

Prospective Teachers' View on Geography Fieldworks

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Abstract

The purposes of the study are to examine thoroughly the components to constitute individual perceptions of prospective teachers concerning important acquisitions of geography fieldworks and to facilitate its applicability as a teaching method through their own observations and suggestions, and in this context to obtain information about the nature of geography learning in fieldworks. 155 female (43%) and 207 male (57%) prospective teachers (n= 362) participated in the research. Obtained data were analyzed both qualitatively (i. e. inductive analysis) and quantitatively (i. e. Chi- square test). According to the results: (1) 4 main conceptual categories based on the prospective teachers' observations concerning the important acquisitions of fieldworks were identified. (2) 6 main conceptual categories based on the prospective teachers' facilitative suggestions for the application of fieldworks were identified. (3) Significant differences were not discovered between the principal categories of observations and suggestions with regard to the prospective teachers' gender. The study concludes that observation is a powerful research tool in determining, analyzing, and interpreting about prospective teachers' individual perceptions concerning fieldworks as a teaching method. The rationales behind this method are to improve the prospective teachers' communication skills through a broad range of contacts, their own life experiences, and more importantly encouraging their independent thinking.

Key Words

Geography Fieldworks; Brain-based Learning; Social Interaction; Self-regulated Learning Strategies; Prospective Teachers.

In today's globalized world, the fundamental principle of the current educational change is to develop innovative spirit and ability to implement innovative ideas. Innovation in education is mainly targeted at building lifelong learning awareness, self-improvement, learning methods of how to be successful people in life, raising innovative individuals who have leader spirit in community development and creating courageous entrepreneurs to implement their ideas. In this context, educators must guide their students to reach information and develop their skills of perception of change, managing, and organizing (Özgül, 2009, p. 2). Moreover, educators must focus on planning in geogra-

phy education in order to take long-term measures to solve environmental challenges (Yılmaz, 1995, p. 263).

Defined fieldwork may include field teaching, field trip, field research or field camp (Dando & Wiedel, 1971, p. 291). The geography fieldworks should not be confused with picnics or short class excursions (Lewis, 1968, p. 53). Lonergan and Andreson defined fieldwork as any arena or zone within a subject which is outside the constraints of the four walls classroom setting where supervised learning can take place via first hand experience (Lonergan and Andreson, 1988, p. 64). Another definition was adopted by Gold et al. (1991, p. 85), who go on to categorize fieldwork into five types of activity: Short field excursion in limited time, tours in extended travel, residential courses in extended travel and time, multi-location activities, and project works. Much has been written on the use of fieldwork -in all its guises- in undergradu-

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ate geography degree programmes (Cottingham, Healey, & Gravestock, 2002). Being at the heart of geography (Gold et al., 1991, p. 85) and an essential component of undergraduate education in geography (Haigh and Gold, 1993, p. 30; Kent, Gilbertson, & Hunt, 1997, p. 320), fieldworks are perceived by many geographers in these ways. Not only it is considered essential, but also it is considered by both academics and students to be an extremely effective and enjoyable learning and teaching method (Fuller, Gaskin, & Scott, 2003, p. 96; Gerber, 2000, p. 199), and as intrinsic to the discipline as clinical practice is to medicine (Bligh, 1975, p. 67). Stoddart and Adams (2004, p. 46) suggest that, "the field is central to the way we have experienced Geography". The field reveals the complexity of geographical problems, but that in the field this complexity then becomes amenable to comprehension. Gardiner and Unwin (1986, p. 172) used computers on fieldworks to analyze results. They identified difficulties in rekindling student enthusiasm on return from a fieldwork, analysis and debriefing being best done while fresh in students' minds. This integrated approach gives student ownership of the data, analysis, and subsequent presentation of results. Thus, technology may play a useful role in enhancing effectiveness of fieldwork, and it may be used as an integral part of all stages of fieldwork: preparation, practice, and debriefing. The further advantage of integrating information technology with fieldwork is that, as a by-product, it provides enhanced information technology key skills training (France & Ribchester, 2004, p. 54).

