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Full Length Research Paper

Professional development needs of school principals in the context of educational reform

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Retraining and upskilling of human resources in organizations are deemed vital whenever a reform takes place, or whenever a huge policy is being implemented on a comprehensive scale. In an education system, officers, principals, and teachers need to be retrained so as to enable them implement and manage new changes, which are manifested in the form of new policies and strategic development plan mooted by the government. This article presents a study on the core professional development needs of school principals in the context of educational reform in Oman since 1998. The study used the survey method in which the respondents comprised 80 principals in Muscat, Oman. The study found fifteen prominent needs factors or domains which were necessary for professional development of school principals in Muscat specifically. The factors apparently could be group into two kinds of leadership needs, namely instructional leadership and transformational leadership. Also, principals contended that a systematic model relevant for professional development programs of principals ought to be designed and used by the Ministry of Education of Oman. New leadership competencies were needed to implement new policies and changes.

Key words: Reformative policy, policy implementation, school management, leadership, professional development.

INTRODUCTION

Omani society is becoming ever more complex and rapidly changing, especially in an environment that promotes modernization, urbanization, and globalization. With this justification, it is commonly assumed that the education system needs to be revamped and upgraded in order to prepare the new generation of human resources with contemporary knowledge and skills in all fields and sectors needed for social and economic development of Oman. Hence, Oman's education system underwent an extensive reform since 1998 whereby the school structure and curriculum were changed from the traditional general education type to the basic education

type. The most striking features of basic education are the progressive continuity of primary-secondary education curriculum and the intensive use of information-communication technology (ICT) in classrooms and school administration (Ministry of Education, 1998).

With basic education in place, school leadership and management in Oman has to change also, and to that effect, many professional development programs have been organized by the Ministry of Education (MOE) in order to upgrade school principals with the necessary and relevant competencies, knowledge, and dispositions

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so that they could function and perform effectively as school leaders and managers. The reason is that effective school leadership and management has been argued as the key determinant factor for ensuring excellence and development of schools (Fullan, 2002, 2004). It is also thought by Omani educators that school leadership and management strongly affects teachers' instructional performance and, consequently, students' academic performance. However, effective school leadership and management does not come naturally in the appointment process of school principals; hence, it is essential that school principals must undergo professional training programs, which can impart the necessary competencies, knowledge, and dispositions to enable them to function and perform effectively in the educational reform context.

Omani educators' thinking is supported by abundant research literature. For example, Tirozzi (2000) points out that school principalship development as procedures and practices that set out to improve the professional knowledge, skills and attitude of school principals. Reimers and Reimers (2000) note that improving school principals' knowledge and skills through continual professional development is a critical step in improving school effectiveness, educational effectiveness, and students' learning performance. Ng (2001) reiterates that training opportunities should be provided to principals everywhere to enable them to perform their job according to the required level and quality. Raelin (1986) states that the professionals have a high degree of specialization within their specific areas of work, and they are trained to work independently and to self-govern their work.

Daresh (2003) argues that the principal's role has changed rapidly in the past thirty years, from a middle manager position in the 1970s to an instructional leader in the 1990s. Darling-Hammod (2003) and Drake and Roe (2003) predict that the only truly successful leaders in the next 30 years or so will be "change leaders" - those who can manage and lead change. In other words, the principal's role has changed from influencing the implementation of specific policies and duties to making innovations and leading changes in the school as an organization (Fullan, 2001). School principals should innovate and transform their schools into a learning organization, in tandem with contemporary trends and developments in other countries. As a consequence, principals will have to face new changes and challenges, which the potential to overwhelm them (Fullan, 2007). For this reason, school principals should uphold professionalism by continuously striving for excellence and upgrading their knowledge and expertise. Knab (2009) states that the continual demand for development and improvement in education calls for a strong and creative leadership.

Professional development is usually conceptualized in

many ways. Based on an international review of the literature by Reimers (2003), professional development is commonly termed as continuing education, in-service education, in-service training, continuing professional development, on-going assistance, human resource development, recurrent education, and continuous career development. Professional development basically focuses on three areas of staff development: knowledge, skills and attitudes. Darling-Hammond and McLaughlin (1995) describe professional development as the way that individuals develop their understanding and knowledge and improve their skills and abilities to improve their performance in their current position or to prepare themselves for a future position. According to Guskey (2000), professional development can be thought of as processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, the learning of students.

Professional development programs are diverse and different from each other, depending on clients from various sectors of businesses and public agencies, but they all share one common starting point, i.e. needs identification and analysis. As for our study, the most relevant analytical model for professional development needs of school principals is the one proposed by Salazar (2002), which comprises fifteen domains as follows:

- i. Setting goals and determining outcomes for the school, teachers, and students
- ii. Designing, implementing, and evaluating the school curriculum
- iii. Building Teacher Professionalism and Skills
- iv. Understanding measurement, evaluation, and assessment of school performance
- v. Understanding students' development and learning
- vi. Acquiring problem solving skills as a school leader and manager
- vii. Acquiring decision-making skills through sharing with teachers and students
- viii. Acquiring research skills for understanding issues and problems in the school
- ix. Mastery in ICT utilization
- x. Defining core values and beliefs in the school community
- xi. Creating a learning organization for making new changes in the school
- xii. Building team commitment among teachers as professionals
- xiii. Building teamwork skills among teachers of different specializations
- xiv. Mastering effective communication skills in leadership
- xv. Resolving conflicts, developing good relations and positive school culture

We have rearranged the fifteen domains into two categories of leadership: domains i to ix pertain to instructional leadership, while domains x to xv pertain to transformational leadership. Instructional leadership emphasizes on curriculum implementation which involves instruction and learning (McEwan, 2002), whereas transformational leadership focuses on influencing, inspiring, and motivating teachers and parents to work cooperatively together based on core values and beliefs in making reformative changes in schools (Leithwood and Jantzi, 1999).

We have the view that professional development as a reform policy is subjected to policy implementation approaches theoretically. There are two dominant approaches for examining implementation process and outputs in the policy arena, i.e. the top-down approach and the bottom-up approach. In a centralized bureaucratic system, the top-down approach takes a macro view of implementation by examining the process from the standpoint of the initial policy-maker or the policy itself (Harris, 2007; Matland, 1995; O'Toole, 2000). In other words, top-level bureaucrats are largely interested with seeing how well the implementers are in harnessing resources to yield the intended goals and outcomes of a policy. Schematic and systematic procedures, oftentimes, are developed to guide the implementers in executing their job. In addition, constant supervision and monitoring mechanisms are also being put into place so as to ensure maximum success. This is because, in most instances, the implementers are kept in the dark as to what the policy goals, objectives, outcomes, and benefits are. They lack the understanding and direction of the systemic process, and more importantly, democratic participation by the bottom level is not typically encouraged in the implementation design. In Harris's (2007) perspective, top-down models rely on policy decisions made by the top authority and thus reduce the significance of policy adaptation at the bottom level of implementation. Clarity and consistency of goals are often nebulous, and implementation strategies that are generalized to many policy situations are the obvious features of this approach. Researchers consider Van Meter and Van Horn (1975) and Sabatier (1986) as pioneers in focusing on top-down approaches in policy implementation.

Pülzl and Treib (2007) assert that a perfect hierarchical control over the implementation process is hard to achieve in practice and that unfavorable conditions could cause implementation failure they argue that decision makers, who should exert a concerted effort in structuring and preparing the implementation programs. A significant critique of top-down strategies is that they neglect the weight the implementation staff and field workers have on the delivery of policies. According to Sabatier (1986) top-down models start from the perspective of central decision-makers and thus tend to neglect other actors.

Consequently, this approach leads the view that the framers of a policy decision are the key actors and that others are basically the instruments and impediments. As a result, politicians and administrators will be unable to control the implementation process when using this approach (Harris, 2007).

