

Transportation Cycling Courses: Their Purposes, Their Problems

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By Bruce A. Mol M.Ed. © 2004

Abstract:

This paper inquires into the state of transportation cycling courses to determine if they can be analysed similar to training for work or economic survival courses and what that analysis will reveal. This inquiry questions the goals and the vision of transportation cycling courses, relates the history of transportation cycling courses as well as the beliefs and practices regarding learners and teachers, the content and context of the courses, as well as the planning, evaluation, the dilemmas of practice transportation cycling courses present. The final section contains a critique of the purposes and problems of transportation cycling courses and concludes that some obstacles preventing consistent course delivery are the lack of consistent funding for programs, disagreement regarding the need for transportation education, and the ability of cyclists to take on the many roles associated with being a transportation cycling instructor.

Introduction:

This paper examines transportation cycling courses using a framework that systematically examines instructional curricula as a culture, not merely as content. Examining curriculum as a culture invites us to dialogue with course material, ask why it exists, analyse and assess its intent, underlying beliefs and practices. Using a framework designed to inquire into the state of training for work and/or economic survival, this paper questions the goals, vision and history of transportation cycling courses, as well as the beliefs and practices regarding learners and teachers, content and context, planning, evaluation, dilemmas of practice and ends with a critique of the purposes and problems of transportation bicycling skills courses.

According to education theorist Pamela Bolotin Joseph, there are six prominently used cultures of curriculum in use in North America today. Some curricula are meant to develop the individual, some to develop society, and some are in response to a needed situation, like a computer course needed to retain one's job, or DVD player/recorder instructions to perform a task. Though it can be argued that cycling transportation courses are all about developing personal skill, or about training segments of the general public in a transportation mode, benefiting all road users – and thus a great part of our society – this paper treats transportation

cycling courses as if it were training for work and survival (Bolotin Joseph, 2000B) to draw out the similarities between the two and examine what is needed to ensure the success of transportation cycling courses.

Goals, Visions, History, Beliefs and Practices, Learners and Teachers, Content and Context, Planning, Evaluation, Dilemmas of Practice, and Critique of transportation cycling courses.

Goals

Eight people are gathered in a community centre classroom for a cycling course. For a variety of reasons, they have decided to take CAN-BIKE 2, a twenty-hour certificate course developed by the Canadian Cycling Association (CCA). Two women are preparing to take a bike vacation and want to know more about highway riding. A traffic planner needs to know more about cycling for her job – she did not receive cycling specific training in university. One couple has signed up; she is really keen to learn more about cycling, he has been riding since he was a kid and is unsure what could he possibly learn. Two security officers have to pass the course to keep their jobs on a bike squad at a local shopping mall – one of them has not ridden a bike in twenty-five years. One participant can hardly balance her bike but she is determined to ride across Canada for her fifty-fifth birthday that is quickly approaching.

Most people are looking for skills, two are looking for knowledge and another two do not care about skills or knowledge, as long as they pass. With the exception of the spouse, all the participants have a direct reason to be taking the course. If the instructor follows the course plan, in twenty hours spread over a few weeks, all the participants will improve their knowledge and the physical skills regarding cycling safely in traffic. They will learn about the safe mechanical operation of their bikes and a little bit about nutrition and equipment choices as they relate to efficient cycling.

The agenda for the day is written on the chalkboard of the classroom. The instructor begins the lesson on intersection and lane positioning using large diagrams and leading participants into discussions about each type. Later, after introducing the four different types of falls listed in the instructor manual, the instructor surveys participants about their cycling accidents. Compiling a large list on the board for all to see, the instructor then compares the accidents described by class members to collision statistics and draws participants into a

discussion about accidents/collisions and how they can be avoided. The information is presented one step at a time to build up knowledge and a confident attitude toward cycling safety; intersection positioning is taught before types of collisions, followed by collision statistics and ways to reduce collisions.

Outdoors, the instructor gathers the participants in a vacant parking lot and has them ride a straight line while hand signalling. This assessment is the beginning of an ongoing assessment of participant skills. The skills are structured easiest to hardest, culminating in emergency manoeuvre training. The instructor demonstrates the skill to be acquired, watches, and gives constant feedback about the skills displayed by the participants. Difficult skills are broken down to the level appropriate for the learner. When the instructor is confident that participants do not pose a safety threat to each other or road users, everyone takes part in a street ride to practice what they learned about traffic lane intersection positioning.

