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Creating Online Curriculum: Effective Partnerships

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This article provides a process and rationale/or the development of a module of online curriculum designed to enhance curriculum delivery for students. An outline of the technology infrastructure, the learning environment being created, and the role of the teacher librarian are discussed in relation to outcomes-based education and current changes in educational pedagogy. The partnership between the teacher librarian and the teacher in the design and creation of this online learning experience is detailed, including planned developments in online curriculum delivery.

Introduction

As we move into the 21st century, society is faced with the dilemma of having too much information. With the introduction of computers, microwave transmissions, television, satellites, and the Internet, our ability to produce information has surged ahead of our capacity to process it (Shenk, 1997). Telecommunication technologies are becoming increasingly available in classrooms and educational institutions across Australia and the world are committed to a belief that the use of technology as a means of education delivery has the potential to enhance significantly the teaching strategies and resources currently available to schools (Schools Online Curriculum Content Initiative, 2000). Thus a major challenge faced by teachers and students in schools is the management of an ever-expanding body of information and the effective incorporation of strategies for dealing with these learning technologies and this overload, via traditional curriculum and teaching methodology.

In order to prepare our students for life after school, there has been a pedagogical shift away from content-based curriculum to the provision of an outcomes-focused teaching and learning environment where developing information skills and an understanding of the process of knowledge acquisition, evaluation, and creation is a major goal for students. At the end of their schooling we wish our students to be adaptable, flexible learners with the skills needed to locate, process, and utilize information in contexts relevant to them and at the point of need. How does this pedagogical shift and the continually changing face of technology affect the development of online

learning in schools? How can staff facilitate change at the classroom level to reflect the changing needs of the curriculum, the students, and teachers? This article describes how successful partnerships between teachers and the teacher librarian can create new and innovative learning opportunities for students that integrate information and communication technologies (ICT) and outcomes-based educational pedagogy into curriculum.

Background

Sevenoaks Senior College is a new government secondary school located in the suburb of Cannington, Perth, Western Australia. The College opened in February 2001 and caters to students in the last two postcompulsory years of schooling (students ages range from 16-20). It has a current enrolment of approximately 440 and caters to students studying a range of subjects accredited for the TEE (Tertiary Entrance Examination, designed for university entrance) as well as non-TEE areas including VET (Vocational Education and Training subjects), SWL (Structured Workplace Learning), Fast Track (programs designed to up-skill students wishing to return to the school system or the workplace) and Education Support programs (students with disabilities). Although these programs in postcompulsory schooling in Australia are not entirely new, Sevenoaks is working toward the utilization of a range of community resources, multi-campus sharing, and curriculum delivery that are innovative features of the College. The College also has a stated commitment to increasing retention rates of students in this age group in a socioeconomic area that has traditionally had poor retention rates. By running a variety of programs available in a range of contexts and through the use of online delivery, the College offers more flexibility in the delivery of programs and thus caters to a broader range of student needs and learning styles.

Sevenoaks is an experiment in using high-end technology to deliver curriculum and support materials using a Web-based interface, so students can access their personal work space at any time and from anywhere. The unique infrastructure built into this coeducational college is designed to facilitate a supportive, outcomes-focused, flexible learning environment that allows for the integration of ICT across learning area programs and encourages the development of online curriculum as a method of program delivery.

Several features of the College underpin this philosophy. A major feature is the ICT infrastructure that embeds the use of technology as a means of curriculum delivery across all courses available in the College. The College operates a cutting-edge, single-domain network using Windows 2000 that enables students to access their roaming profile from any computer in the school. The network is extremely fast and robust. Students have open access to the Internet and computers across the school (approximately one computer for every two students) and remote access to the College network from home. By using a single-portal Web site (www.sevenoaks.wa.edu.au) and

the WebCT interface (a content-management system: <http://www.webct.com>) for enhanced program delivery, students can access their course material at any time, contact their teachers via e-mail, participate in moderated online discussions with their peers, and revisit or rework course materials at their own pace and in their own time. Students are encouraged to become increasingly responsible for their own learning. An important aspect of the College's ICT vision has been the involvement and engagement of all teachers in the development of online courses. To facilitate staff involvement, teachers have been provided with a radio wireless-enabled lap-top computer so they can access the network anywhere in the College. The teacher librarian has taken on an additional role as staff trainer, mentor, and curriculum initiator.

