to strategic goals, provide input on how instructional technologies can meet the institutional goals, participate in decision making and policy formulation, and poses to sponsor change in higher education. To succeed in a world that is fast changing, McAdams (1997) prescribed collaboration among leadership

in the organization, enrichment of ideals, and strong commitment to change. While Capowski (1994) suggested that effective information technology leadership must provide an atmosphere that encourages innovation and rewards creativity. Wunsch (2000) wrote along similar lines, expressing that:

> Proactive, risk-taking leadership means that no director can stand alone or behind the scenes. A competent media center director is on the front line, integrated into other instructional support ventures, always in danger of attention, assessment, and critical opinion. Community, not autonomy, produces the high visibility that results in credibility and recognition. (p. 65)

For the instructional technology leader, having a clear vision of how the educational technology innovation would be adopted to produce the desired changes for the maximum benefit of the institution is an essential requirement. The implication for the academic technology leaders is that when they move into leadership positions with authority, as suggested by Bates (1999), they can wield influence at a level that will enable them lead their units and guide their institutions in the application of new technologies, which will have profound impact in the teaching and learning process in higher education. Galbraith et al (1990) noted that the absence of leadership is one of the deterrents to the integration of technology in the teaching and learning process in educational institutions.

Change Management

For years, directors of ATSS units have managed change at different levels as the field evolved, as new technologies were adopted, and as changes occurred in other areas on their campuses that impacted their units. The ability to manage change is a leadership attribute. The literature suggests changes are taking place in both higher education and in the academic technology support units. Since the ATSS directors operate in a field that is constantly evolving and in an environment that is witnessing unprecedented change, the ability to understand and manage change is essential. Schieman (1980) reported in the findings of a study that participants from larger institutions were more likely to see their task as change-oriented. Managing change, therefore, has become an important and enduring role for the ATSS director. Fullan (1993) suggested that leaders who operate in educational institutions need to understand the change process to effectively lead and efficiently manage the transformation that is currently underway. The level of the leadership position can confer on the director the power to authorize change (Lick & Kaufman, 2001). Top level positions easily grant the incumbent the authority to also initiate or legitimize change.

A review of recent academic technology position announcements in higher education and related literature confirms a lack of sufficient representation of academic technology leaders in the upper corridors of power, where they can effectively advocate, sponsor or authorize, and manage change in instructional technology related areas in higher education (Albright, 1996; Surry & Robinson, 2001; Johnson, 2001). While some progress has been made, a vast majority of campuses still have positions that operate at lower levels.

Conforming to Higher Education Administrative Roles

In administering the ATSS unit, it is important for the director or leadership of the ATSS to be positioned appropriately in the administrative structure of higher education. In the leadership cadre in higher education, ATSS directors function as administrators in higher education, and seem to predominantly fall into the category of mid-level administrators. The literature on leadership in higher education does not adequately address the type of leadership styles or traits found in the directors of ATSS units. However, the required leadership traits for mid-level administrators would apply to directors of ATSS units. Sprunger and Bergquist (1978) listed six major functions of administration in higher education: (a) leading, (b) planning, (c) organizing, (d) staffing, (e) developing, and (f) evaluating. They also noted that there are administrators whose roles are not clearly defined, and, as a result, are not able to exert leadership influence in their positions. In such ill-defined positions, the administrators are responsible for programs and resources, but lack authority in policy and decision-making. When roles are not clearly defined, the result could lead to role conflict (Gmelch & Torelli, 1994), ambiguity, and confusion, hence the importance of role identification and definition (Biddle, 1979). Martin and Stone (1965) suggested the need for well-defined job functions and professional training for media personnel. According to Torrey (1969), the functions performed by the directors of academic technology, along with the resources they bring to their positions "will be one of the essential determinants of success in tomorrow's colleges" (p. 4). As administrators, a clear definition of role is important for the ATSS directors, in addition to the leadership and management qualities discussed earlier in this article.

Implications

Creating and appropriately positioning ATSS leadership is important to enable the ATSS leaders to champion the integration of technology in the process of teaching and learning, particularly at a time of rapid technological change, which is pushing conventions in higher education; provide over-

sight for the administration of the unit; and effectively manage the change that is constantly occurring in the field of information and instructional technology. The positions of the ATSS leaders are deemed important as they support the instructional mission of the institution through their support of the faculty in teaching and learning with technology, designing and managing learning environments, supporting faculty development programs, and supporting institutions in distance learning activities. The roles and responsibilities of the ATSS leader will also need to be clearly defined.