The other approach is the bottom-up approach in which a policy issue or idea from the bottom level go spiralling up each level or ladder of an administrative system and eventually to the top policy-making level, which rethink, plan, and design the necessary policy agenda and strategies in terms of political and economic viability. This perspective considers the entire network of political actors in a particular policy area and it also views implementation as a political process of harmony building and cooperation (Pülzl and Treib, 2007). Fundamentally, this approach focuses on the evaluation made at the micro level of policy enactment as well as the local factors that hinder intended policy outcomes (Matland, 1995). The classical bottom-up researchers are Elmore (1980, 2002) and Fritzen (2005). The criticisms of this approach often accentuate on its overemphasis on local decision making. Its critics argue that central policy-makers are able to set broad policy borders and guidelines that provide a needed structure to policy formulation and implementation (Hill and Hupe, 2002; Harris, 2007).

Purpose and significance of the study

The purpose of this study was to identify and prioritize the important domains of professional development needs of school principals in the Muscat city district. The priority domains and their constituent items obtained from this study would assist the education authority to organize a systematic professional development program for upgrading the knowledge, competencies, and dispositions of school principals in Muscat as well as other regions in Oman, or school principals in other countries.

RESEARCH METHODOLOGY

This research used a translated and rearranged version of Salazar's (2002) survey instrument on professional development needs of school principals, i.e. the instrument was translated into Arabic and the needs domains were rearranged into instructional leadership and transformational leadership categories. There were a total of 67 items in the survey instrument, each having a four-point ordinal scale scored as:

1: not important; 2: fairly important; 3: important; and 4: very important

As for the sample of respondents for the survey, 80 school principals (65 %) were randomly selected from city district of Muscat, Oman. The survey questionnaire was mailed to the selected

Table 1. Internal consistency or reliability of domains in the survey instrument.

No	Factors	Reliability
1	Setting goals and determining outcomes	.753
2	Designing, Implementing and Evaluating Curriculum	.805
3	Building Teacher Professionalism and Instructional Skills	.879
4	Understanding Evaluation of School Performance	.701
5	Understanding Students' Development and Learning	.702
6	Problem Solving	.811
7	Building Shared Decision-making	.742
8	Research Knowledge Skills	.823
9	ICT Utilization	.825
10	Defining the Core Values and Beliefs of Education	.867
11	Creating a Learning Organization	.762
12	Communicating Effectively	.787
13	Building Team Commitment	.796
14	Team working Skills	.821
15	Resolving Conflicts (Building Consensus and Negotiating Leadership Capacity)	.748

principals, and they were requested to return the completed questionnaire in two weeks in a stamped envelope provided. Apart from that, observations and interviews were also made during school visitations to cross-check certain points and issues related to school leadership and management.

RESULTS

Data obtained from the survey were analysed using a statistical package software. It is to be noted here that all respondents gave a response on the scale of either 3 (important) or 4 (very important), which strongly reflected data skewness, but that the principals in this study essentially needed training workshops dealing with all the items in the survey instrument. This is the actual reflection of the intensity of principals' professional needs in an education reform context in a developing country—which could be less intense in advanced countries.

Due to the skewness of data, we were curious to see the reliability of the Arabic and rearranged version of the survey instrument. Table 1 shows the reliability coefficient values (Cronbach alpha values) for the fifteen domains/factor groups of the instrument. Overall, the survey item groups had high reliability values, ranging from .702 to .879. According to Hair et al. (2010), Fraenkel and Wallen (2006) and Popham (1990), Cronbach's alpha of .50 above is satisfactory for internal consistency of the items.

Table 2 shows the overall results of the survey, as indicated by the mean score for all the fifteen professional needs domains that are all accentuated around the mean 3.50, i.e. most survey respondents rated 'important' or 'very important.' The results indicate that in

the reformative policy context in Oman, school principals are in a dire need for professional training programs that could enable them to perform effectively as transformational and instructional leaders in schools. Transformational leadership requires principals to inspire, motivate, and mobilize school staff and students to make the necessary reformative changes in the areas of instruction, learning, school climate, and technology utilization so as to turn all schools to be modernized excellent schools. High quality school facilities, high quality instruction, and high quality learning all happen simultaneously and effectively. Instructional leadership, on the other hand, requires school principals to focus on effective curriculum implementation, teacher professionalism, and student holistic development.

Principals are they key persons in school organization that assume the role of leadership, and they are very influential in shaping teacher professionalism, school improvement, and school performance. In this regard, professional development program should be made for each of the fifteen domains, and thus in Oman, the Ministry of Education should make 15 specific professional development modules for schools not only for Muscat, but for all other regions and districts in the country. Also, other countries in the Gulf region or in Africa or in the developing countries in Asia could learn from the Omani experience.

Furthermore, specific analysis was done for all the items in the survey, according to their domain, using simple descriptive statistics such as frequency, percentage, mean, and standard deviation. Domains 1 to 9 pertain to instructional leadership of school principals in

Table 2. Overall results by mean score and standard deviation (SD) values for the fifteen domains of professional development needs of school principals.

No	Factors	Mean score	Sd
1	Setting goals and determining outcomes	3.4817	.08750
2	Designing, Implementing and Evaluating Curriculum	3.3867	.09609
3	Building Teacher Professionalism and Instructional Skills	3.4975	.08655
4	Understanding Evaluation of School Performance	3.4567	.05686
5	Understanding Students' Development and Learning	3.4400	.07810
6	Problem Solving	3.5020	.06573
7	Building Shared Decision-making	3.4940	.07861
8	Research Knowledge Skills	3.5600	.05354
9	ICT Utilization	3.4880	.09311
10	Defining the Core Values and Beliefs of Education	3.4550	.05802
11	Creating a Learning Organization	3.4817	.06616
12	Communicating Effectively	3.4567	.05508
13	Building Team Commitment	3.4980	.05450
14	Team working Skills	3.4600	.06356
15	Resolving Conflicts (Building Consensus and Negotiating Leadership Capacity)	3.5200	.12349

Muscat, Oman. As for Domain 1—setting goals and determining outcomes—results indicate that principals in a school reform process required training workshops or seminars on practical ways of vision setting, benchmarking outcomes, creating positive school culture, and setting performance standards. These are the main tasks of principals as an effective instructional leader, and the tasks are then translated to the core business of schools, which is curriculum designing and implementation.

As for Domain 2, curriculum designing becomes the top concern of most school principals (83.8% of them) who said that this aspect was very important for their professional development. Curriculum designing should take into account of the diversity of environment and culture so that there is relevance between the lessons learned and the life situation of children in different regions and communities in Oman. Knowledge and skills in the curriculum design domain would help principals in guiding their teachers to modify the curriculum according to students' aptitude level and the local context (McEwan, 2002). Principals also needed training sessions on how to implement the new curriculum effectively and on how to evaluate the curriculum.

As for Domain 3, the main task of a school principal is being an instructional leader, i.e. building teacher professionalism and instructional skills. All items in the instructional domain are highly important. As instructional leaders, principals should demonstrate their competency in being an excellent professional teacher who is capable of conducting in-house workshops on educational goals, education policies, school culture,

teacher professionalism, instructional design and technology, instructional competencies, current research on teaching and learning, and teaching standards and performance (Blasé, 1987). Apart from that, principals must also upgrade master teachers who should then supervise novice teachers. Actually, those are the core tasks of principals, and this means that principals must be chosen and appointed from the rank of high-performance senior teachers with post-graduate qualifications. Principalship is a critical job position because theoretically excellent principalship would yield excellent teachers, and consequently both are the critical variables for the formation of excellent schools (McEwan, 2002).

As for Domain 4, results show that principals need training workshops and seminars on how to improve and evaluate their school performance. They need to know the organizational components of the school first, then the strategies to improve each component, and then the evaluation items for each component. Staff might feel the heat to change and improve, and they would show resistance or other negative reactions. A lot of documentation usually comes along with performance evaluation. It is commonly assumed that school performance is largely centred on students' development and learning performance as well, and this is another aspect needed by principals in their professional work.