Another important part of the ICT infrastructure involves student information management, and the College is testing the SIS (Student Information System) administration system produced by RM Australasia. This system includes the ability to manage electronically all administrative and attendance details about students. Thus teachers can place comments about student progress online for other staff to see. All teachers can track a student's progress across all his or her courses in the College, check attendance records, and target problems as they arise. With the inclusion of the timetable module in 2002, teachers will for the first time have comprehensive information about students at their fingertips.

Another aspect of the College's philosophy to provide a more adult learning environment is the length of the school day. The College operates on an extended day from 8:00 a.m to 5:00 p.m. and runs a flexible timetable, allowing students to be on campus at various times during the day. Students have access to the College and facilities at all times during the day and move freely around the campus. This arrangement is similar to TAFE (Technical and Further Education) and university campuses in Australia and is designed to encourage the development of responsible behavior, self-discipline, and time-management skills, thus assisting students during the transition from postcompulsory schooling to tertiary education institutions and the workplace. The extended day also helps to address the equity issue for students who do not have access to the Internet at home. Students can use the College facilities and the Library and Information Centre at any time during the day.

Sevenoaks has developed close ties with a range of industry partners who play an active role in the promotion of courses and the supply of equipment and technical expertise in the College. Major technology partners in the areas of hardware and software include Cisco, ACER, AlphaWest6 (Solution 6), Harvest Road, and RM Australasia. These partnerships with big business not only provide expertise and equipment, but opportunities for the College and business to work together to ensure that students are equipped with the skills they need to enter the workplace. The College has also negotiated a

Memorandum of Understanding with Curtin University of Technology and has two research fellows (postdoctoral and doctoral) conducting studies on the effectiveness of learning online and the learning environment evolving at Sevenoaks. Involvement in this active research program is providing teachers and students with valuable information about the effectiveness of their programs and program delivery.

In planning the ICT infrastructure and systems/ the College has recognized that ICT usage does not occur in isolation. Four essential elements are needed for successful changes to result from the integration of ICT into any organization, including schools (Department of Education, Science and Training [DEST], 2001). The four elements include the following.

- *People:* teachers, students, technician, parents/guardians, support/administrative staff, community users;
- *Teaching and learning programs:* traditional, online programs, WebCT, Virtual Library, multi-campus;
- *ICT infrastructure:* the hub (network servers, cabling, security cameras), hardware (computers, radio wireless laptops, printers, scanners, digital cameras, data projectors) and software (CD-ROMs, DVD, streaming video); and
- *School structures or the built environment:* learning suites, design studio, lecture theater, computer resource room, Cisco room, model office, computer labs.

When implementing programs that are heavily ICT reliant, it is essential that these four elements be considered together. Ignoring any one will reduce the effectiveness of implementation (DEST, 2001). Recognizing and facilitating the interdependence of these four elements that constitute the College's learning and teaching environment is crucial if the College is to achieve its educational outcomes. An important aspect of this facilitation process is the provision of support for teachers and students in the areas of ICT skill development and the deployment of curriculum online. At Sevenoaks it is the teacher librarian who is responsible for facilitating staff development by acting as a staff trainer, a mentor, and an initiator in the development or creation of modules of online curriculum.

Online Delivery at Sevenoaks

The College Web site and the Virtual Library are evolving structures that are designed to present Sevenoaks' public face to the world and to facilitate and support curriculum programs throughout the College. The Web site provides access to the entry portal for students to the Virtual Library, courses available on WebCT, and other aspects of College life such as the Virtual Café and Student Services. Students can connect to their online courses remotely through the Web site, access resources through the Virtual Library, e-mail staff, and keep abreast of College news. Because the Web site is the main access point for students and staff to online courses in WebCT, its ongoing

evolution is crucial to the further development of effective curriculum delivery in an online environment.