Does fieldwork improve student learning? Given the range of activities into which fieldwork may be categorized, this is a supremely difficult question to address. What is certain, however, is that "effective learning can not be expected just because we take students into the field" (Loneragan & Andreson, 1988, p. 70). Fuller, Rawlinson, and Bevan (2000, p. 208) suggest that a "descriptive-explanation" approach, although both styles involve active learning "by doing" (DeCharms, 1984, p. 295; Healey & Roberts, 2004, p. 37). Effective field teaching requires careful design, and alignment of the activity within the wider course/module or degree programme structure. The principle of alignment is one whereby all components of teaching support one another. In fieldwork the teaching method, assessment procedure and climate created by staff-student interaction, as well as institutional and curriculum issues, all ought to be balanced if the activity is to be aligned (Biggs, 2003, p. 94). Gold et al. (1991, p. 73) and Goh and Wong (2000, p. 115)

identify a series of guidelines aimed at improving the effectiveness of a field course through careful consideration of course design, location, curriculum, preparation, themes, staff supervision, skills development, data analysis, and post fieldwork activity. The need for carefully integrated preparation, debriefing, and feedback are also emphasized by Kent et al. (1997, p. 325). There is a sense in which well-integrated fieldwork contributes to the notion of a spiral curriculum. Student can revisit concepts covered in class during fieldwork, when they are also expected to acquire and display deeper levels of understanding (Bruner, 1960, p. 36). Fieldwork greatly enhances student engagement and students' understanding of geographical features and concepts.

It allows students to make observations and investigations in the short-term (Güngördü, 2006, p. 97). Observation-based fieldworks give opportunities for on-site field activities and observations (Büyükkaragöz & Çivi, 1997, p. 213; Küçükahmet, 2006, p. 65). Fieldwork is perceived by many geographers as being at the heart of geography. However, there are many obstacles related to its implementation such as financial and timing matters (Aykaç & Aydın, 2006, p. 214; Karabağ & Şahin, 2007, p. 115).

Purpose

The purposes of the study are to examine thoroughly the components to form individual perceptions of prospective teachers concerning important acquisitions of geography fieldworks, to facilitate its applicability as a teaching method through their own observations and suggestions, and in this context to obtain information about the nature of geography learning in fieldworks. Specifically, the following parameters guided this study:

1. What are the important acquisitions of the fieldworks as a teaching method according to prospective teachers?
2. What facilitative suggestions for the application of fieldworks as a teaching method according to prospective teachers?
3. What conceptual categories can be derived from the observations and suggestions of prospective teachers concerning the important acquisitions of fieldworks?
4. How do the principal conceptual categories differ across participant's gender?

Method

Participants

The participants for our study included a total of 362 prospective teachers enrolled geography programme in the Faculty of Education of Ondokuz Mayıs University. The proportional division of gender was as follows: 155 females (43%) and 207 males (57%).

Data Collection and Analysis Processes

In this study, research parameters were designed in the first stage to analyze the observations and suggestions of prospective teachers concerning fieldworks. In the second stage, research parameters were configured and were converted into observation-oriented and open-ended questions. And in the third stage, pilot administration ($n = 100$) was conducted using conversation strategy, Instrumentation experts ($n = 10$) review the open-ended research questions to establish content and face validity. Some modifications were made according to the recommendations made by these experts. The prospective teachers were asked to write a composition about important acquisitions of the fieldworks as a teaching method through their own observations and facilitative suggestions for the application of fieldworks. The participants were given one class-hour (roughly 45 minutes) to write their impressions using own handwritings. The compositions of participants that were the main data sources of this research were qualitatively analyzed and the categories of observation and suggestion were constituted concerning fieldworks.

The observations of participants were categorized considering their impressions concerning fieldworks and 4 categories were constituted: (1) Enhance social interaction, (2) improve self-regulation learning, (3) establish a new lecturer-student relationship, and (4) deepen the orchestrated immersion process. In order to code the data, the observation categories were given 1, 2, 3, and 4 respectively.

The suggestions of participants concerning fieldworks were categorized under 6 categories (1) The further and different location units can be visited, (2) fieldworks can be organized more frequently, (3) the institutional contribution can be provided for sustainability of fieldworks, (4) the fieldworks can be added to theoretical courses as application-hour, (5) seminars and exhibitions can be organized reflecting fieldworks, and (6) academics in different major can be invited to fieldworks. To code the data, the suggestion categories were given 1, 2, 3, 4, 5, and 6 respectively.

Our procedure for analyzing the observations and the suggestions encompassed the following stages: (1) Naming stage, (2) sorting stage, (3) organization stage, (4) categorization stage, (5) establishing reliability and validity, (6) analyzing the data quantitatively with SPSS (Statistical Package for the Social Sciences).