Consecutively for Domain 5, instructional leadership skills include developing teachers' instructional skills in classrooms, creating evaluation forms and criteria for student learning and academic performance, and planning

strategies on how to increase school performance. These tasks seem so challenging, demanding, and stressful on principals, and certainly they need expert educators to assist them via workshops and seminars (McEwan, 2002). For effective implementation of a reform policy in Oman, school principals urgently require training in the area of instructional leadership.

Another area of great concern among principals is Domain 6, i.e. handling problems of various kinds pertaining to curriculum implementation, instruction, learning, and performance evaluation. Principals need the knowledge and materials on problem solving process in school management. Analysis reveals that principals essentially needed the knowledge and competencies in: (i) researching the sources and extent of problems; (ii) identifying and classifying problems; (iii) formulating alternative solutions to problems; (iv) prioritising alternatives; and (v) action plan for tackling problems. Principals cannot do those tasks alone; they need a team of people to do damage control.

Problem solving leadership could be made easier through shared decision-making, as in Domain 7, which should involve teachers, students, and parents to share their ideas and to distribute responsibilities to many different groups of people, who could be the source of problems. Analysis reveals that principals needed the knowledge and skills on how to get teachers and students to participate proactively and share their ideas on school improvement. Basically people want to have the sense of ownership or the sense of belonging when they are called for a shared decision-making sessions (Sabatier, 1986). Rules, criteria, facts, alternatives, and intended outcomes need to be laid out specifically in making good decisions. Democracy is the spirit that should be in place when principals insist on sharing ideas in decision-making sessions, and objectivity is a matter of rule of thumb.

Another important need for professional development among principals is the ability to conduct simple research, especially action research, as in Domain 8, for understanding many issues and problems in school management and leadership, and consequently to derive appropriate and relevant solutions to address the issues and problems. Results indicate that principals in the reformative policy of Oman were in need of research knowledge and skills—not to the extent of doing a dissertation or thesis. They essentially needed the scientific mind in: (i) asking the right questions; (ii) searching the relevant literature online to find some answers; (iii) making notes based on observations or interviews in their school to find the answers; (iv) postulating some possible theories that fit the observed pattern of behaviours and values; and (v) getting the right solutions to address the emerging issues and problems contextually.

Another area of instructional leadership for schools in many developing countries is Domain 9, i.e. the utilization of information communication technology (ICT) in school management and leadership. The older generation of school principals seem to believe in 'the good old ways of doing things' and have the ICT phobia. This somewhat inhibits effectiveness in school management and leadership in the contemporary world of internet and globalization. Our study found that school principals were aware of the importance of ICT for enhancing instruction, learning, and management, and they required training programs for upgrading their knowledge and competencies on various softwares and applications that are necessary and useful. It could be seen at this juncture that too much is expected on school principals, and thus principalship appears to be a very challenging job.

The ensuing paragraphs now discuss the professional needs concerning transformational leadership of school principals. Results of data analysis for Domain 10 reveal that principals needed to know what were the core values and beliefs of education in Oman. Generally, among the prevalent beliefs were: (i) education is important for literacy the people and national development in many sectors; (ii) education is for quality of life; and (iii) education is the means for better socio-economic status of individuals. The core values in education were: (i) equal access to education for all children; (ii) high quality of schools and education; (iii) high professionalism in administration and management of the education system, in line with Islamic principles.

Transformational leadership also pertains to Domain 11, i.e. the ability of principals to apply the concept of learning organization in their school. They need to visualize and translate the core values and beliefs into the school vision and strategic plan of initiatives. Professional workshops and seminars would be the best platform for disseminating and instituting those values and beliefs in the education system (Leithwood and Jantzi, 1999). This is the way of learning organization, i.e. an organization that continuously learn to make adaptations and innovations in response to developments and reformative demands in the external and internal environments (Senge, 2006). Our study found that principals required the knowledge and skills for encouraging their teachers to be responsive to professional issues, especially regarding effective instructional approaches and technologies for different subjects and age-groups of children in different localities. There is no one best teaching method that fits all subjects and situations; this is a fallacy if it is so. Apart from this, principals need to know how to teach their teachers via in-house workshops on doing simple research at the school level. Simple research projects can be viewed as a diagnostic tool for teachers to understand issues and problems in schools. Principals need to know how to

create positive learning environments for teachers, students, and parents for the purpose of school improvement and performance.

With regard to Domain 12, school principals in Muscat asserted that building team commitment was deemed vital in transformational leadership. Team commitment was a new word for many principals and teachers, and it was difficult to achieve it in the context many different ethnic groups and cultures in Oman. The results of our study showed that principals needed three capacities for building team commitment: (i) developing a strong and positive relationship among staff, students, and parents; (ii) opening input channels for getting suggestions and sharing ideas; (iii) providing a good mechanism for staff and students to work together and improve.

The next professional need, Domain 13, is building teamwork spirit among school managers, teachers, and students. Teamwork cannot happen if group dynamics is wrong. People must put away their differences and focus on what to be achieved together through mutual support and cooperation. Tribal or ethnic sentiments must be suppressed to form teamwork spirit, and transformational leaders must harness resources and strengths within groups. Group leaders must negotiate and articulate what needs to be done to group members in order to get the intended outcomes. Based on our study, results showed that the biggest concern in forming teamwork in schools was improving school performance, especially students' academic performance and teachers' job performance, according to the standards or benchmarks set by the Ministry of Education. Usually, teams in schools are based on a particular discipline of study or subject area, such as language team, science team, arts team, social science team, cultural team, sports team, and special education team. The team leaders are usually the head of various departments in schools, and they usually have meetings to plan and strategize what needs to be done to achieve the required standards and benchmarks. Teamwork spirit and commitment can be enhanced through incentives and rewards, or by the realization of ulterior moral purpose in the school vision and beliefs on education (Bass and Avolio, 1990; McEwan, 2002). Good articulation of the higher moral purpose and beliefs certainly should come from the inspirational capacity of a transformational leader.

As for Domain 14, clear communication of vision, goals, approaches, strategies, criteria, and rules surrounding the core business of education and schools is by itself an art of influencing and convincing people, but based on theories, facts, and evidence to corroborate the art. Clarity, logic, and sensibility of words and concepts in spoken language are also the vital elements. Thus, it is imperative for principals to learn the theories of communication and effective strategies in communication. Workshops and seminars on the art of effective

communication should be done by influential personalities who serve as role models.

Another advantage of good communication and articulation of points is conflict resolution through bargaining and negotiation. With regard to Domain 15, there are so many conflicts in school which arise from cultural differences, value differences, misconceptions, prejudices, workload distribution, and disciplinary issues. A transformational leader is one who is capable to resolve conflicts amicably among people, turning negative emotional climate to a positive one. The results of our study showed that principals need the knowledge and skills in managing conflicts, in converting conflicts to positive actions and emotions, in the art of negotiation, and in employing analytical and scientific thinking. The current thinking on this issue is that conflicts are the necessary part of human life which cannot be avoided, and conflicts are good for initiating new changes. Conflicts should not be viewed negatively and thus they should not be suppressed and controlled. Conflicts need to be resolved at the negotiation table by various strategies, such as collaboration, compromise, sharing, and tolerance (Avgar & Neuman, 2013). The objective is striking a win-win situation for all. New changes and perspectives usually arise from discourses in a conflict resolution process.

Conclusion

The results of this study have shown that the school principals in the Muscat city district, Oman, actually do indeed need fifteen areas of professional development to improve their instructional and transformational leadership capacity, especially after the enforcement of basic education reform policy of 1998. Based on this research results, principals agreed that the government, especially the Ministry of Education of Oman, should conduct a systematic training program for school principals throughout the country in order to upgrade and upskill them (Fullan, 2001).

