

ZPD in Shops

Assignment #1: Grounded concept, application, and implications paper  
Applying the concept of the “zone of proximal development” in secondary shop Classes  
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## INTRODUCTION

The zone of proximal development is an effective concept for teaching in secondary shop classes. This paper is divided into three sections. First, I discuss the concept of the zone of proximal development and how it pertains to teaching shop courses in secondary schools. Then, I explain how the zone of proximal development can be applied in the shop class: first through our culture; second, through imitation, and; third, through mutual teaching/learning/scaffolding. Third, educational implications are discussed. Finally, the paper closes with a summary.

## THE ZONE OF PROXIMAL DEVELOPMENT

The zone of proximal development (ZPD) was developed by Vygotsky (1978). It is a concept that explains the optimal point or time at which a person can learn and develop cognitive abilities. This concept makes the point that learning is not limited to the developmental level of the person, but rather that development can be increased, pulled along, by properly thought out teaching/learning. Of course learning must be matched, to some degree, to the point just above the person's developmental level. If a person is taught too far below their developmental level, they may become bored and disinterested; if a person is taught too far above their level of development, they may become frustrated and possibly quit. This is why it is particularly important as parents, teachers and educators to teach to and learn at the proper developmental level within the zone of proximal development.

Vygotsky separated development into two levels. The first level, he called the actual developmental level: this is the person's developmental level that has been established usually through testing. This developmental level has been completed; it is looking at past development. If a person is given tasks within their actual developmental level they will be able to solve these tasks or problems independently without the help of others. The second level, he called the

potential level of development. This is the potential level a person may achieve if they are being given help from others; it is looking to future development. It was found that children, when given assistance by others, were able to achieve at developmental levels much higher than their actual developmental level. What the child can achieve with the assistance of others is a much better way of determining what a child is on the verge of developing. As Vygotsky (1978) said, “the zone of proximal development... is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined in problem solving under adult guidance or in collaboration with more capable peers” (p. 86). The ZPD describes the point at which the child is capable of internalizing new concepts; the mind is continuously developing. “These functions can be termed the ‘buds’ or ‘flowers’ of development rather than the ‘fruits’ of development” (Vygotsky, 1978, p. 87). Once a child internalizes the new concepts that were introduced in the zone of proximal development, they then become part of the child's actual development. “What a child can do with assistance today she will be able to do by herself tomorrow” (Vygotsky 1978, p. 86).

Language begins as communication between the child and his caregivers and later it becomes inner speech; this inner speech, finally, begins to organize the child's thoughts and this verbal thought becomes the foundation for mental functions. Language is considered one of the psychological tools which is, “...social in the sense that they are the products of social cultural evolution” (Wertsch, 1985, p. 80). Language is used to think to plan and to problem solve. It is how we communicate with others and ourselves. Once internalized it is a sign used to plan, think, decide/control, direct behaviour. Language is a powerful tool for teaching in the shops. Shop teachers need to think aloud; to model their inner thoughts to assist the students in constructing their own inner thoughts.

## **EDUCATIONAL APPLICATION: REFLECTIONS ON CULTURE, IMITATION AND SCAFFOLDING**

### **CULTURE**

Culture can be defined as the past, the present, our language, the generation and sharing of ideas and skills: all that makes a Canadian a Canadian, an American an American, or any other race or society who they are. Vygotsky's core belief is that human learning or development is due to the interactions between people and their social environment. Knowledge is acquired through interactions with people, cultural artifacts, and tools such as language, traditions and technical knowledge. These sociocultural interactions have a dual-purpose: "... not only do they make possible the integration of a growing child into the culture, but they also transform the very way the child's mind is being formed" (Education, n.d.). We are to some degree a product of our culture, because we learn from others within our culture, and as we learn from culture we internalize it. When we internalize it, we change it to suit our needs and make it ours. "The essence of cultural- historical development is that 'through others, we become ourselves' (Vygotsky, 1931/1997, p. 105). "...every function is primarily social and passes through similar processes in the course of development" (Scrimsher & Tudge, 2003, p. 295).

We as teachers and students must realize that the tools and technology we use are there for us because past teachers and students like ourselves passed this information on to us. The teachers and students need to construct/negotiate an environment, a culture within the classroom that feels safe for everyone; a place where mistakes are not seen as failures, but as opportunities to learn. There must be a connection between cultures and people within the classroom so that everyone

feels they are part of and fully contributing to the class. What I am teaching in the classroom must be seen as meaningful to me as a teacher, to our culture, and to the students in the classroom. “Again, for teachers to be able to teach effectively, it is incumbent on them to learn about the home backgrounds of the children in their class” (Scrimsher & Tudge, 2003, p. 304). In shop classes, speak and discuss the history of where the skills originated. For example, why did welding develop, how did it change the culture at that time, how does it affect our culture today, how does welding effect us or you as an individual, what are some of the future outcomes of learning welding in this class? Discuss this history with the students as an entire class and in small groups. Go on field trips to look at the cultural accomplishments, artefacts and tools of other cultures. Bring in professional welders to discuss their careers, and how this skill has given them a tool that has helped them find meaning within our culture. Teachers should encourage everyone to talk amongst themselves individually or in groups and to help one another. Bonus points are given to students who help others. The teacher should make it her duty to get to know every student, find out where they come from, their goals, their likes and dislikes, what inspires and motivates them, their strengths and weaknesses, their troubles. We learn from what makes up our culture, we learn from one another, relationships are crucial and we all need to feel that we belong and are needed; therefore, we need to know and care for one another.