1. Naming stage: In the first stage we simply coded the names of observations and suggestions (“enhance social interaction”, “establish a new teacher-student relationship”, etc.).
2. Classification stage: In the second stage, we went through the raw data again and analyzed each observation and suggestion to characterize its elements. By using this approach, we were able to break down the suggestions and the observations into analyzable parts, looking for salient features, common elements and similarities.
3. Organization stage: In this stage, we revised the compositions of prospective teachers in three times and reviewed the raw data to choose a sample expression for each suggestion and observation.
4. Categorization stage: In the fourth stage, 4 main conceptual categories based on the prospective teachers’ observations concerning the important acquisitions of fieldworks were identified. Moreover, 6 main conceptual categories based on the prospective teachers’ facilitative suggestions for the application of fieldworks were identified. During this stage, we coded each category title.
5. Establishing inter-rater reliability rate: Detailed reporting the study data and clarifying the results are important criteria for validity in a qualitative research (Yıldırım & Şimşek, 2005, p. 257). In this research, we asked two outside researchers to independently sort the 362 observations into the 4 categories. We then asked each coder to read each observation expression and place it in one of the 4 conceptual categories the specific observation could fall into. To estimate the inter-rater reliability rate, we used Miles and Huberman’s (1994, p. 48) Formula (i.e., $\text{Reliability} = \frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}}$). Accordingly, the 362 observations were classified by the two independent coders and the level of agreement between their individual ratings and ours was 1 and .99, respectively. Miles and Huberman (1994, p. 62) suggest that the final inter-coder agreement rate in qualitative data analysis should approach or exceed 90%. In our study, one coder identified

4 main conceptual categories based on the prospective teachers' observations concerning the important acquisitions of fieldworks (1. Foster observation, comparison and questioning skills, 2. Comprehend theoretical and abstract knowledge, 3. Strengthen relationships in social life, 4. Boost teacher-student dialogue) – i.e., reliability: $362/362=1$. The second coder identified 4 main conceptual categories, but put forward the dimensions of cognition and affection of the inert vigilance process instead of orchestrated immersion process (1. Improve observation, investigation and comparison skills in field, 2. Create the inert vigilance, 3. Support social life, 4. Increase teacher-student interaction) – i.e., reliability: $362/362+1= .99$.

6. Quantitative data analysis with SPSS: In the last stage, we entered the study data into the SPSS software to calculate frequencies (f) and percentages (%) of the observations and suggestions as well as to compare our dominant categories across the participants' gender (Pearson Chi-square tests) (Büyüköztürk, 2005, p. 42).

Results

General Findings

- Participants identified a total of 4 well-articulated conceptual categories based on their own observations concerning the important acquisitions of fieldworks. The conceptual categories based on participants' observations include the following: (1) Improve self-regulation learning (53%), (2) Deepen the orchestrated immersion process (32%), (3) Enhance social interaction (9%), and (4) Establish a new lecturer-student relationship (6%).
- 6 main conceptual categories based on the participants' facilitative suggestions for the application of fieldworks, were identified. The suggestions of prospective teachers concerning fieldworks include the following: (1) Fieldworks can be organized more frequently (39%), (2) the institutional contribution can be provided for sustainability of fieldworks (22%), (3) the further and different location units can be visited (19%), (4) the fieldworks can be added to theoretical courses as application-hour (11%), (5) seminars and exhibitions can be organized reflecting observations of fieldworks (5%), and (6) academics in different major can be invited to fieldworks (4%).

- Significant differences were not found out between the principal categories of observations and suggestions with regard to the prospective teachers' gender.

Main Conceptual Observation Categories

Category 1: Improve Self-Regulation Learning: It appears from the data that this category were identified by 79 female prospective teachers (51%) and 113 male prospective teachers (54.6%).

Category 2: Deepen the Orchestrated Immersion Process: There are 50 female prospective teachers (32.3%) and 63 male prospective teachers (30.4%) under this category.

Category 3: Enhance Social Interaction: Category 3 were identified by 16 female participants (10.3%) and 19 male participants (9.2%).

Category 4: Establish a New Lecturer-Student Relationship: This category were identified by 10 female participants (6.5%) and 12 male participants (5.8%).

Main Conceptual Suggestion Categories

Category 1: Fieldworks can be Organized More Frequently: This category were identified by 52 female participants (33.5%) and 89 male participants (43%).