In the first ten hours of CAN-BIKE 2 lessons, scheduled over many days, the knowledge and attitudes that participants acquire enable them to handle their bikes on most urban streets. Participants are expected to practice skills between lessons and then demonstrate them the next time the group meets. In the second ten hours of lessons, participants learn advanced traffic skills dealing with: bridges, merges, diverges, high volume and high-speed traffic.

Barb Wentworth, in charge of Cycling Programs with the City of Toronto, writes, “Learning in the CAN-BIKE courses means acquiring better knowledge, attitude and skills.” Knowledge is tested with a forty-question test, skills with a handling test and attitude described as, “the willingness to put into practice the knowledge acquired (1994, p.1.6),” is measured in a road test. As in most cases, everyone passes the three tests. The participants who do well on the tests are encouraged to take additional training to become instructors.

Vision

Transportation cycling courses like CAN-BIKE are based on the belief that cycling is a viable form of transportation that can be undertaken safely and efficiently through the acquisition of knowledge and skills. In the introduction of the 6th edition of *Effective Cycling*, on which CAN-BIKE was originally based, Forester writes that, “Too many people have never felt the real pleasures of cycling because they haven’t learned the easy, safe, and efficient way to cycle” (1993, p. xxii) and in the introduction section of the CAN-BIKE Skills Program Instructor Kit,

Wentworth writes, “We believe we can reduce cycling injuries if we both improve the knowledge and the skill level of all road users ” (1994, ¶1).

Where cycling is recognised as a viable form of transportation, citizens of all shapes and sizes, economic and family backgrounds are able to ride their bikes throughout the city to get to school, work or shopping, for recreation and for the enjoyment it brings. In many parts of Europe, and in Holland in particular, cycling is a major part of the transportation infrastructure. However, North Americans do not view the utility of cycling in the same way as Europeans. Cycling advocates in the US and Canada cannot agree on the best way to create cycling infrastructure. In his transportation commentary, *Listening to bike lanes: moving beyond the feud*, J.A. Hiles notes that some cycling advocates believe it is unrealistic to expect cyclists to always behave ideally and that facilities should be built to account for that reality. Those advocates, Hiles says, recommend we, “Move away from theories that equate bicyclists’ skill and experience with their comfort in traffic, and toward a philosophy that respects as normal and natural a range of traffic tolerance” (1996, p. 3). However, since those recommendations have not been heeded, to a large extent in North America, the goal of transportation cycling education has been to give cyclists the skills and knowledge they need to deal with street traffic and the few, if any, separate bicycling facilities.

The goals of transportation cycling courses correspond to three visions of a bicycling public. One is that cycling enhances the liveability of cities by reducing the environmental stresses on the population. According to Litman et al., “Walking and cycling improvements are critical for creating more liveable communities (2000, p. 2).” The other visions of cycling are to lessen dependence on the automobile and create a healthier population through exercise. Schimek addressed both these visions when he wrote that, “At least in the abstract, everyone is in favor of increased use of these non-polluting, energy-efficient, quiet, and fitness-promoting vehicles” (1997, ¶1).

History

It is difficult to trace the history and former goals of cycling education because of cultural differences in the transportation cycling curriculum. Three examples illustrate the regional differences in the goals of cycling education. In North America, helmet use began only within the last twenty-five years; globally, helmet use is not an accepted cycling safety concept. Even

within North America cyclists are slow to adopt helmets into their cycling regime despite helmet laws and awareness campaigns. Secondly, as mentioned earlier, cycling infrastructure is well integrated with other transportation modes in Europe, but it has only recently been related to sustainable communities in North America. Lastly, cycling skills courses are often perceived as appropriate only for children. Cycling education courses for adults are almost unknown though Forester has been conducting them since 1974 in California (1993, p. xvi).

The development of one of Canada's first cycling safety programs occurred in the late 1940's. According to the Canadian Safety Council website in 2003, a Toronto police officer developed Elmer the Safety Elephant for children in response to the number of traffic collisions involving children (The Elmer Program section, ¶1). KIDS CAN-BIKE is a CCA program that recognises the need for children to understand traffic. According to the Ontario Cycling Association website, children enrolled in KIDS CAN-BIKE "gain experience in making safe traffic decisions on their bikes on residential streets through discussion, bike skills training and on-road practice. They learn the rules of the road, and get to use them to become safer, more effective cyclists" (2003, What is Kids CAN-BIKE?, ¶3).