## **IMITATION**

Imitation is a very powerful learning/teaching tool; in fact, children are experts at observation and modelling and this is the method used to acquire language in most cultures. Vygotsky (1978) has postulated that a person “...can only imitate that which is within her developmental level” (p. 88). Imitation is a concrete way to instruct individuals who are learning a task or problem that is within their zone of proximal development. I have used the word

imitation, because this is the word Vygotsky used. I believe Vygotsky used the word imitation, because he was comparing animals with young children. The words, mimicking or imitating refer to simple tasks that we expect animals to be capable of doing. Children's learning through modeling and "... observation goes far beyond mimicking what they see and hear" (Rogoff, Paradise, Arauz, Correa-Chavez & Angelillo, 2004, p. 12). "Concreteness is now seen as necessary and unavoidable only as a stepping stone for developing abstract thinking-as a means, not as an end in itself" (Vygotsky 1978, p. 89). This previous statement by Vygotsky makes clear that he understood the power that imitation and modeling have as a teaching tool. We are, after all, in the real world. When we, the caregivers of students, show students how to do something, we cannot avoid the concrete action that we must do; to teach a student how to speak, to walk, to weld, we must actually speak, walk and weld. For Vygotsky (1978) to say, "Concreteness is...only a stepping stone for developing abstract thinking" (p. 89) he is not saying that concreteness or modeling is not an effective teaching tool. I believe what he is saying is that abstract thinking, development of the mind/cognition is what makes humans so unique and our ultimate goal is to continuously improve the developmental level of our students abstract, cognitive abilities. Concreteness/modeling is one of the best and most effective methods of achieving and developing abstract thinking. We model one another, relationships are central to the ZPD. Who do we model? People we look up to, people we trust, people we think are better or more capable than us. "All the higher functions originate as actual relations between human individuals" (Vygotsky 1978, p. 57). Imitation, observing, modeling are how individuals learn from our culture throughout our lives.

Imitation is an effective way of teaching/learning. Anyone who's had young children will recall how they copy words and actions of the people and programs around them. This very

powerful and concrete method of learning begins externally and later becomes, through multiple acts of imitation, a part of the cognitive understanding of the individual. Observing, imitation/copying or modeling does not only mean watching an actual person do something. It also means doing what has been observed. It could also mean, listening to stories, reading a book, looking at pictures or graphics or watching movies. People can imitate many skills/behaviours that they do not understand or are incapable of doing properly the first time, but these skills/behaviours are still within their level of development. This imitation is within the ZPD, a point in time, where the best learning can take place.

Imitation in the shop areas is a particularly valuable teaching/learning method. A more capable teacher or peer who is modeling how to weld must be sure that the student is able to see and hear everything that is being modeled. The teacher shows how to weld and during the process of the welding the teacher is explaining through language and action how he is welding and what he is thinking about as he is welding.

Then the teacher observes a student as they are imitating, doing the welding themselves. The teacher then explains as the student is welding what is being done correctly, and what needs to be changed. If need be, the teacher will hold the student's hand and guide him or her in the proper method of welding. If the student has achieved a satisfactory imitation of what the teacher has shown, they will then be allowed to continue to weld or imitate the teacher without the teacher observing. More advanced peers could also teach the students. A student will then ask for help if they need it and they will also bring a sample to the teacher to see if the task has been done successfully. The teacher may go back several times to show the student how to properly weld. Once the student has produced a good weld, he should then teach another student how to

weld through modeling. Teaching/learning through observation/imitation/modeling is one of the most effective and concrete ways of teaching in the ZPD.