In addition, this study has shown that there is a wide gap between the theory and process of policy implementation. The top-down bureaucratic theory of policy implementation fails to consider diversity of human dispositions, diversity of values, diversity of strategies, and the lack of professional knowledge and skills of policy implementers at the school and district levels, especially whenever a big reform takes place. The top-down bureaucratic theory also fails to consider the importance of transformational leadership of school principals in inspiring and motivating teachers and students toward achieving the goals of basic education policy. And importantly, the top-down bureaucratic theory also fails to address the importance of incentives and

awards for stimulating commitment and motivation of people in policy implementation process. Instead, the tools of monitoring and supervision are commonly applied to steer people to do the right things; usually the more daunting the tools, the more alienated people become. Theoretically, according to Hill and Hupe (2002), positive human dispositions and incentives are two critical factors that affect the rate and effectiveness of policy implementation.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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Full Length Research Paper

Do small rural high schools differ from larger schools in relation to absentee rates in physical education?

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The aims of the study were twofold: (a) to investigate how school size affects absentee rates in physical education (PE) and (b) to examine the experiences of students and teachers at a small rural high school in relation to attendance in PE at their school. The absentee rates in PE among all students (N = 6928 students) in a county in Norway were collected, and interviews with 15 students and two teachers at a small rural high school in the county were conducted. The results showed that the absentee rates in PE were significantly lower in small high schools (<200 students) located in rural areas, compared with larger-sized schools located in communities with more people. Small high schools also produced a lower percentage of students with an absentee rate above 10%. Furthermore, in contrast to small high schools, the absentee rate among girls was significantly higher than among boys in large high schools. Finally, the follow-up study showed that both students and teachers in a small rural high school reported a high level of relatedness, and both teachers and students claimed that this relatedness deterred absenteeism in PE. This finding may help explain the low absentee rates among students at small high schools.

Key words: Absentee rate, physical education, high school size, small schools, large schools, relatedness.

INTRODUCTION

Physical activity is considered a vital aspect of student life in Norwegian schools (White paper 31, 2008). Physical education (PE) is an important subject in school and represents an opportunity for students to engage in physical activity (Fairclough and Stratton, 2005; Morrow et al., 1999). Azzarito and Solomon (2005) claimed that the responsibility of educating children to adopt and maintain a physically active lifestyle is a major concern for schools, particularly with regard to those students who are less physically active in their leisure time. However, it is difficult to promote this type of lifestyle when absentee

rates in PE are high. If schools assume responsibility for educating children to adopt and maintain a physically active lifestyle, it is important that absenteeism in PE be low. Dahl and Kjørmo (1982) reported the average absentee rate in PE among Norwegian high school students to be 10%. They also showed that students with high absentee rates in PE did not participate as much as other youths in sports in their leisure time, a finding supported by Fairclough and Stratton (2005).

Hernes (2010) suggested that more in-depth knowledge is needed about absentee rates in high

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schools. In Norwegian high schools, a high absentee rate may lead to a grade of “no mark” in a subject, and PE is the subject with the highest no-mark rate in high schools in Norway (Rånes, 2011). Students typically start high school at age 16 years, which coincides with the point in their lives when they begin disengaging from physical activity (Seippel, 2005). A recent study by Kolle et al. (2012) found that 43 and 58% of 15-year-old boys and girls, respectively, in upper secondary school did not reach the daily recommended goal of 60 minutes or more of engaging in moderate or vigorous physical activity. Student participation in 90 minutes of mandatory physical activity per week in Norwegian high schools may contribute to increasing the percentage of students who meet the daily recommendation for physical activity.

Several small high schools in rural areas have been closed down and replaced with fewer and larger high schools in areas with more people (cities), presumably as a cost-savings measure because the cost per student increases as school size decreases (Newman et al., 2006; Stiefel et al., 2000). In his meta-analyses, Hattie (2009) identified school size as having a medium-level effect on school achievement. Some studies have pointed out that the attendance rates of students in small schools are higher than those of students at larger schools (Barker and Gump, 1964; Lindsay, 1982). Research has also showed that more students complete high school at small schools than at large schools and that fewer students drop out of small schools (Barker and Gump, 1964; Fowler and Walberg, 1991; Gardner et al., 2000; Pittman and Haughwout, 1987; Werblow and Duesbery, 2009). Barker and Gump (1964), Lindsay (1982), and Coladarci and Cobb (1996) showed that students are more involved in extracurricular activities at small schools compared with students at larger schools. Furthermore, there is greater involvement from parents of students in small schools (Dee et al., 2007; Walsh, 2010), and there exists more supportive leadership and better communication between teachers and students in small schools (Brown et al., 2012; Farmer-Hinton and Holland, 2008). Research has also found that fewer problems exist in connection to violence and discipline in small schools (Barker and Gump, 1964) and that students have greater satisfaction (Lindsay, 1982; Noguera, 2002) and a more positive attitude toward the school environment in small schools (Newman et al., 2006). In addition, studies have shown that social relations are better in small schools (Barker and Gump, 1964; Ready et al., 2004) and that students have more social capital in small schools than in larger schools (Dee et al., 2007). Student engagement is also greater in small schools than in larger schools (Weiss et al., 2010). Howley and Bickel (1999) found that for minority students, small schools were especially positive learning environments.

Some studies have found student achievement to be

better in small schools than in larger schools (Eddy, 2004; Flores and Chu, 2011; Noguera, 2002), whereas other studies have not found small schools to be superior with regard to student achievement (Bradley and Taylor, 1998; Coladarci and Cobb, 1996; Lee and Smith, 1997; Lindahl and Cain, 2012; Ready et al., 2004; Schneider et al., 2007; Weiss et al., 2010; Wyse et al., 2008), suggesting instead that medium-sized schools are superior to small schools and large schools with regard to student achievement. Both Lee and Smith (1997) and Ready et al. (2004) found that performance in mathematics was the best among students in medium-sized schools with 600 to 900 students. However, when the analysis was adjusted for students' socioeconomic status, Lee and Smith found small schools to be the best. Although the studies by Bradley and Taylor (1998), Schneider et al. (2007), and Lindahl and Cain (2012) did not provide any clear evidence showing that small schools produce better learning conditions than other schools, a closer examination points to several methodological weaknesses in these studies.

It is somewhat problematic that the definition of the cutoff point for what constitutes a small school varied a great deal in the studies mentioned previously, ranging from 100 (Lindsay, 1982) to 800 students (Dee et al., 2007). However, schools with fewer than 600 students were typically defined as small schools. In Norway, data about the number of pupils for different school sizes are available for primary school (Statistisk sentralbyrå [SSB], (2000) but these data may be inappropriate for defining cutoff points in Norwegian high schools. In his 2002 study, Noguera (2002) conducted research on the criteria for successful high schools, where students performed independently of their social group or social status. Based on his investigation of several schools in the United States, Noguera (2000) found that the schools meeting these requirements all had one thing in common: the number of students enrolled in these schools was fewer than 200 students. He claimed that these small schools produced social relations and support that were seldom present in high schools in the United States. The students in these small schools enjoyed being there to a greater degree, and the students trusted the staff in these schools much more than did students in other high schools.

Despite a huge number of research articles about school size, studies about absentee rate and school size are lacking overall. Furthermore, recent studies about the importance of school size in Norway are completely nonexistent. Some studies on Norwegian schools were conducted in the late 1960s and at the beginning of the 1970s (Norwegian Council for Research in Schools, 1968; Rasborg, 1974; Sandven, 1968; Utbildnings departementet, 1978, p. 4). For example, a 1968 study by the Norwegian Council for Research in Schools pointed

out that the establishment of lower secondary schools in urban communities in Norway in the 1950s led to a discussion about the quality of school with regard to school size in Norway. Another example is a study by Sandven (1968) on 3,600 students attending lower secondary schools in Bergen, Skien, and Akershus, which found that a higher percentage of students in small schools graduated in difficult subjects than did students in large schools. Sandven argued that this finding might be explained by a better learning environment and atmosphere, better social relationships between teachers and students, and enhanced work effort in small schools. Furthermore, Sandven pointed out that teachers employed in small lower secondary schools were more optimistic in relation to their students' ability to graduate from high school. However, Sandven also concluded that school size had no effect on students' performance levels, motives for learning at school, feeling of safety, and ability to solve problems. In addition, Jørgensen et al. (1975) did not find any relationships between school size and well-being among students in lower secondary school. Jørgensen (1976) also did not find any correlations between school size and disciplinary problems, except that the rate of more serious discipline problems increased with increasing school size. A study on students in Denmark pointed out the advantages of small schools with regard to transparency and communication between teachers and students and between teachers and parents (Koed and Bundsgaard, 1979).