The forces that influence cycling course availability for children are driven by the social and political aspirations of cycling advocates. Where parent groups determine their children need cycling skills, they push to get training into the school system. For instance, in British Columbia, Canada, a program called Bike Smarts has been approved for use in the school system. That is not to say it is offered, only that it can be offered given sufficient interest by parent and/or teachers and/or other community interests. In a similar vein, where head injuries were thought to be of epidemic proportions, lobbyists argued for helmet laws and now five Canadian provinces have helmet laws.

It has fallen on cycling advocate teachers, parents, and to some extent police and community volunteers, to instruct cycling skills programs in the schools. Many do so without much more than personal experience to guide them in training children. Forester writes, "we few cyclists laughed at the pitiful attempts of American non-cycling adult society to teach toy bicycling to children" (1993, p.505). He goes on to say that they should have helped, rather than laughed, because the next generation of traffic engineers, politicians, judges, teachers, researchers, the list goes on, are now both ignorant of cycling issues and in charge of them (1993, p.506).

The Canadian Cycling Association (CCA) developed CAN-BIKE cycling skills courses for adults in the 1980's. Originally the courses were based on Californian John Forester's first edition of *Effective Cycling*. Since then, through committee work at the CCA and Toronto City Cycling, CAN-BIKE has been modified to include greater Canadian content. As with children's programs, adult programs appear where advocates demand them. Unlike children's programs, adults attend courses for community and environmental reasons, economic and alternative transportation reasons as well as personal fitness and safety reasons.

The teaching techniques for CAN-BIKE instructors were introduced in the 1994 edition of the CAN-BIKE Instructors Kit. These techniques help good cyclists become good instructors and helped insure the standardised delivery of skills programs across the country. Before 1994, instructor candidates learned instructional skills by observation.

The most recent addition to cycling courses has been the introduction of cycling specific course material in university settings. The US Federal Highway Administration (FHWA) recently published a master's level course called the, *FHWA Course on Bicycle and Pedestrian Transportation*. It is available on their website, in pdf form, and includes an admission that some of the references were written from a cycling advocate's perspective (n.d., p. xi).

Essentially, the history of transportation cycling skills and safety training in Canada is short and almost entirely a reaction to safety concerns for children. For adults, transportation cycling courses have only recently been actively sought for mostly personal but some societal benefits.

Learners and Teachers

The beliefs about the learners who participate in cycling courses vary tremendously. Children are thought to have little or no understanding of traffic movement, a poor grasp of what constitutes acceptable behaviour on the road, and less than adequate physical bike handling skills. Children do not question the authority or skills of the instructor. Alternatively, adults are thought to understand the laws and norms of traffic movement and have the physical skills to operate a bike in traffic. Adult learners want instructors to be an expert in all areas of cycling, and they want courses that have little or no homework.

Forester believes American cyclists suffer from a 'cyclist inferiority phobia' that causes them to engage in dangerous behaviour like riding too close to the side of the road and darting

across intersections the wrong way. Cyclists who cycle the wrong way in traffic, or on sidewalks, or without regard for signage etc., may be doing so because previous training or because of intricate personal rationales that have not (yet) been proven wrong (1993, p. 308).

If not a certifiable ‘phobia,’ instructors recognise that some cycling behaviours are dangerous and have to be discouraged in the kindest way. Instructors hope, but do not always find, that adult learners are self-motivated to be there, that they are interested in anything and everything that leads to safe cycling. Besides having to deal with phobias or preconceptions about bicycling in traffic, instructors must be expert bike handlers, traffic handlers and knowledgeable about the possibilities, and ramifications of poor cycling technique and behaviour. Instructors must be able to explain the rationale behind traffic laws and customs and convert dangerous cycling rationales and behaviours of course participants into acceptable cycling behaviours. Instructors, whether they are teaching children or adults, have to be able to analyse the knowledge and skill level of all course participants and work on all those multi-levels simultaneously. Instructors must be guides, coaches, facilitators and demonstrators depending on the needs of the situations. Their expert knowledge of cycling and teaching allows them to be ‘hands-on’ or ‘academic’ depending on what is being explained or demonstrated. Lastly, for certificate level courses like CAN-BIKE 2, Instructors must be able to deliver all the mandated course material.