The WebCT interface allows students to access their individual courses from anywhere in the College or remotely from home. WebCT also includes tools such as discussion forums, e-mail, and a calendar. Early findings from research currently being conducted at the College by Dr. Jill Aldridge (Aldridge, Trinidad, Macnish, Fraser, & Wood, 2001) suggest that these tools encourage the development of self-management strategies and communication skills with peers. Although the College currently caters to on-site students only, WebCT provides Sevenoaks with flexible options in the future for the delivery of programs to students who live in remote areas. At present, the teacher responsible for the political and legal studies course is teaching a student who is based in the far northwest of Western Australia where this subject is not available locally. Working collaboratively with staff to use the features of WebCT effectively and to enhance online courses is also part of the teacher librarian's role and involves the implementation of whole-staff development sessions and one-to-one mentoring.

Sevenoaks uses a document publishing and management system (Harvest Road FMS) that allows staff to store curriculum documents in a central database using a range of formats (Word documents, HTML files, images, video, databases, spreadsheets, PowerPoint presentations, audio/MP3 files). Teachers can publish review texts, notes, sample tests, model essays, interactive PowerPoint presentations, assessment tasks, student work, and more in this central repository where all teachers have access to the documents. Alongside DPMS is the Harvest Road Publisher software that enables teachers to create their own Web sites with no knowledge of HTML. They use this software to create the courses that appear online for the students in WebCT. Teachers can link back to the documents they have stored in DPMS using the Harvest Road Publisher software, so students are able to open these documents and save them to their personal work space on the server to work on, review, or keep for future reference. The teacher librarian is responsible for the maintenance of these systems, which involves setting up courses in WebCT and linking these to the templates located in Harvest-Road Publisher, adding or deleting students and staff to the WebCT database, allocating students and staff to courses, and managing the bureaus and workgroup structure of DPMS so that documents may be accessed and published easily. The teacher librarian is also the staff trainer and mentor for the Harvest Road software and the facilitator for the development of online courses in WebCT.

As staff become more competent and confident in the use of this software, the teacher librarian's ongoing role will be to act as a facilitator for the further evolution of courses, to encourage teachers to review and evaluate their teaching strategies in an online environment, and to move forward so that the online courses do not become stagnant.

Online Curriculum Development

Online curriculum development represents a marked change in the roles of the teacher librarian and teachers at Sevenoaks and involves both parties working collaboratively to develop interactive units of online curriculum to enhance learning programs across the College.

Online curriculum is a term that has been loosely applied to anything published on the Internet that concerns education. The term is used to include teaching programs, specific lesson plans, training modules, and print materials transferred en masse to the Internet. These print materials are in effect often little more than books on the screen. In most cases, there has been no attempt to utilize the features of the technology to enhance the learning experience, to cater for different learning styles, or to promote the development of student-centered learning and higher-order thinking skills. In an exploration of online curriculum conducted by the Education Department of Western Australia in June 2000 (Burston, Mawson, Mullaney, Murray, & Yates, 2000), researchers concluded:

It quickly became obvious to the authors, as research was undertaken whilst writing this paper, that the current quality of online curriculum available generally falls quite short of the standard required for its extensive use throughout the Western Australian K-12 education system. The majority of online curriculum reviewed fell short even of the definition of online curriculum, (p. 31)

In view of these findings, the program coordinator of teaching and learning and the teacher librarian at Sevenoaks have worked closely together with staff to define and refine what we mean by this term and how our definition affects the final product. This is an ongoing, evolving process. At Sevenoaks we concluded that online curriculum is a learning experience that uses a Web-based interface as a mode of curriculum delivery. It has all the attributes of good curriculum including the following: it is resource-based; it is student-centered; it encourages higher-order thinking; it develops information literacy skills; it actively engages the learner; it uses prior knowledge to develop further increased understandings of concepts; it places learning in a relevant context for the learner; it encourages independence; and it provides opportunities for the further development of essential skills (literacy, numeracy, teamwork, communication). At all times during the development of these modules of online curriculum, the need to cater to different learning styles and how to use the features of the technology to meet this outcome has been a major consideration.

To date, several modules of online curriculum have been developed using the pedagogy that underpins the 4MAT Constructivist Model of Learning (About Learning Inc., 2001). According to this model there are four main learning styles:

- Learners who need a reason to be actively engaged in a learning experience, that is. How is this relevant to me and my own personal

- goals? These learners often need to have a goal or reward at the end of a learning experience or to be able to see how knowledge gained is or will be relevant in their own lives.
- Learners who require factual explanations so they can organize, collate, and extrapolate to expand and deepen their understanding. These learners often enjoy and appreciate a learning experience simply for the intrinsic value they place on the acquisition of further knowledge.
- Learners who are experimenters. These learners need hands-on experiences and interactivity to keep them engaged and on task. They often require visual aids and need to be actively involved in a learning task.
- Learners who are explorers. These learners need to begin with their own understandings and work through a set of experiences to reach their own conclusions. They often resent direct instructional techniques and become easily bored with traditional teaching methods.