Of the few Nordic studies on school size that have been conducted, these studies favored small schools in some aspects. However, these studies are old and may be outdated. Whether absentee rates in PE differ between small schools located in rural communities and larger schools located in larger communities is one topic that has been unexplored.

Another unexplored topic is whether absentee rates in PE differ among girls and boys in small, medium-sized, and large schools, owing to an interaction effect. Studies have indicated that Norwegian girls seem to experience PE as more problematic and that they are less active than boys in PE (Anderssen, 1995; Holstad, 2012), which in turn may affect absentee rates in PE for girls. According to Azzarito and Solomon (2005), gender differences in PE neither have been highlighted nor have received much attention.

This study has two main aims. The first main aim is to determine whether absentee rates in PE vary among small, medium-sized, and large schools, as well as between girls and boys, and whether absentee rates above 10% are associated with school size. The second main aim is to examine the experiences of students and teachers at a small rural high school in relation to attendance in PE at their school.

METHODS

Sample

The Department of Education in Nordland County, Norway (Utdanningsavdelingen, Nordland fylkeskommune) maintains a database of high school students. Accessing this database made it possible to examine student absentee rates based on school size and gender for all high schools in Nordland County during the school year of 2010–2011 ($n = 6,928$ students). In a follow-up study, we selected the high school with the lowest absentee rate in PE among all the high schools in Nordland. This high school was a small one with a low number of students ($n = 122$ students) and was located in THE rural area with the lowest population ($n = 498$ inhabitants). We selected this particular school for our follow-up study because we were interested in exploring the potential mechanisms between being a small school and having a low absentee rate. The subjects included two PE teachers and all 15 students in the third year of high school; all subjects were interviewed and observed.

Procedure

Small high schools were categorized as those with fewer than 200 students, medium-sized schools as those with 200 to 600 students, and large schools as those with more than 600 students. The dependent variable was the absentee rate in PE (range: 0%–100%). Two independent variables were included in the quantitative study: (a) high school size: small schools (fewer than 200 students, $n = 630$ students from five schools), medium-sized schools (between 200 and 600 students, $n = 2,451$ students from seven schools), and large schools (more than 600 students, $n = 3,847$ students from five schools); and (b) gender (boys = 3,476, girls = 3,452). The small high schools were located in rural areas (population = 2,602 inhabitants, $SD = 1661$), several miles from urbanized areas. The medium-sized schools were located in small towns (population = 4,772 inhabitants, $SD = 1,010$), and the large schools were located in medium-sized towns (population = 24,013 inhabitants, $SD = 13,999$), according to Norwegian standards.

A qualitative design was used in the follow-up study so as to obtain a deeper understanding of how PE was organized and how students experienced PE at the chosen high school. The two PE teachers were interviewed separately, and the 15 students were interviewed in three focus groups, with 5 students in each group. Two groups comprised only boys, and one group comprised only girls. The observations took place during a 3-day fieldwork session among the PE teachers. Several informal interviews were also carried out during the fieldwork. Finally, observations of two 90-minute classes in PE were carried out to examine whether a connection existed between what the teachers and students said and what was actually done.

With regard to the follow-up study, two interview guides with open-ended questions were developed to answer the research question on the experiences of teachers and students in relation to attendance of PE classes. This type of approach was preferred because it provided an opportunity to explore a topic that has not been researched a great deal. The semi-structured interview guide included the following key questions: How is PE organized at the school? What do you think are the key factors that promote students' enjoyment of PE at the school? What are the advantages and disadvantages in relation to PE at the school? How does the size of the school affect students' attendance at the school? Finally, the teachers were informed about the low absentee rates at their school and were asked to identify which factors may explain these

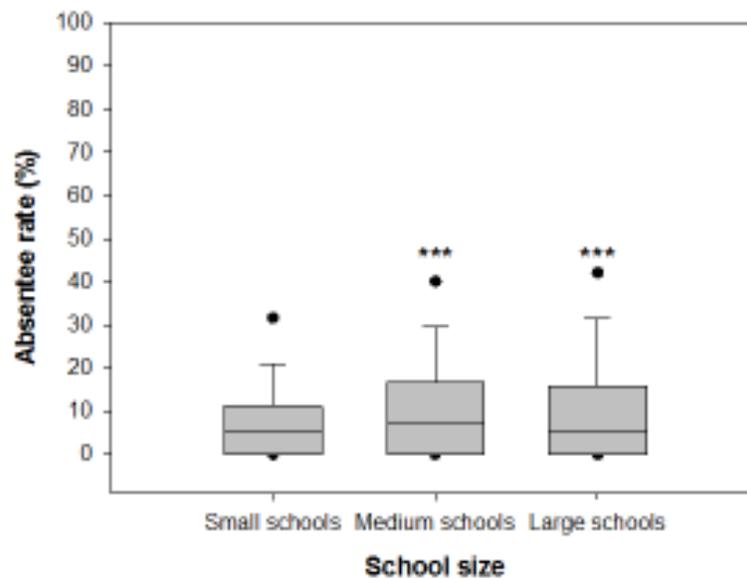


Figure 1. Box and whiskers plot for school size and absentee rate with the 5th and 95th percentiles (N = 6843 students). *** = Significantly higher absentee rates at medium-sized and large schools compared with small schools at $p < .001$.

rates. The students were also asked to answer the same questions, but from a student perspective. The interviews and the field notes from the informal conversations and observations were transcribed and analyzed within the tradition of grounded theory (Charmaz, 2006). Thus, interpretations of the text determine the categories. In accordance with grounded theory, the meaning of the subjects' statements and the interpretations of the subjects' actions were categorized into main findings. All the qualitative data were organized based on these findings during the reading, and the main findings were also reorganized during the process to create the meaning condensation. This approach is used to provide a thorough description and understanding of the phenomenon (Johannessen et al., 2006).

Statistics

The distribution of school absenteeism was leptokurtic ($Z_{\text{kurt}} = +84.6$) and positively skewed ($Z_{\text{skew}} = +66.7$) with a long tail of high values; hence, the Kolmogorov–Smirnov test showed that the assumption of normality was not met ($p < 0.001$). Data are therefore analyzed by nonparametric techniques, presented as median scores, and depicted in box and whiskers plots, as well as simple bar charts showing percentages. In addition, absentee rates are given as mean differences ($M_{\text{Diff.}}$) and standard error of the differences ($SE_{\text{Diff.}}$) between schools and genders in the Results section. In total, 85 students were excluded from the statistical analyses owing to missing values. The missing values were equally distributed across the different school sizes. The Kruskal–Wallis test was used to check for differences in absentee rates among the three school sizes. The Mann–Whitney U test was performed in follow-up tests to identify the pairwise differences between the school sizes, as well as for differences between genders. We also calculated a new cutoff value at a 10% absentee rate to emphasize

that some absences in PE are unavoidable owing to sickness or other external factors that are beyond students' control. This dichotomous variable was used in chi-square tests to check for differences between school sizes and genders with respect to an absentee rate that is above or below 10%. The post hoc test for the chi-square test was performed, revealing an association between categorical variables measured at more than two levels (i.e., school size), according to O'Donoghue (2012). The Fisher's exact test was reported when the chi-square was applied to a 2×2 cross-tabulation (i.e., gender vs. an absentee rate that is above or below 10%). The level of significance was set at an alpha level of $\leq .05$. All statistical tests were processed using Statistical Product and Service Solutions (SPSS) software, version 21.0.0.1, for Windows (IBM SPSS, Armonk, NY).

Ethical considerations

The subjects were fully informed about the protocol before participating in this study. Approval to use the data and conduct the study at the high school was given by both the Department of Education in Nordland County and the Norwegian Social Science Data Services (NSD).