SUCCEEDING IN THE HIGHER EDUCATION ENVIRONMENT

From the forgoing, it is clear that the higher education environment is changing in response to technological and other factors, and academic technology units are also undergoing change; making it complex to manage such units in today's environment. To harness and manage the technological resources that are currently available, institutions need to hire the right individuals for the job, support the individual in the position, fund the position and the unit, and invest in the needed recourses. In addition to filling the support staff positions and the leadership position, at the appropriate rank, staff positions will also need to be filled. The head of the ATSS unit will need to be empowered to be effective. To succeed in their roles, the directors of academic technology units will need the support of their institutions.

Recognition and Support

As was observed by Wunsch (2000) and others, instructional technology programs or ATSS units are often not the priority of top institutional administrators who make decisions on funding, allocation of office spaces, and other areas that affect the units that support the use of instructional technology, despite the call for the faculty to embrace technology in their teaching and in student learning. As noted by Wunsch (2000), "With the exception of a few individuals who have a disciplinary or personal interest in technology, top administrators generally are not concerned with instructional technology per se" (p. 61). ATSS directors need the support of institutional administrators to perform their institution-wide roles effectively. While the ATSS directors have major roles to play in the administration of their units, support from their institutions goes a long way toward determining their success. Higher education administration plays a major role in supporting the alignment of instructional technology initiatives to institutional priorities. The success of the ATSS units does not rest solely on the organization of the units and their administration, but also on the support they receive through funding and the level of authority and autonomy bequeathed to the directors.

According to Wunsch, "Autonomy can give a director a sense of personal control over daily operations" (p. 65)." The suggestion by Kinnaman (1996) that information technology professionals be "empowered" appears apt (p. 2). Hope (1997) identified lack of leadership and vision of what technology can accomplish by institutional administration as one of the reasons for the delay in the realization of the potentials of technology in educational institutions.

The success of ATSS units is a result of the recognition and support provided by higher administrators in their institutions. It is the top administrators who create the appropriate positions to administer the ATSS units, provide funding to support the technology initiatives, and locate the units in areas that best meet the needs of the institution. This support from top administration is very much encouraged, but should not be taken for granted. It is the role of the ATSS director to constantly draw the attention of top management to their cause, as some administrators do not know what ATSS units do, neither do they have the units on their priority list. Wunsch (2000) also explained that generally top administrators are not familiar with instructional technology support programs since, as faculty members, they did not use technologies of the present day sophistication. Wunsch (2000) clearly summed up the situation in this statement:

> Directors of instructional technology centers are especially prone to nurturing the belief that key administrators (for our purposes this refers to presidents, vice presidents, deans, and directors) do and should think about instructional technology as a key to the campus support system. It is difficult to believe, let alone accept, that our personal values and interests may not be those of the institution and its administrators. (p. 61)

The individual director may have to work towards making his/her program relevant by remaining within sight of administration. Wunsch (2000) suggested that the directors of the media and technology center embrace a collaborative and integrative approach as a way to help build credibility and visibility. Concerted efforts need to be made by higher education institutions to support the administration of instructional technology programs in ways that empower the ATSS directors, allowing them to be creative, and giving them the flexibility they need to lead.

Funding

One of the ways institutional administration can support the ATSS units and their leaders is through adequate funding. In these austere times, no institution wants to keep spending. Tabron (2008) noted that most higher edu-

cation administrators have the notion that they responded to a major need to adopt technological innovation when they acquired the course management system (CMS) in the 1990s. However, faced with the increasing costs for renewing licenses and upgrades, they are now more interested in finding ways to expand the use of the CMS instead of increasing their expenses. While the budgets are shrinking institution wide, providing equitable funding as it affects the ATSS units does help, despite the notion that such funding decisions by administrators are often based on limited perceptions and "informal collection of data," according to McConeghy and McConeghy (1990, p. 54). As McConeghy and McConeghy stated: "Support of media services is often based upon a perception by central administration as to how well the service is received on campus. If the perception is that the service is worthwhile, support is forthcoming; if the service is seen as not important to the goals of the institution, support is reduced or may be lacking altogether" (p. 54).