The 4MAT Constructivist model allows students to move through the learning experience at their own pace as it recognizes and incorporates various learning styles. The College has also used the WebQuest model first developed by Bernie Dodge (2001). Web Quests allow students to work through a sequenced learning experience with a specific goal in mind. They are designed to:

- allow students to direct their own learning and research activities (guided). This type of activity allows the experimenters and explorers to become actively engaged in the learning experience.
- actively engage the student in the learning experience, in this case through role-play and an integrated research activity. Students become personally involved in the learning experience through the role-play and can relate this back to issues and concerns that affect their own lives.
- encourage the development of higher-order thinking. At the end of the learning experience, students are required to make a decision and produce arguments to support their choice by drawing on what they have learned.

Snapshot versions of these modules of online curriculum can be accessed from the Programs page on the Sevenoaks Web site at http://www.sevenoaks.wa.edu.au/programs/prg_index.html. As each module of online curriculum has been developed, student and staff usage and impressions or perceptions, the learning environment created, and the outcomes achieved have been closely monitored by Dr. Jill Aldridge, the postdoctoral research fellow working at the College. Dr. Aldridge is closely monitoring the learning environment as it is evolving at Sevenoaks and the level of integration of ICT into teaching and learning programs by staff and students (Aldridge et al., 2001). Information gained from this research is shared with staff and students and used to effect changes to current teaching practice and the integration of ICT into teaching-learning programs. All modules of online

curriculum have been the result of a close working partnership between the teacher librarian and the teacher(s).

Moldarvia: What do we do now the revolution is over?

Moldarvia is an online interactive simulation module designed to enable students to apply theory to practice. The module was designed to assist students in Year 12 political and legal studies to apply the concepts learned in the unit Law and Politics of the Constitution to a simulated environment.

In Western Australia, students deciding on courses for postcompulsory education can select from a range of disciplines within the Society and Environment Learning Area. Political and Legal Studies is studied at Year 11 and 12 levels respectively and provides students with the knowledge and skills required to develop an understanding of the relationship between politics, law, and society. The general aims of this course are to encourage students to understand the basic features of politics and law, to be aware of the importance of the role of politics and law in their everyday lives, and to analyze political and legal issues critically.

Year 12 Political and Legal Studies focuses on the description, analysis, and evaluation of Australia's political and legal institutions and processes. The first unit, Law and Politics of the Constitution, is quite a dry theme, and students can become easily disengaged. Many of the concepts are difficult to grasp, and students need to read widely and deeply to gain minimalist understandings of how government, the law, and the judiciary system work together across a variety of political systems. The online curriculum module *Moldarvia* was primarily designed to stimulate student learning by encouraging them to think critically and creatively about political and legal issues. It is a learning experience that makes learning about constitutions fun and enjoyable.

The online curriculum module was developed to reflect the key educational objectives for the knowledge, processes, values, and attitude educational objectives clearly articulated in Year 12 Political and Legal Studies. In addition, *Moldarvia* was designed to support students' demonstration of the outcomes outlined in the unit Law and Politics of the Constitution. Through the module, students apply the theory and concepts learned to a practical scenario in order to enhance their understandings and demonstrate relevance in a real-life context. The overarching learning outcomes in the Western Australian *Curriculum Framework* have been embedded in the online curriculum module. These statements "describe the principles underpinning curriculum. [They] set out the overarching outcomes to which all Learning Areas contribute [and] outline the scope of curriculum and teaching, learning and assessment strategies which help ensure that students achieve outcomes" (Curriculum Council of Western Australia, 1998, p. 11.). The *framework* is underpinned by the philosophy of outcomes-based education and lifelong learning and articulates learning outcomes that all students are expected to demonstrate from Kindergarten to Year 12 (Curriculum Council

of Western Australia, 1998). *The Curriculum Framework* is mandated by the Parliament of Western Australia through the Curriculum Council Act (1997).