RESULTS

The effect of school size on absentee rate was found to be significant, as evidenced by the Kruskal–Wallis test ($\chi^2_2 = 30.37$, $p < .001$, Figure 1). Post hoc pairwise comparisons with the Mann–Whitney U test showed that small schools had a significantly lower absentee rate than medium-sized schools ($Z = -5.25$, $p < .001$; $M_{\text{Diff.}} = 3.4\%$,

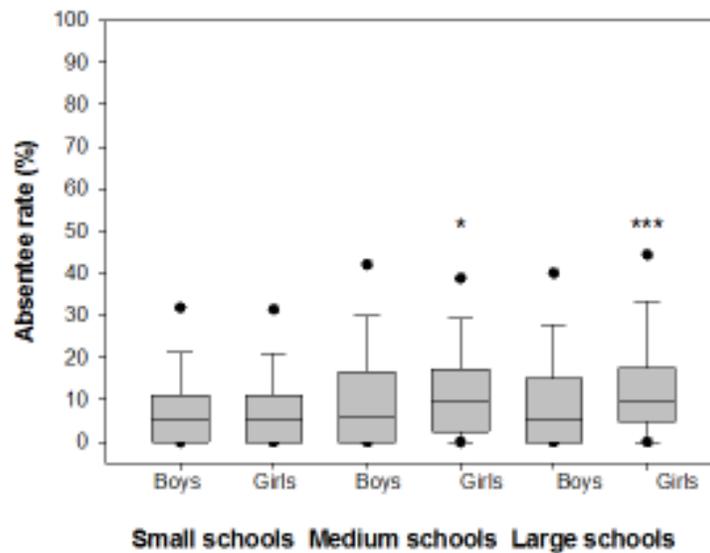


Figure 2. Box and whiskers plot for gender and absentee rate for different school sizes with the 5th and 95th percentiles (N = 6843 students). * = Significantly higher within-school absentee rates for girls compared with boys at $p < .05$; *** $p < .001$.

$SE_{Diff.} = 0.59$) and large schools ($Z = -5.30$, $p < .001$; $M_{Diff.} = 3.4\%$, $SE_{Diff.} = 0.59$). This constitutes a 29% difference in absentee rates between small schools and medium-sized and large schools. Regardless of school size, girls also had a significantly higher absentee rate than boys ($Z = -6.15$, $p < .001$; $M_{Diff.} = 1.4\%$, $SE_{Diff.} = 0.33$). Pairwise comparisons between gender and school size are given in Figure 2. No differences were detected between genders in small schools ($Z = -1.07$, $p = .28$); however, girls had significantly higher absentee rates than those of boys in medium-sized schools ($Z = -1.97$, $p = .05$) and in large schools ($Z = -6.07$, $p < .001$). The absentee rate of girls in large schools was nearly 3% higher than that of boys in large schools. This constitutes a 21% difference in absentee rates between girls and boys in large schools.

An absentee rate above 10% was significantly associated with school size ($\chi^2_2 = 16.76$, $p < .001$; Figure 3). Post hoc tests showed that the percentage of students with absentee rates above 10% in small schools was significantly lower than the percentage of students with absentee rates above 10% in medium-sized and large schools. The results showed that 37% of students in small schools had absentee rates above 10% and that 45% of students in medium-sized and large schools had absentee rates above 10% ($p < .001$). These results constitute a 19% difference in absentee rates between small schools and medium-sized schools and an 18% difference in absentee rates between small schools and large schools. Furthermore, Figure 4 shows that the

percentage of girls with absentee rates above 10% was significantly higher than the percentage of boys with absentee rates above 10%, regardless of school size (48% of girls with absentee rates above 10% vs. 41% of boys with absentee rates above 10%; $p < .001$). Pairwise comparisons between gender and school size (Figure 4) showed no difference in absentee rates above 10% between girls and boys in small schools (39% of girls vs. 35% of boys; $p = .18$). However, the percentages of girls with absentee rates above 10% were significantly higher than those of boys in medium-sized schools (48% of girls vs. 43% of boys; $p = .01$) and in large schools (50% of girls vs. 41% of boys; $p < .001$).

The analyses of the data from the interviews and informal conversations conducted with students and teachers in the high school and from observations of these students and teachers showed that students and teachers were consistent in their answers. One main finding was that both teachers and students reported a high level of relatedness among the students and between the students and the PE teachers, and they all claimed that this relatedness deterred absenteeism in PE. The observations supported this finding. The teachers highlighted that they knew each student well and that this knowledge was essential in relation to providing good teaching in PE. They could follow the same students through all three years of high school, and they knew of their students' parents in most cases. This familiarity made it easier for the teachers to create good conditions for learning because they "knew what to do

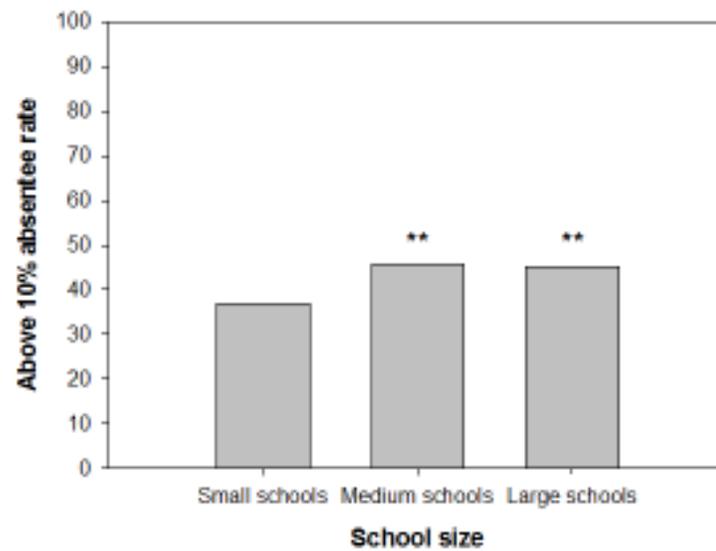


Figure 3. Absentee rate above 10% and school size (N = 6843 students). ** = Significantly higher absentee rates above 10% at medium-sized and large schools compared with small schools at $p < .01$.

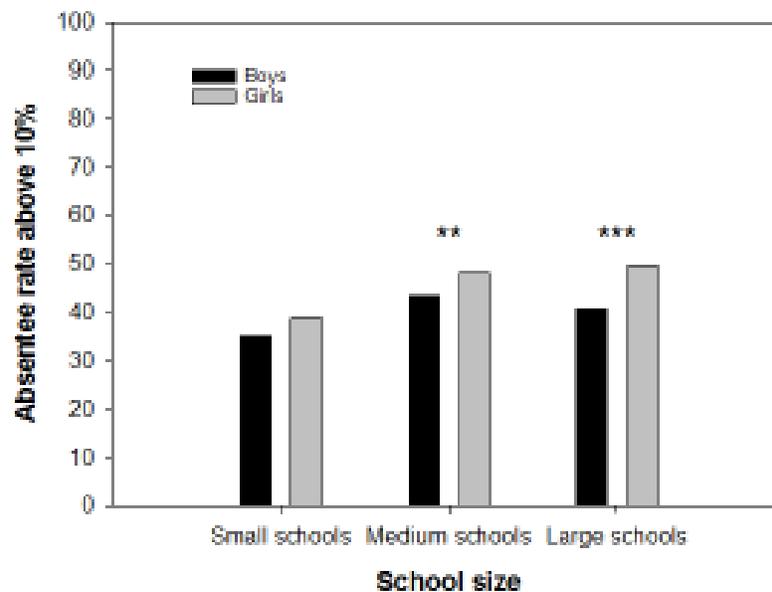


Figure 4. Absentee rate above 10%, gender, and school size (N = 6843 students). ** = Significantly higher absentee rates above 10% for girls in medium-sized and large schools compared with small schools at $p < .01$; *** $p < .001$.

and how to do it” with regard to engaging the students. The teachers reported that they usually had a low number of students in each class because class sizes in a small school in a rural community are generally small

owing to the low number of potential students. However, the teachers felt that the conditions for following up students in classes with 15 to 20 students were much better than in classes with more students. The teachers

claimed that the small class sizes allowed them to spend more time with each student and gave them a better opportunity to make the students feel that they are being taken care of and that they can receive attention from their teachers. In addition, the teachers stated that small class sizes made it easier to adapt the activities to each student, individualize the instruction, and instill competency and a sense of success in students. The students corroborated these statements. Furthermore, the teachers found it advantageous to know the students' names and histories so that they could follow them up sufficiently. One teacher further explained the advantages of a small school, stating:

"It is a huge advantage that we are a small school. The students are closely followed up, and they know they are being closely followed up. Sneaking away from PE is not an option. If anyone is uncomfortable, I see it right away. I talk with them, and they can decide what to do. On the other hand, if I tell them they all have to play basketball today, we lose them. You have to create a relationship with the student and listen to which activities they are motivated to do. They have to do something, but they can decide what to do. It really works."