Funding is one of the essential resources that will help the ATSS directors in the effective administration of the ATSS units, enabling them to acquire needed technologies, provide training, support their staff, maintain their equipment, provide the needed support, and sustain a positive change in technology application. The technologies that they adopt for their institutions usually come at exorbitant prices, so providing adequate funding for technological infrastructure is essential (Zvacek, 2001). Geoghegan (1994) observed that "a well funded and highly professional instructional technology development and support organization has been seen by many institutions as a desirable adjunct to the campus information technology organization" (p.14). Without adequate funding, it will be difficult for the academic service units to acquire new technologies, maintain existing equipment, hire well-qualified staff, and run the daily operations of the units. Hope (1997) suggested that limited technology resources is one of the factors that impede the goals of fully realizing the potentials of technology. In an era of proliferation of sophisticated technologies and unprecedented change, if the innovation in the delivery of instruction that is beginning to take hold is to be sustained and if institutions seriously desire to encourage innovations in curriculum, there is the necessity to devote resources to the innovations (Tabron, 2008).

Need for Support Staff

While this may seem like stressing the obvious, in practice, there are directors that have ATSS units that are not sufficiently staffed either because of budget constraints or as a result of oversight by the institutions. An individual ATSS director cannot single handedly run an ATSS unit effectively, even with the support of an administrative assistant. The director will de-

pend on the skills of an effective staff to provide all the services requested by faculty, students, and administrators. Providing funding ensures that the ATSS units are adequately staffed. Following recommendations by the directors of ATSS units, it is the upper administration that will often authorize the hiring of new or additional staff. For the ATSS directors to be effective in their roles, they need support in the arduous task of supporting faculty and students. There will be a need for more support staff who understand the new technologies and instructional processes. If institutions do not plan well to address the associated needs, the ATSS directors may be blamed for failing to meet the instructional technology needs of their institutions. In addressing this issue, Gilbert (1995) wrote,

> New campus investments in computers, video equipment, and software are most often not matched by new additions to technology/media support services staff. As the availability of equipment of equipment and publicity about the Internet increases, the demand for training and other support services increases at an accelerating pace, and the gap between the demand and availability of support services widens. (p. 16)

An impediment to not having enough staff is often associated with funding. Institutional administrators can support the ATSS director by exhibiting some flexibility and support in having enough staff with the right skills.

Positioning the Director and the ATSS Unit

Taking time to organize or restructure the ATSS unit to fit into a place where the unit can best serve the institution is the direction to go. Integrating the ATSS unit with other units that provide instructional support functions will be beneficial. Where the ATSS will be located is an important issue to be considered. Locating the ATSS leader or director and his/her unit in a place where they are relevant is equally important. Merely locating the leader and the unit where the ATSS unit is administratively convenient for the institutional leadership could be counterproductive. The unit and its director need to be aligned with an administrative unit that faculty members can relate to and in a setting that faculty can use the services provided to them. Similarly, the ATSS directors will need reporting relationships to administrators who have responsibility or accountability for classroom instruction or a strong commitment to the process of teaching and learning (Albright, 1992).

Professional Development

The ATSS directors are in a position of dealing with cutting-edge technology, they need to understand the trends, the research surrounding emerging technologies, the best application of emerging technologies in instruction, and the view of campus and outside constituencies on issues relating to teaching, learning, and technologies. The fast pace of technological developments suggests that the ATSS director will need to be engaged in professional development to keep abreast of changes.

CONCLUSIONS

The role of instructional technology in educational settings is important. Equally important is the function of academic technology units as they support faculty in the use of instructional technology. The functions of the academic technology support service units are many and diverse, thereby requiring good leadership to bring cohesion to the many activities that managing an ATSS unit entails. The administrators who oversee the activities of the academic technology units occupy an important position in higher education, as their functions impact the instructional mission of institutions at a very challenging time, while their roles are increasing, resources are becoming scant, the line between their roles and those of similar units are blurry, and there is an increased demand on their services. Effective administration of academic technology can lead to a thriving unit that efficiently supports the instructional goals of higher education institutions and to the realization of the promises and potentials of emerging technologies. The success of the directors of ATSS units hinges on institutions creating strategic ATSS leadership positions, support from the institutions in providing the necessary resources and funding, and providing a conducive environment.

References

Albright, M. J. (1984). The status of media centers in higher education. *Media Management Journal,* 3(3), 4-18.
Albright, M. J. (1992, Fall). The future of campus media centers. In M. J. Albright & D. L. Graf (Eds.), Teaching in the information age: The role of educational technology (pp. 91-100). New Directions for Teaching and Learning, No. 51. San Francisco: Jossey-Bass.
Albright, M. J. (1995, Fall). Media centers and instructional technology in an era of information technology. *College and University Media Review,* 2(1), 39-53.
Albright, M. J. (1996, February). Instructional technology and higher education: Rewards, rights, and responsibilities. Invited keynote address presented at the Annual Conference of the Southern Regional Faculty and Instructional Development Consortium, Baton Rouge, LA.