Partnerships: Creating Moldarvia

During the development phase, the teacher provided the information about the country, the political parties, and participants. Both the teacher and the teacher librarian worked together to embed the outcomes from the *Curriculum Framework* into the module on developing the primary source analysis documents; on the research hyperlinks and print resources available for students to extend their knowledge; and on the tasks and development of the generic documents and templates designed to support students as they worked through the module. The teacher librarian was responsible for the design, layout, and creation of the Web site.

In order to create a real-life context where students could put their theory into practice, the country *Moldarvia* was born and a scenario established with the question: What do we do now the revolution is over? *Moldarvia* is a mythical country located in central Europe, surrounded by Germany, Austria, and the Czech Republic. To engage the students actively and develop a real-life context, an entire country was developed, with all aspects covered including political, social, economic, geographical, and historic elements. The online curriculum module is a synthesis of the discipline inherent in the Society and Environment Learning Area. Students are provided with comprehensive information, data, graphics, and pictures to make the country real and the issues surrounding the revolution contemporary and relevant. Students are required to have a clear understanding about every facet of the country if they are to design and develop effectively constitution that meets the needs of the people and reflects the unique characteristics of the country. Every country is different, and such difference must be reflected in the constitution, which provides a critical framework for a nation's political and legal institutions. By creating an entire country and placing the major task in a real-life context, the module aims to show students that political events do not occur in isolation. On the contrary, politics is about real people, their culture and belief systems, and both internal and external economic and political influences.

A real-life scenario was developed that incorporated a Prince, an American billionaire's daughter, and a populace who have become disenchanted with their political and legal institutions. Members of the military staged a coup d'etat and overthrew the monarchy, which has been an important political institution. A Revolutionary Council has been established representing the six major political parties in the country. The role of the Council is to guide the development and implementation of a new constitution for *Moldarvia*. Newspaper articles outline the reactions of the Revolutionary Council, politicians, and the media in France, Russia, and the United States (primary source analysis). These articles are designed subtly to convey poli-

tical messages and overtones and set the context for the Declaration from the Revolutionary Council of *Moldarvia*. In the Declaration, the interim government establishes the integrity of *Moldarvia* as a sovereign state while a new constitution is being formulated. (Task 2 requires the students to read the Declaration and discuss its significance in an online discussion forum.) The Declaration contains links to real documents and is designed to help the students understand that *Moldarvia* is vulnerable socially, economically, and politically. *Moldarvia* is in fact in the middle of a major constitutional crisis.

Students are required to role-play and form groups of six, with each student role-playing a particular character on the Council. They are provided with a biography of their character and information about the philosophy underpinning their respective political party. The Council is required to meet each week, with students each taking a turn as the facilitator and scribe. Four tasks are associated with the online module, which all students are required to complete. Tasks include an online quiz (to ensure that the context is fully appreciated and background reading completed), newspaper article analysis (primary source analysis), participation in an online discussion forum (communication with other teams), and finally, the production of an annotated constitution. This final task requires students to work as a team (Revolutionary Council) in order to develop a constitution. Students are required to apply the knowledge they acquire from the course material (which deals specifically with the Australian constitution) and their research to the task of developing a new constitution for a foreign country.

Support documentation was developed and built into the module. This documentation is designed to encourage independent learning and to provide scaffolding and a framework for students as they work through the tasks and participate in team discussions. Research conducted by the postdoctoral fellow at Sevenoaks indicates that many students do not feel they have the necessary skills to conduct their inquiry either efficiently or effectively when using online resources (Aldridge et al., 2001). The support documents have been designed to provide students with a starting point, direction, and/or assistance. These generic documents include information and templates on how to write paragraphs and summaries, research techniques and note-making skills, how to reference information accurately, how to work in a team environment, meeting protocols and techniques, and how to prepare an annotated constitution. The documents and templates are stored in the DPMS database and available by hyperlink for students to download and keep for further reference or to use while completing their tasks.

Moldarvia represents a totally integrated approach to teaching and learning and is designed to provide students with a holistic learning experience. The module was developed to cater to individual student needs and recognizes the various starting points and previous experiences of individual students by providing them with access to a range of support documents and

resources (both online and print) and a learning environment that is self-paced and accessible at all times. Students build on their prior knowledge, and through reflection of the learning experience, construct their own meaning to reach new understandings and further skill development.