The analysis of the students' responses to the interview questions revealed agreement with the teachers' statements. The students stated that attending a small high school in a rural area gave them several advantages. One advantage was that all the students knew each other and that they had confidence in each other. This advantage is explained in the following statement by a student:

"Here everybody knows each other, so nothing is embarrassing. You can be yourself. You know what the other students can do and what they cannot do, so it is not embarrassing to be bad in soccer when the others know you are good in other sports. . . . You feel more confident and dare to participate in PE."

The students also maintained that they had close relationships with their teachers and that it was easier to forge close relationships in a small high school. The closeness of their relationships with the teachers and the other students made them feel more committed to attend PE classes. One student stated, "If you have a personal relationship with the teacher, you will feel more obligated to attend school. It is easier to sleep through the morning [classes] when you do not know the teacher very well. In a way, you feel you have an agreement with the teacher, and you do not screw it up." This mindset is elaborated on by another student in the following interview response:

"The personal relationships you create with the

teachers and [those that] the teachers create with you here are important because you feel you have an attendance agreement that you break if you do not show up. It is actually personal. You feel you have to go, but you also want to go. It is acknowledged that everyone shall attend PE. No one talks trash about PE because the teaching is good."

The students also claimed that the existence of close relationships among the students led to a general expectation about attending PE classes (i.e., a positive form of peer pressure). One student offered the following explanation: "The other students see that you are missing, and then they ask you, 'Where the hell were you?' So you feel some pressure to attend, but it I think it is okay." Furthermore, because they attended a small high school in a rural area, the students frequently met their teachers at the local shops and other places in the community. The students pointed out that this lack of anonymity in a rural area deterred student absenteeism. The teachers also reported that it was easy to collaborate in a school located in a place where teachers and students knew each other well and where the student-to-teacher ratio was low.

DISCUSSION

The aim of this study was to examine the effects of school size and gender on absentee rates in PE among high school students. Our findings show that of small, medium-sized, and large schools, small schools had the lowest overall absentee rate in PE and the lowest absentee rate in PE above 10%. Furthermore, girls had significantly higher overall absentee rates and 10% absentee rates than boys in medium-sized and large schools. No gender differences in absentee rates were detected in small schools. The findings of a follow-up study among students and teachers in a small high school located in a rural area show that students and teachers reported a high level of relatedness among the students and between the students and the teachers.

Differences in absentee rates based on school size

We found that compared with small schools, the absentee rate in PE was 29% higher in medium-sized and large schools. Some reasons for absenteeism—sickness and other external factors—are, of course, beyond the control of students. However, an absentee rate above 10% can be categorized as problematic.

Therefore, we also calculated the percentage of students with an absentee rate of more than 10% in small, medium-sized, and large schools. Of the three types of

schools based on size, the percentage of students with an absentee rate above 10% was the lowest in small schools. Compared with small schools, medium-sized schools had 19% more students with an absentee rate of more than 10% in PE, and large schools had 18% more students with an absentee rate of more than 10% in PE. These findings support previous research suggesting that schools with a small student population are preferable to schools with a large student population (Barker and Gump, 1964; Brown et al., 2012; Dee et al., 2007; Eddy, 2004; Farmer-Hinton and Holland, 2008; Flores and Chu, 2011; Fowler and Walberg, 1991; Gardner et al., 2000; Lindsay, 1982; Morrow et al., 1999; Newman et al., 2006; Noguera, 2002; Pittman and Haughwout, 1987; Ready et al., 2004; Walsh, 2010; Weiss et al., 2010; Werblow and Duesbery, 2009).

However, Darling-Hammond et al. (2006) emphasized that many challenges exist in interpreting current research on school size because studies do not conduct randomized trials. They argued that strong causal claims are thus difficult to make. They also pointed to the challenge of defining the cutoff points of different school sizes. Larger schools may be located in more urban areas, which may affect the validity of the findings. In addition, Coladarci (2007) highlighted the importance of describing the context of the investigation. Haller and Virkler's (1993) findings revealed the importance of controlling socioeconomic status when studying rural and nonrural high school students. Research indicates that students attending small schools located in rural areas come from families with a lower socioeconomic status than students attending larger schools in more urban communities (Breivik and Rafoss, 2012). Research has also revealed that Norwegians with a low socioeconomic status are less physically active than Norwegians with a high socioeconomic status (Breivik and Rafoss, 2012). In addition, research has found that students who come from families with a low socioeconomic status are less physically active than students who come from families with a high socioeconomic status (Kolle et al., 2012). Furthermore, Breivik and Rafoss (2012) showed that Norwegians living in rural areas in Norway are less physically active than those living in larger communities. Despite the fact that students from rural communities are less physically active, we found that they have a lower absentee rate in PE.

Because previous studies on school size used different cutoff points with regard to what constitutes a small school and a large school in terms of population, these differences make comparisons difficult. Furthermore, comparing research on school size from different cultural settings (e.g., Norway vs. the United States) may be problematic. There is no single definition of a rural place in Norway. According to Coladarci (2007), there is no single definition of a rural place in the United States

either, but the populations do not vary much from the criteria of rural places identified by the Office of Management and Budget (2000) in the United States. As previously mentioned, defining the cutoff points for different school sizes is also somewhat problematic. The definition of a small school used in the present study is the same one put forth in a study by Noguera (2002) suggesting that small schools be categorized as those having fewer than 200 students. Using such a definition made it possible to categorize the schools into one of three groups, with approximately an equal number of schools in each group. Furthermore, such a definition seems to be an appropriate reflection of Norwegian school structure and society. In the United States, large high schools exceed 2,000 students (Schneider et al., 2007), but the largest schools in Norway rarely exceed 1,000 students. Hence, one could argue that Norwegian schools with more than 600 students fall under the category of large schools. Although some research has concluded that small schools are best suited to foster achievement among students, Wainer and Zwerling (2006) pointed out that this was a somewhat hurried conclusion. They argued that although many small schools had better student achievement levels than larger schools, there were also large schools where student achievement levels were superior to those of small schools. Kahneman (2011) supported this argument and criticized the use of statistics in research on the benefits of small schools. He identified several weaknesses in this type of research, such as the inclusion of a small number of subjects in a study and the use of different sizes between groups when conducting an analysis. In addition, Kahneman (2011) emphasized that it is easier to find differences among groups with small numbers of subjects than groups with larger numbers of subjects. One could argue that this criticism may be applied to the present study in which the small-school group had the smallest number of students ($n = 630$ students) compared with the medium-sized-school group ($n = 2,451$ students) and the large-school group ($n = 3,847$ students). However, Figures 1 through 4 clearly depict the difference between small schools and the other schools, and the statistical analyses show that the difference is significant (and not "borderline" significant). Furthermore, one could argue that even though the number of students comprising the three types of schools based on size is the lowest in small schools, 620 students constitute a relatively large group of students and a representative group. Both Wainer and Zwerling (2006) and Kahneman (2011) have critiqued studies on small schools and student achievement, and as we have previously mentioned in the Introduction, studies on student achievement and school size have produced contradictory findings. However, it is important to highlight that school outcomes include other aspects in

addition to achievement.