Content and Context

When children do not receive a standardised cycling safety course like KIDS CAN-BIKE or Bike Smarts, the content of children’s cycling safety courses vary, as noted above, with the perceived needs of the learners and the experiences of the instructor. Courses vary with what adults think children do, and do not, understand about traffic, their personal safety, the limits of their ability, and limits of their equipment. Some cycling safety courses for children focus on helmet usage, but many courses, such as KIDS CAN-BIKE also try to teach balancing skills, awareness of road hazards and practical on-road experience (What is Kids CAN-BIKE? ¶3).

Children’s programs may include indoor activity based exercises using crossword puzzles and colouring to learn cycling and roadway terminology and the colour and meaning of traffic signs. Outdoors, the children are engaged in activities that are meant to develop skills, but not necessarily recognise the limits of their bikes and themselves.

Content for children's courses must also be scrutinized by Ministries of Education if it is delivered during school hours. In Canada, Education is under provincial jurisdiction and, where cycling courses are permitted in schools, the courses must first be formatted to meet provincial education standards and then be reviewed and accepted by the ministry before they can be taught. After school programs do not have the same restrictions.

There is less debate about the contents of the adult transportation cycling courses because, in Canada, the CCA has taken the responsibility to oversee the creation and development, but not the cost of delivery, of the CAN-BIKE program. In the USA, the League of American Bicyclists (LAB) performs the same function. The CAN-BIKE Program makes use of John Forester original concepts about transportation cycling, though his ideas have subsequently been adapted by education committees in response to the changing needs of the Canadian cycling public and local context.

The adaptation of Forester's ideas is to be expected. According to Bolotin Joseph, technical or vocational training "content will be determined by the needs of society" (2000B, p.39). But, unlike technical or vocational training, the benefits of acquiring transportation cycling skills have not been explicitly linked to an individual's success in either the economy or society except in those cases where professional bike squad members require some sort of cycling certification. As yet, there are few monetary incentives encouraging people to seek out transportation cycling courses.

Cycling courses for adults and children usually begin in a classroom and move out, on bicycle, to safe cycling environments such as closed off parking lots. Some children's programs never leave the parking lot. Adult programs, depending upon the level, move from parking lots to quiet urban streets and then on to busy streets. Both the content and context of transportation cycling courses vary with the local needs for the courses and by the course that is chosen to meet that need.

Curriculum Planning and Evaluation

Where children's programs fall under the jurisdiction of an education authority, students are evaluated in the same manner as other school programs. Changes in children's attitude to bike safety are difficult to analyze but there is sufficient evidence to question the value of the shorter children's programs. In *Deaths of Cyclists in British Columbia*, it was noted that, 'a

child's poor comprehension of safety rules may limit the effectiveness of safety education programs because children do not perceive the traffic environment as adults do' (Francis and Justason, P.,1996, p.10). Macarthur, Parkin, Sidky and Wallace (1998) concluded that a brief training program was not effective in improving the cycling behaviour of grade four children in metropolitan Toronto. In an Australian study, Carlin, Taylor and Nolan (1998) had a similar conclusion about the effectiveness of a school based education program and added that the program may produce harmful effects due to unsupervised risk taking.

Outside of school, children's programs can take the form of a Bike Rodeo, where children are tested with mock intersections and hazards, and with sit-down activities where they complete crosswords or sentences regarding bike safety. Where helmet use programs are presented, these programs are usually evaluated by helmet use counts, before and after training. The results of the numerous helmet use studies reported in North America all indicate helmet usage goes up after training.

The effectiveness of adult transportation cycling courses is also difficult to evaluate. There are no studies that indicate safety or skills are enhanced because of participation in a cycling course. Overall, curriculum planning outside of school-based programs is very informal and evaluation of anything but helmet use is difficult to gauge.

Dilemmas of Practice

The problems and challenges facing cycling instructors are plentiful. The benefits of transportation cycling skills courses are not greatly understood, the numbers of people who want transportation cycling skills courses are few, and the attraction to teach transportation cycling skills courses, is little. As well, Schimek lists the following cycling dilemmas:

The challenge of cycling education is not so much the material to be taught but (1) overcoming the fear of riding in traffic (2) overcoming the tradition that bicyclists do not have to obey traffic laws, and (3) overcoming the idea that knowledge of balancing and steering equals bicycle riding competence. People who are afraid of riding in traffic might be persuaded to take a training class which helps them gradually build their confidence (1997, Dilemma #8 section, ¶ 7).

Schimek recognises that skills are only one component cycling education and that somehow cycling instructors must help course participants overcome fears and inappropriate behaviours. Cycling instructors, therefore, must be skilled practitioners and counsellors of emotion as well as protectors and promoters of road etiquette. It can be very difficult to find people to fill that job.