Student Outcomes

At the end of the module, the teacher and the students conducted a feedback session to discuss the module and the learning experience created by the online curriculum. Students found the experience interesting and relevant. They made connections between their study of the Australian Constitution and the development of a new constitution for *Moldarvia* and were actively engaged in discussions about political and legal issues. In research being carried out by Dr Jill Aldridge, the research fellow at Sevenoaks, students have generally found the modules of online curriculum engaging, relevant, and interesting (Aldridge et al., 2001). This is an ongoing, three-year study into the changing learning environment at Sevenoaks and how this is affecting students and teachers at the College. Student feedback on the *Moldarvia* module of online curriculum supports these early findings. Students became so immersed in the role-play and the authenticity of the context that one even commented that she would like to visit *Moldarvia*.

Working effectively in teams is a learned skill. Each individual in a team brings to the collaborative environment different perceptions and experiences. Good team members recognize and accept these differences and utilize the individual strengths of each team member. A major outcome of the *Moldarvia* experience for the students was the recognition of the difficulties inherent in working effectively as part of a group or team. All team members brought a particular history with them (provided by the personal biographies) and political philosophy. Students readily recognized and commented on the changing nature of their participation in the teams. They actively reflected on their input, as well as on the contributions of their peers, and this reflection resulted in changes in behavior and processes.

During the general debriefing and feedback session conducted by the teacher at the end of the program, all students agreed that they had participated in an unforgettable learning experience. (This session was monitored by Dr. Aldridge, and her observations and findings will be included in her student interviews and current research for 2002.) Students found the module relevant to their own life experiences and could easily relate the concepts and understandings to the Australian political and legal context. Students achieved the main aim of this particular module of online curriculum: they were actively engaged in political debate and discussion. The final task required that each team write an annotated constitution for *Moldarvia*. These documents not only outlined the three levels of government, but contained a running commentary on why the team had included certain aspects or institutions in their constitution and how they expected it

to work in practice. Although the annotated constitutions produced by the student teams varied in depth and breadth, it was evident that all students in the course had achieved a contemporary and practical understanding of constitutional issues and how political power is enacted in a realistic context.

By participating in this online curriculum module, students were able to demonstrate the outcomes articulated in the unit Law and Politics of the Constitution. In order to complete the tasks successfully, students were required to apply the information they had acquired in the course to an online simulation depicted in a credible and realistic context. In addition, as they participated in the module, student learning expanded to include other concepts studied in later units in the Year 12 course. The module provided an effective foundation to enable students to apply their knowledge and to acquire a sense of realism in their efforts to think politically.

Conclusion

Online curriculum modules currently being developed at Sevenoaks have been designed to provide students with a flexible learning environment that allows for individual preferences and learning styles. Students are presented with a range of options and opportunities to explore curriculum in contexts that are engaging, relevant, and interesting. Online curriculum as it is evolving at Sevenoaks is helping to develop independent learners who take greater ownership and responsibility for their own learning experiences, thus developing the skills necessary for lifelong learning. A major factor in the successful ongoing development of online curriculum at Sevenoaks is the collaborative staff partnerships being forged. Some staff are already exploring partnerships with outside agencies and small businesses (Drugs.com and Product Development modules of online curriculum). Perhaps in the future, students will also become active participants in the design of online curriculum, and thus become true partners in their own education.

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Author Notes

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George Sekulla is an accomplished teacher in the Society and Environment Learning Area, and is currently one of the Western Australian representatives on the Le@rning Federation's Studies of Australia Project Expert Focus group (the Le@rning Federation is a federally funded program designed to provide support for the Schools Online Curriculum Content Initiative). He has developed online courses in WebCT for economics, history, and political and legal studies. George has been a partner in the development of the *Moldarvia* module of online curriculum, the Student Services Web site at Sevenoaks and Drugs.com, a teaching-learning online module that is the result of an active partnership between Sevenoaks Senior College, Curtin University of Technology, and Mission Australia. He is also the Program Coordinator of Student Services and Activities at Sevenoaks where he leads the unique Teacher Advocacy and Student Support Programs.