Albright, M.J., & Nworie, J. (2008). Rethinking academic technology leadership in an era of change. *EDUCAUSE Quarterly,* 31(1), 14-23.

Babcock, E., & Borek, J. M. (1978, October). Essential elements of media management. *Audiovisual Instruction* (pp. 18-19).

Barone, C. (2001, May/June). Conditions for transformation: Infrastructure is not the issue. *EDUCAUSE Review*, 36(3), 41-46.

Bates, A. W. (1999). *Managing technological change: Strategies for academic leaders.* San Francisco: Jossey Bass.

Bates, A. W. (2000). *Managing technological change: Strategies for college and university leaders.* San Francisco: Jossey-Bass.

Biddle, B. J. (1979). *Role theory: Expectations, identities, and behaviors.* New York: Academic Press.

Bourdeau, J., & Bates, A. (1997). Instructional design for distance learning. In S. Dijkstra, N. M. Seal, & R. D. Terryson (Eds.), *Instructional design: International perspectives* (Vol. 2, pp. 369-397). Mahwah, NJ: Lawrence Erlbaum.

Burns, J. M. (1978). *Leadership.* New York: Harper & Row.

Capowski, G. (1994). Anatomy of a leader: Where are the leaders of tomorrow? *American Business Leaders,* 83(3).

Dede, C. (1994). Leadership without followers. In G. Kearsley & W. Lynch (Eds.), Educational technology: *Leadership perspectives* (pp. 19-28). Englewood Cliffs, NJ: Educational Technology Publications.

Eidgahy, S. Y. (1991). How media directors think about ed tech services. *Tech Trends,* 36(5), 45-52.

Eidgahy, S. Y., & Bennett, R. V. (1991). What does higher education think about educational technology services? A study of differing perceptions: DEMM media management. *Tech Trends*, 36(4), 25-30.

Fullan, M. G. (1993). *Change forces: Probing the depths of educational reform,* Bristol, PA: Falmer.

Galbraith, P., Grice, R., Carss, M., Endean, L., & Warry, M. (1990). Instructional technology in education: Whither its future. *Educational Technology,* 30, 18-25.

Geoghegan, W. H. (1994, July). *What ever happened to instructional technology?* (Reaching Mainstream Faculty) Paper presented at the 22nd Annual Conference of the International Business Schools Computing Association, Baltimore, MD.

Gilbert, S. W. (1995). Education technology and transformation. *Community College Journal,* 66(2), 14-18.

Gmelch, W. H., & Torelli, J. A. (1994). The association of role conflict and ambiguity with administrator stress and burnout. *Journal of School Leadership,* 4, 341-356.

Green, K. (2001). *The 2001 national survey of information technology in US higher education.* Retrieved January 4, 2009, from http://www.campuscomputing.net/

Hawkins, B.L. (2000, January/February). Looking at our professional field. *EDUCAUSE Review*, 35(1), 98-104.

Heinich, R. (1995). The proper study of instructional technology. In G. Anglin, (Ed.), Instructional technology: Past, present, and future (2nd ed.), Englewood, Co: Libraries Unlimited.

Hersey, P., Blanchard, K., & Johnson, D. (1996). *Management of organizational behavior.* Upper Saddle River, NJ: Prentice Hall.

Hope, C.W. (1997). Why technology has not realized its potential in schools: A perspective. *American Secondary Education,* 25, 2-9.

Hutchinson, J.A. (1996). Instructional support in higher education: A holistic perspective. *Media Review,* 3(1), 61-70.

Johnson, L. (1996). Characteristics and attitudes of media services administrators. *College and University Media Review,* 2(2), 85-103.

Johnson, L. (2001). *Issues impacting academic technology support and services departments in United States higher education* (Doctoral dissertation, Indiana University, 2001). Dissertation Abstracts International-A 62 (02), 538.

Johnson, L., Lamb, A., & Teclehaimanot, B. (2003). Academic technology: The convergence of diverse disciplines. *College and University Media Review,* 9(2), 91-106.

Kearsley, G., & Lynch, W. (Eds.). (1994). *Educational technology: Leadership perspectives.* Englewood Cliffs, NJ: Educational Technology Publications.

Kerstetter, J. P., & Post, R. (2000). A history of media management in higher education. *College and University Media Review,* 7(1), 11-20.

