Abstract

In school reform discussions, the need for quality teachers arises as a pressing concern. In the same way that teachers plan and manage the learning of their students, so to do they need to track and understand their own learning. This project created a Knowledge Management Tool that assists teachers in addressing and meeting their learning needs. LearningPath is an integrated personal development site and resource portal for teachers' professional development needs.

Master's Project Analysis
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Learning Problem

Ensuring that America has quality teachers has become a focus of educators on all levels. While the rhetoric of increased student performance rings loudly, underlying many efforts to revitalize education is the notion that quality teachers are an absolute necessity. To this end, teachers are bombarded with numerous workshops, conferences and courses that they are expected to utilize to foster their professional growth. Little unifying thought is given to the path of this learning. Additionally, when this learning does occur, the transfer into meaningful understanding is often minimal.

Therefore, teachers need some tool to help them plan, manage and reflect upon their learning.

The primary goals of LearningPath are:

- To provide teachers with an individually tailored learning plan.
- To allow them to be mindful of creating their own learning path.
- To give them a structure to reflect upon their learning.
- To give them a structure to record their learning.

Audience

This design is specifically tailored to address the learning needs of all teachers. Whether private or public, all teachers are in a situation where learning is a priority. Additionally, all members of the school community can benefit from professional development. With all members of the school committed to improving their learning, the ultimate goal of enhancing student learning will be met.

Therefore, the primary audience is comprised of teachers and eventually, administrators. Subsequently, given the research that suggests quality teachers produce higher levels of student achievement, the secondary audience would then consist of students.
Theory/Research

In researching the field of teacher professional development, the Center for Research on the Context of Teaching at Stanford proved incredibly helpful in providing a foundation in both contemporary research and guiding theory. The work done by Stacey Pelika, Joan Talbert and Milbrey McLaughlin for their upcoming work on Teacher Profession Development provided me with a unified theory. Their research on the Students at the Center program and the Bay Area School Reform Collaborative (BASRC) combined with their wealth of insight, confirmed the overwhelming need for a better, more mindful approach to teacher professional development. Additionally, the works of Linda Darling-Hammond, Hank Levin and Richard Elmore proved to be invaluable guides for thinking about and reforming teacher learning.

On a deeper theoretical level, the authentic educational approach espoused by John Dewey and the conception of making learning visible as discussed by Collins, Brown and Holum in their work on cognitive apprenticeship, served as strong rationale for the need to create a visible, highly authentic learning tool for teachers.

Design Process

This project came to light through a highly iterative, goal-directed design process. After researching and attempting to develop two previous projects, the challenges imbedded in them led to the discovery of this clear learning need. With problem in mind, thorough research was undertaken to determine the needs of teachers for professional development. After gaining a strong sense of these needs, conceptual prototypes were created and tested out with teachers and professional development researchers. Finally, a working prototype was created and tested again. Minor changes were completed and the prototype now stands ready to be enhanced and put into full production.

After being inspired by close friends and LDT classmates, I set out to research the space of teacher professional development. I was extremely fortunate to have a good friend who has spent the past four years researching and writing about this very topic. After receiving a wealth of information from her, I set out to create a rough initial prototype. With this complete, I returned to my expert and gauged her opinion on the direction I was heading. Although disliking the color scheme, she saw the usefulness of the project and encouraged me to continue. Once I made more changes and added a few more features, I met with my advisor, Prof. Shelley Goldman to gauge her reaction. This conversation led to the creation of the Portfolio as a place to record and track professional development opportunities. Once I added this feature and completed a full use scenario, I tested the concept on three teachers at Keys School. All three were excited about the idea and wanted to eventually complete their own learning path. The one perplexing issue that arose in two of these tests centered around the idea of lesson planning. One user in particular thought this section should provide actual lesson plans and not information on lesson planning. Another thought both would be good. Since my focus is on professional development and not curricular content, I feel it is beyond the scope to add
in lesson content to this tool. However, it did confirm that there exists a need to have a unified place to find lesson material.

Once these tests were complete, I put a few finishing touches on the site and prepared it and the poster for the LDT expo. During the event, I received positive feedback from both of my reviewers and numerous individuals who stopped by to take a look. I intend to continue the development of LearningPath and I hope to make it accessible in some format by next fall.
Product Description

Learning Path offers information on all aspects of teacher professional development. The central focus of LearningPath is a customization engine that provides tailored professional development information and a portfolio tracking feature that allows teachers to actively manage their learning progress. Along with these two features, the information that comprises LearningPath will be available to teachers in searchable Knowledge Base. Future additions include a function that will allow teachers to form learning communities both virtually and live and an area that will allow administrators to track and plan the learning for the entire school.
My LearningPath
As teachers enter information about their educational background, teaching experience and learning goals, LearningPath scours the wealth of resources available and serves up an individualized learning plan. This plan consists of conferences, classes, online forums, educational opportunities and career options. Additionally, each teacher will have their own Learning Agent who will guide them through their chosen path of opportunities and ensure their ultimate learning success. This human agent will be available to fine-tune the teacher’s learning path, assist them in their learning opportunities, help them to reflect up on their learning and support them along the way.
Michael,
Here is your personal Learning Path to help you achieve your professional teaching goals. As you take courses and engage in other forms of professional growth, reflect upon and record your experiences in your portfolio. Click below to access your portfolio.