Category 2: The Institutional Contribution can be Provided for Sustainability of Fieldworks: There are 37 female prospective teachers (23.9%) and 43 male prospective teachers (20.8%) under category 2.

Category 3: The Further and Different Location Units can be Visited: There are 31 female prospective teachers (20%) and 37 male prospective teachers (17.9%) under this category.

Category 4: The Fieldworks can be Added to Theoretical Courses as Application-Hour: Category 4 were identified by 17 female participants (11%) and 24 male participants (11.6%).

Category 5: Seminars and Exhibitions can be Organized Reflecting Observations of Fieldworks: There are 13 female prospective teachers (8.4%) and 6 male prospective teachers (2.9%) under this category.

Category 6: Academics in Different Major can be Invited to Fieldworks: This category were identified by 5 female participants (3.2%) and 8 male participants (3.9%).

Discussion

In the present study, we investigated the components to constitute individual perceptions of prospective teachers concerning important acquisitions of geography fieldworks, to facilitate their applicability as a teaching method through their own observations and suggestions, and in this regard to obtain information about the nature of geography learning in fieldworks.

Especially after 1950's, the importance of fieldworks in geography that has become an applied science, was accepted as an indisputable fact. Fieldworks both convert theory into practice and allow individuals to grow by making observations and offering concrete suggestions instead of letting individuals grow by dealing with abstract problems at a table. In this respect, fieldworks are important and dynamic components of geography education. The following findings were determined in this study: Fieldworks have more positive effects on cognitive learning products and processes compared to traditional methods. Fieldworks have positive effects on affective features such as motivation, anxiety, and attitude. Moreover, fieldworks create a conducive environment for occurring supporter learning products such as sharing and criticizing. The perspectives related fieldworks of prospective teachers involved in these courses at university were carefully examined and two crucial results were achieved: (1) The education is not limited to indoors during this course and (2) There is nothing dubious about if the similar courses to fieldworks will be instructed in other geography departments of universities in our country, this approach will contribute to education significantly. In this regard, according to the situated learning model, the cognitive processes such as cognition, learning, remembering, and thinking are very close processes with context. The context should be considered for intelligibility of cognitive activities. The context includes physical and conceptual structure of problem, the aim of the activity and social and physical environment of problem (Rogoff, 1984, p. 6). The most stressing point of the situated learning related learning in school is the situations encountered in school are different from in real life. Rather, most of the learning activities in school are in abstract, artificial, and detached from real life context. Therefore, so few of acquisitions that are obtained in school can be transferred to real life. The opportunities should be created for the use of new acquisitions in various contexts. The situated learning is based on these ideas. In order to

overcome differences between acquisitions that are obtained in school and the real life, the authentic activities should be implemented and teaching should be made within a context. The students implement authentic activities and thus they comprehend how to use their acquisitions in real life. Briefly, in addition to presentation of information and practice of exercises, students should be given opportunities to share their new acquisitions with different people in several cases. Thus, students can realize how to adapt their acquisitions to the environment (Açıkgöz, 2007, p. 232). They indicated that the fieldwork developed mutually supportive relationships (Huan, 2004, p. 59; Lew, Mesch, Johnson, & Johnson, p. 482).

As can be seen in this context, the fundamental ideas of fieldworks are appropriate for brain activities, the natural learning processes of the students, the principals of contemporary learning, and attainment of permanent learning. In light of this argument, concrete approaches should be exhibited concerning implementation of fieldworks in geography departments in our universities and the best and most contemporary geography education should be aimed to provide prospective teachers with them who want to become teachers to train thousands of young people.

On the basis of preliminary findings, we offer the following interim recommendations to maximize the effectiveness of fieldwork:

Fieldwork should be clearly integrated with the course/programme/module of study, thus providing opportunities for deeper learning in which students are building upon a foundation of previously acquired theory, as per the spiral curriculum model of learning (Bruner, 1960, p. 36) and concept of alignment.

Residential fieldwork provides opportunity for learning to be reinforced during "evening conversation" and in less formal lecturer-student and student-student interactions.

Students respond positively to hands-on data acquisitions. Field use of technical instrumentation and research design and data analysis are valued.

Moreover, research is particularly needed on: (1) The impacts different modes of fieldwork have in terms of enhancing student engagement and strengthening cohort identity, (2) The long-term impacts of a range of different types and contexts of fieldwork to elucidate the effectiveness of fieldwork.

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