Previous studies have identified several advantages with regard to attending small schools that may explain their findings. Some studies have pointed out that student attendance is generally higher in small schools than in larger schools (Barker and Gump, 1964; Fowler and Walberg, 1991; Gardner et al., 2000; Lindsay, 1982; Pittman and Haughwout, 1987; Werblow and Duesbery, 2009). Several studies have also found more involvement in small schools (Barker and Gump, 1964; Coladarci and Cobb, 1996; Lindsay, 1982), a factor that may lead to lower absentee rates in PE. For example, some studies have shown parental involvement to be greater in small schools than in larger schools (Dee et al., 2007; Walsh, 2010). This increased parental involvement means that parents are more likely to have knowledge about their children's attendance at school, which may in turn help reduce absenteeism in PE. Other factors that may influence student absenteeism are student satisfaction and school environment. If students are more satisfied in small schools than in larger schools (Lindsay, 1982; Noguera, 2002) and are more positive toward the school environment in small schools than in larger schools (Newman et al., 2006), these factors may also reduce student absenteeism.

Finally, if students are more engaged in their learning (student engagement) in small schools, as Weiss et al. (2010) suggested, and students also experience a more supportive leadership and better communication with their teachers and the other students in small schools (Brown et al., 2012; Farmer-Hinton and Holland, 2008), these factors may contribute to reducing absenteeism among students. Shear et al. (2008) highlighted support and social relations as two important predictors for student success. Research has indicated that teacher support in high school may play an important role in motivating high school students (Hardré et al., 2009). The findings in the present study are partly supported by the few studies that were conducted several decades ago about school size in Norwegian schools (Norwegian Council for Research in Schools, 1968; Jørgensen et al., 1975; Sandven, 1968). One of these studies reported that tremendous challenges were associated with creating proximity, establishing human contact, and cultivating good social relationships among students and teachers in large schools (Norwegian Council for Research in Schools, 1968). Furthermore, if higher levels of social relationships and social capital exist in small schools, as studies have shown (Barker and Gump, 1964; Ready et al., 2004), these factors may deter high absentee rates among students. The results from the follow-up study support such an argument.

Recent school reforms in the United States reflect school research findings and the importance of replacing large schools with small schools (Carolan, 2012;

Goodlad, 1984; Horyna and Bonds-Raacke, 2012; Johnson, 2002; Kafka, 2008; Levine, 2010, 2011; Stiefel et al., 2009; Weiss et al., 2010). As a result of these reforms, many large high schools in the United States have been replaced with smaller schools (Ancess and Allen, 2006). It is striking that the opposite process is taking place in Norway, where small high schools located in rural areas are being closed and replaced with fewer and larger high schools in larger communities. The expected economic benefits seem to be an essential motivation for the closure of small schools. However, Stiefel et al. (2000) found that small schools spent less money per student who graduated than did larger schools, thus challenging the assumption about the economic benefits of reducing the number of small schools and sending students to larger schools that are located far away from home. Hence, the results of the present study could be of relevance to the political discussion about school size and the establishment and the closure of small high schools in rural areas all over the world. Following data collection for the present study, the high school with the second lowest absentee rate and the second lowest number of students in our sample shut down, and the students were transferred to a larger high school located in a larger community, a 60-minute drive away.

Relatedness among teachers and students at a small high school in a rural area

One main finding from the interviews and the fieldwork analysis among teachers and students was that both teachers and students reported a high level of relatedness among students and between the students and the teachers. Deci and Ryan (2000) pointed out three basic needs in all humans: autonomy, relatedness, and competence. These factors are essential for optimal motivation, integration, wellness, and well-being, which in turn lead to intrinsic motivation. Intrinsic motivation is about doing an activity because it is interesting and provides its own reward by satisfying one's basic needs for autonomy, competence, and relatedness (Ryan and Deci, 2000). It is the prototype of self-determination in their self-determination theory. A teacher can encourage or restrain students' intrinsic motivation. Self-determination theory emphasizes the importance of the social environment of students for personal growth. Relatedness is about feeling cared for and connected to someone (Deci and Ryan, 2000). Deci (1995) claimed that students need to feel connected with others—that is, to care and be cared for (the need for relatedness). In addition, Deci (1995) maintained that human behavior and experience are viewed in terms of the dialectic between the person and the environment. The interaction

between the active organism striving for autonomy and the social context can be either nurturing of or antagonistic toward the person's tendencies. Jang et al. (2010) emphasized the importance of creating trust and good relationships between teachers and students and of fostering a sense of belonging. The resulting relatedness may deter absenteeism in school. Chance and Segura (2009) pointed to collaboration as the heart of the school improvement process in rural high schools. The high school teachers interviewed for the present study reported that it was easy to collaborate in a rural school located in a community where teachers and students knew each other well.

Coladarci (2007) highlighted the importance of making the rural argument. A question of great relevance is if it is the size itself or the rural location that contributes to the superiority of small schools. The results from the follow-up study indicate that the rural location offered several advantages such as high levels of relatedness and collaboration, which may explain the findings. A previous study identified the individualization of instructions and the existence of supportive relationships with their community as important factors in rural school success (Barley and Beesley, 2007). The individualization of instructions and the existence of supportive relationships were two main findings of the follow-up study.

Differences in absentee rates between girls and boys based on school size

No gender differences in absentee rates in small schools were found. However, girls had significantly higher absentee rates than those of boys in medium-sized and large schools. Furthermore, no differences in the percentages of girls and boys with absentee rates above 10% in small schools were found. In both medium-sized and large schools, higher percentages of girls than boys had absentee rates above 10%. The results clearly show that the differences between the percentages of girls and boys with absentee rates above 10% decreased when school size decreased.

Our results support earlier studies on Norwegian students suggesting that girls in general find PE to be more problematic than do boys and that girls do not enjoy PE as much as boys do (Flagestad, 1996; Flagestad and Skisland, 2002; Holm, 2005; Johansen, 2002; Wabakken, 2010). Wabakken (2010) found a positive correlation between enjoyment and attendance in PE, thereby providing support for the idea that enjoyment in PE may help decrease absenteeism. Research has also shown that students in small schools are more satisfied than those in than larger schools (Lindsay, 1982; Noguera, 2002), which may explain the interaction effect. Holstad (2012) found that girls emphasize the importance of a

supportive leadership in high school PE. The presence of a supportive leadership in PE is especially important for girls who are more dissatisfied with their own bodies, she argued. In addition, studies have identified small schools as being the best suited for creating such a learning environment (Brown et al., 2012; Farmer-Hinton and Holland, 2008). With regard to earlier research, one could argue that small schools produce better social relationships (Barker and Gump, 1964; Dee et al., 2007; Ready et al., 2004)—relationships that may help reduce absenteeism among girls. Our findings also support other research showing that small schools create learning environments that are especially positive for marginalized groups in school (Howley and Bickel, 1999). In addition, our findings support the research of Noguera (2002) and Lindsay (1982), who also pointed out that in contrast to large schools, small schools (with fewer than 200 students and 100 students, respectively) all shared the following characteristic: The performance levels of students in small schools were independent of their social group or social status.

Conclusion

The study showed that the absentee rates in PE were significantly lower in small high schools with fewer than 200 students than in medium-sized schools and large schools with more students. Of these three types of schools based on size, small high schools also had the lowest percentage of students with an absentee rate of above 10% in PE.

Furthermore, the findings showed an interaction effect of gender, in that absentee rates among girls were significantly higher than those among boys in medium-sized and large high schools. The interaction effect was not found in small schools. The follow-up study showed a high level of relatedness among students and among the students and the PE teachers, and both teachers and students claimed that this relatedness deterred absenteeism in PE. The findings present new knowledge about absentee rates in PE in relation to the benefits of small high schools in rural areas, and this new knowledge may be relevant from an international perspective. Finally, further studies about how and why small high schools manage to maintain low absentee rates in PE are needed.

Conflict of Interests

The author(s) have not declared any conflict of interests.

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