Kinnaman, D. (1996). We need thinking like that! *Technology & Learning,* 16(4).

Kostic, M. (1998). *An urgent need for new vision and strategy for use of new technologies in education.* Retrieved February 4, 2005, from http://www.kostic.niu.edu/New-Tech_Vision.htm

Lane, J. L. (2001). Teaching and learning innovations in higher education: Faculty perceptions of sustainability. Unpublished doctoral dissertation, The Pennsylvania State University, University Park.

Laskowski, M. (2000). The academic media center: Where we've been, where we are, and where we are going. *College and University Media Review,* 7(1), 21-40.

Lick, D. W., & Kauffman, R. (2001). Change creation: The rest of the planning story. *Planning for Higher Education,* 29(2), 24-36.

Martin, A. M., & Stone, C. W. (1965). *A study of regional instructional media resources, phase I Manpower.* Pittsburgh, PA: University of Pittsburgh.

McAdams, R. (1997). A systems approach to school reform. *Phi Delta Kappan*, 78(2), 138-142.

McConeghy, G. L., & McConeghy, J. I. (1990). Higher education media management in the 90's: Part one, administration of media centers. *Tech Trends,* 35(5), 54-57.

Milet, L. K., & Albright, M. J. (1997). Media centers in transition: Results of a 1997 CCUMC member survey. *College and University Media Review,* 4(1), 11-41.

Morris, H. (1963, January). The function of media in public school. *Audiovisual Instruction,* 8, 9-14.

Nworie, J. (2004). *Emerging and future roles of directors of academic technology support services in higher education in the United States: A national delphi study.* (Doctoral Dissertation, The Pennsylvania State University, University Park).

Pike, M. J. (2004, Spring/Summer). The trend to restructure media services reporting lines: Results of a study. *College and University Media Review*, 10(2), 11-42.

Privateer, P. M. (1999). Academic technology and the future of higher education: Strategic paths taken and not taken. *The Journal of Higher Education,* 70(1), 60-79.

Ritchie, D. C., & Hoffman, B. (1997). *Using instructional design principles to amplify learning on the World Wide Web.* (ERIC Document Reproduction Service No. ED415835)

Rossett, A. (2000). What's academia got to do with it? *Tech Trends*, 44(5), 32-35.

Rutherford, L. H., & Grana, S. J. (1995). Retrofitting academe: Adapting faculty attitudes and practices to technology. *T.H.E. Journal,* 23(2), 82-86.

Schieman, E. (1980). *The role of the media director at selected Canadian universities as determined by a Delphi survey* (Doctoral dissertation, Indiana University, 1980). Dissertation Abstracts International, 41(04), 1355A. (UMI No. AAT 8022716)

Silber, K. H. (1970). What field are we in, anyhow? *Audiovisual Instruction,* 15(5), 21-24.

Sprunger, B., & Bergquist, W. (1978). *Handbook for college administration.* Washington, DC: Council for the Advancement of Small Colleges.

Surry, D. W. (1996, March/April). Defining the role of the instructional technologist in higher education. Paper presented at the First Mid-South Instructional Technology Conference, Murfreesboro, TN.

Surry, D. W., & Robinson, M.A. (2001). A taxonomy of instructional technology service positions in higher education. *Innovations in Education and Teaching International,* 38(3), 231-238.

Tabron, J. (2008). How to find what clicks in the classroom. *Chronicle of Higher Education.* Retrieved March 26, 2008, from http://chronicle.com/temp/email2.php?id=tmy9 yYvSmpCwcgwymnJTNGmKY9bCnkTF

Tiedemann, D. A. (1986). *Media services in higher education: A Delphi study for the 1990s* (Doctoral dissertation, University of San Diego, 1986). Dissertation Abstracts International, 47(01) 156.

Torrey, G. N. (1969). *An analysis of the role of audiovisual directors in American colleges and universities* (Doctoral dissertation, Boston University School of Education, 1969). Dissertation Abstracts International-A 31(02), 570.

Wilkinson, G. L. (1978). Managers are more than just administrators. *Audiovisual Instruction,* 23(7), 20-21.

Winters, M. (1997). Identifying and supporting potential leaders. *HR Focus,* 74(7), 13-14.

Wunsch, M. A. (2000, Fall). Killing the old myths: Positioning an instructional technology center for a new era in higher education. *College and University Media Review,* 7(1), 51-71.

Zvacek, S.M. (2001). Confessions of a guerilla technologist. *EDUCAUSE Quarterly,* 2, 40-45.