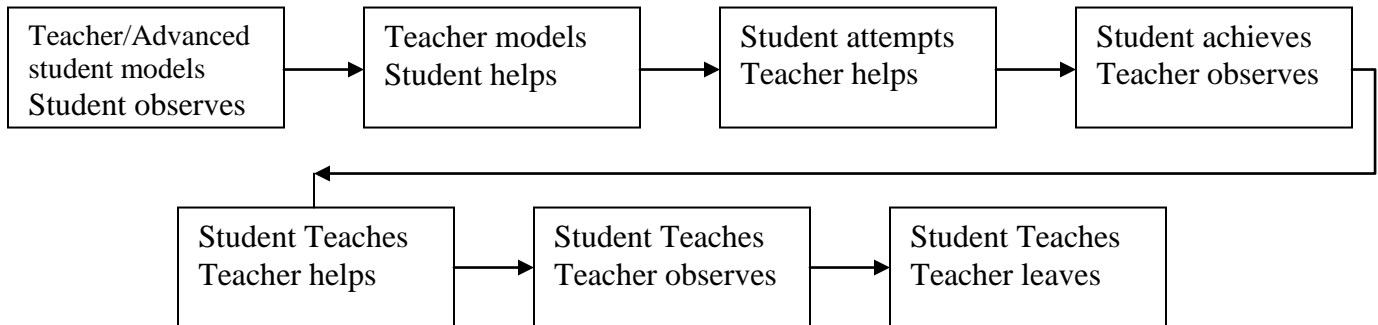


Figure 3

Illustration of how modeling and observation proceeds with teacher/more advanced peer. Students can also teach the teacher.

## SCAFFOLDING

Learning/teaching in the ZPD is achieved by scaffolding, which is assisting a person, providing supports. But also, learning and teaching is bidirectional, as the child learns and teaches the teacher also learns and teaches. When new concepts and skills are being introduced students are given sufficient support to promote learning. In the shop area, these supports would include, but are not limited to modeling and mediated support in developing new technical skills, finished samples, Jigs/templates and guides, resources, meaningful/motivating tasks and projects. This support is temporary and as the student acquires success the scaffolding is progressively removed. The teacher and students need to adjust the scaffolding to make sure that the task is just ahead of the student's development in the ZPD so optimal learning/teaching can occur, thus, avoiding possible frustration and boredom. To begin, the teacher regulates most of the scaffolding, but the student eventually provides self-scaffolding through intrapsychological functioning/internal thought. "...Language enables children to provide for auxiliary tools in the



solution of difficult tasks, to overcome impulsive action, to plan a solution to a problem prior to its execution, and to master their own behaviour” (Wertsch, 1985, p. 28). “Both teacher and child are involved in teaching and learning” (Scrimsher & Tudge, 2003, p. 301).

Within Vygotsky’s ZPD, teaching by a more capable adult or peer is essential. Even here Vygotsky is revolutionary. Teaching means both teaching and learning; the teacher must teach, but also learn from his or her students and the students must learn, but also teach the teacher. There must be collaboration between teacher and student, a meeting of cultures, they must answer together. “Classrooms must be places in which all children, as well as their teachers, are actively engaged in the teaching/learning process” (Scrimsher & Tudge, 2003, p. 304). An example of teacher/learning may be: a student who is south Asian informing or teaching the instructor how jewellery is made in India. Scaffolding is a person helping another person to achieve the task or skill that they could otherwise not achieve. Examples of scaffolding may be offering leading questions, initiating the solution, and then have the child finish it; show them how to use the tool we need evaluation to help us see if students are understanding what we are teaching. Ongoing pre, formative and summative evaluation can help us find the students that need extra help and give us insight into how we can change our teaching practice to help these students to achieve success. Teaching and learning can benefit from assessment. Formative assessments are effective in promoting student learning and providing constructive feedback to the teacher and student. Students mark their own tests and tests are part of the learning process. When it comes to testing and doing assignments or building projects, students need different lengths of time to complete them. Part of helping a student finish a task may be just to give them more time to complete it. If a student needs more time, then the student should be given more time.

## **EDUCATIONAL IMPLICATIONS**

What would be the implications of implementing the ZPD? There would be both positive and negative implications. The positive implications would be the improvement to the education system. More students' individual needs would be addressed within the classroom as a whole because everyone, teachers and students alike would be teaching/learning from each other. The culture in the classroom would be more inviting, motivating and stimulating because everyone is learning in their ZPD, nothing is below or too far above their developmental level. Students would become life long learners because they would have a history of positive education and they would be encouraged to continuously expand their and others potential.

There are some negative implications. For example, the initial cost of educating difficulties about the ZPD and having smaller class sizes would be seen by many as too expensive. It may also take time to convince people to implement the ZPD; many teachers, students and administrators are so used to the old methods some will not change.

## **SUMMARY**

Although implementation of the ZPD would not be easy or inexpensive to start, it may be considered as one of the most effective and practical teaching/learning concepts at this time. Vygotsky's ZPD is revolutionary. It states that learning pulls development to higher levels. That people can achieve beyond their actual developmental levels with the assistance of teachers, or peers that are more capable. The school system would benefit a great deal if it was implemented as a Vygotskian style apprenticeship program for new teachers. At the moment, expert teachers are retiring or becoming TOC's. These experts should be hired full or part time to apprentice the new teachers in Vygotsky's methods. I believe this would bring radical changes to the teaching system. Teaching in the ZPD produces minds that are sensitive to learning, increases abstract

thought, and provides more meaningful and deeper learning. It involves a reciprocal nature or relationship between the sociocultural milieu, the teacher and the student, the concrete and the abstract. If teachers and students embrace the ZPD it may change the way we teach and learn.

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