Online Training TeacherUniverse
Enhancement Courses
more

Classes available in your area. Santa Clara County Office of Ed.
CSU-Hayward
more

Discussion Forums MyCommunity
Tapped In
more

Educational Opportunities Stanford University - LDT
San Jose State University - Instruct Tech.
more

Conferences CUE - Computer Using Educators
NECA - National Educational Computing Association
more

Career Opportunities Palo Alto Unified - Systems Administrator
San Rafael High - Technology Specialist
more
My Portfolio

Once teachers have created this plan and begun to partake in events along their LearningPath, they will be able to reflect upon and record this information in their Learning Portfolio. This portfolio will be easily accessible whenever they need to recall or relate their learning opportunities. If a teacher wants a refresher on any of the learning opportunities that they have participated in, they simply return to their portfolio and search for them. When they do, they will find a wealth of information, contacts and resources pertaining to their prior learning. Additionally, if teachers are changing jobs or applying for certification, all of their professional growth opportunities will be readily accessible in one central location.
My Community
This feature provides teachers with a shared learning community in which to interact and further strengthen their teaching. Teachers could form virtual chat rooms with others who have similar interests or find colleagues in their area to get together with and discuss ideas and strategies. Additionally, list-serves and other asynchronous discussions could occur that would be organized and accessible through a searchable Knowledge Base.

My SchoolHouse
Lastly, MySchoolHouse provides administrators and entire schools with the ability to define and develop a holistic approach to learning. Ideally, administrators would use this space to track and manage the learning of both themselves and the faculty. Full school learning opportunities could be recorded here as well as individualized learning strategies for each teacher. In this age of accountability, this would be one way that administrators could assess the learning of their faculty.
Full Master’s Project summary

Initially in the process of developing this Master’s Project, John Wong and myself begin developing a project around the LeapPad learning system from LeapFrog. We spent a month working on designing the most effective method to deliver information and content to teachers and students through the LeapPad. Our concept was based upon LeapFrog’s LeapTrack idea, which would turn the LeapPad into a full functioning assessment and content device and create a Information Management System for teachers to track, monitor and plan the student learning. Our goal was to create the best system and implementation method for turning the LeapPad into an ideal teaching and learning device. After various considerations around the best approach to this design, meetings with advisors of differing opinions and questions around the true learning problem, we felt it best to pursue other projects. At this point, I set out to create a teacher planning and communication device that would allow for the easy creation of lessons and subsequent communication with parents and students. This endeavor proved to be a bit more than was possible and therefore I scaled down the project to focus specifically on a web-based tool that would address the communication needs and desires of parents and teachers at Keys School. After considerable interviews with both constituents, it became fairly clear that meeting the needs of both parents and teachers would be extremely difficult. This realization, along with a newly found inspiration for my original LDT interest in teacher learning, led me to the creation of LearningPath. At this point, there were only a few weeks before the projects were due and not an ideal amount of time left for development, yet I spent countless hours creating what is now LearningPath.

Acknowledgements

Many individuals inspired and assisted in the creation of this project. The primary inspiration came out of conversations with members of the LDT community, in particular, Tacy Trowbridge. Building upon this idea, the work of Stacey Pelika, Milbrey McLaughlin and Joan Talbert of the CTC provided the foundational support that grounded the concept in reality. The faculty and staff of Keys School have provided unending support and encouragement. In particular, the willingness of many of them, particularly Brenda Sincaglia, to lend their input, was invaluable. Equally valuable has been the love and support of my family and friends.
**Next Steps**

In order to fulfill the mission of LearningPath more development needs to occur to create and enhance all of the features. While this prototype shows an overview of the possibilities, a fully functional model would need to be created around a robust database-driven system. Additionally, questions to its effectiveness and usability will continually need to be addressed.

Ideally, schools districts or individual schools would buy into the idea and encourage teachers to utilize and benefit from the creation and ongoing reflection upon their own learning paths.

**Reflections**

In working through this project, many issues arose that complicated my work and made it difficult to endure. After spending countless hours on our first project, John and I were extremely frustrated to receive completely contradictory information from our two advisors. After realizing the difficulty in attempting to address the issues raised by both, we agreed that it was best to regroup and start anew. With newfound enthusiasm, I set forth on my next challenge, assisting teachers in creating lessons and subsequently, allowing them to easily communicate with parents. This again proved to be more difficult than I had anticipated for a couple of reasons. The primary challenge proved to be narrowing down on an element that was manageable for a project of this scope. Additionally, and even more challenging was the dilemma in trying to rationalize the teachers’ desire for ease of use with the parents’ for more information. Ultimately, this project proved too unwieldy in the end. Unfortunately, at this point, it was not far from the actual due date of the project. With the good fortune of a gem of an idea, I set forth on building my final project, the LearningPath. What ensured the success of this over the previous endeavors was the fact that I had finally identified a real learning need and could manageable come up with a solution. In the LeapFrog situation, it is now clear that we had a solution, but no real problem for it. In the teacher/parent communication project, a problem existed, but the solution was very difficult. In the end, this project showed me the value of being open to new ideas and being extremely flexible. Additionally, the overarching question of “Where’s the learning?”, coupled with the design methodology of finding a problem and creating a solution, rang loudly. I only regret that I did not come to my final project sooner. I would have thoroughly enjoyed spending more time finessing some of the features and adding more to make it truly successful.