Schimek also recognises training is a tough sell because most people do not realise they need it, few cycling advocates promote it, the few programs in existence are not well known and their efficacy is in doubt because they have not been tried en masse (Dilemma #8 section, ¶ 7).

Funding is another dilemma. Cycling programs come and go with funding and interest. Funding sponsors are difficult to attract and keep because cycling courses cannot be shown to be effective at reducing collisions – the rationale needed for insurance bodies – nor can cycling courses be shown to increase ridership – the rationale needed to create facilities. When program funding is cut, instructors move on and find more stable employment. When funding is gathered again, new instructors must be found.

The dilemmas of age are also apparent in cycling training. Cycling education is geared to children and mature adults, and not much in between. Children are exposed to cycling education in the early years of schooling. Adults are exposed voluntarily, but teens and young adults do not often partake of training, for reasons described by Schimek above, and because they cannot afford to.

The cost of courses is another problem. Cycling courses are treated no differently than boating or swimming courses; participants have to pay the full costs of instruction. Usually only working people can justify the expense.

Aside from dilemmas and challenges, cycling skills training harbours a few ironies or ‘chicken or the egg’ situations. More people cycling can mean less motorists, traffic congestion, and pollution. More people cycling can also mean increased fitness and decreased healthcare costs. But between now and the day when traffic is less congested and the air is cleaner, some people will have to ride in congested traffic and air polluted areas risking harm to themselves and their health.

The challenges cycling instructors face implementing this culture of curriculum are many, but courses still take place in Canada in instruction hotspots, Victoria, Vancouver, Saskatoon, Ottawa and Toronto, because cycling education advocates live in those areas.

Critique

The problems inherent to individuals and society in delivering transportation cycling courses are primarily concerns for the effectiveness of the curriculum. One problem identified earlier is that transportation cycling courses have not been proven effective in reducing crashes. This is not entirely a cycling education problem. In a follow up study six years after their initial Canadian driver education report in 1996, Mayhew & Simpson reviewed four reports subsequent to their own and found they all concluded with similar findings. “The preponderance of evidence failed to show that formally trained students have a lower frequency of crashes than those who do not receive training” (2002, p.ii3).

Another problem with transportation cycling courses is that the structure, delivery and even assumptions about the learners in cycling transportation courses are modelled on a culture of curriculum that offers financial and economic rewards to course participants that do well. The vision of building knowledge, skills and willingness to conform (attitude), step-by-step, by sitting in a class for a discussion, developing skills in a parking lot and then on the road may address the immediate need of cyclists, but it does not address the emotional and societal needs of cycling education. Bolotin Joseph describes the shortcomings of training for work and survival this way, “there is no vision of working to create a community in which the individuals feel obligation for each other and for the greater society. Furthermore, this limited kind of education has little vision of individual transformation” (2000B, p.48). Because there is no financial incentive to take transportation cycling courses, it may be worth exploring other curriculum cultures hoping to fulfill the implicit (emotional) and explicit (skills) needs of individuals and a way to address the concerns of society – or conversely, provide incentives to cycle.

Conclusion

The framework developed by Bolotin Joseph (2000A) allows for an in-depth examination of transportation cycling courses to determine if the course materials, and its methodology, are meeting the vision of the course and needs of the participants. The skill-based assumptions North American society has about cycling polarizes competing perspectives into camps that argue skills can be learned to share the road with motorists – so build wider roads, versus those who think

skills cannot be learned – so build separate roads. The result of this debate stifles development of ways to reduce traffic congestion and pollution, and produce traffic safety and sustainable communities.

Developing new instructors and remaining a cycling instructor is difficult. The hours are poor, and so is the money, yet courses still appear in some locations because of a belief in one of the visions for cycling. It may be a belief that bicycling is an indicator of a more liveable community, or the belief in a possible future where air is cleaner and people are healthier.

It is time for cyclists to stop taking sides regarding on-road or separate facilities and find ways to promote the creation of safe facilities and education for the public, politicians, city planners and engineers, about the needs of the local context. As well, until incentives can be developed for instructor and course participants alike, cycling advocates can fill the gap by becoming instructors at large. In their own way, every cyclist can informally counsel cyclists by being protectors and promoters of road etiquette. Cycling well is cycling advocacy – if cycling can be demonstrated as a safe activity to engage in, it will not be long before more people engage in it for work, for pleasure and because society as a whole will benefit from it.

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