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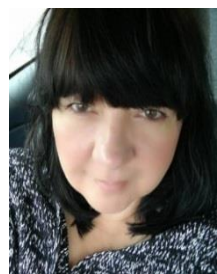
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- To assemble all who are interested in these fields for an exchange of ideas and experiences;
- To disseminate research findings;
- To provide a database for members and researchers.

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CONTENT

Incapacitation as a Mean of Protecting the Dignity of the Persons with Disabilities in the view of Convention on the Rights of Persons with Disabilities

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Abstract

The institution of incapacitation is perceived in the context of the assurance of legal support for people who, due to the condition of their health and to other circumstances, require such support. Pursuant to Article 12 of the Convention on the Rights of Persons with Disabilities: States Parties reaffirm that persons with disabilities have the right to recognition everywhere as persons before the law (Section 1) and they enjoy legal capacity on an equal basis with others in all aspects of life (Section 2). In this article, I present selected premises of incapacitation as protection of the rights of persons with intellectual disabilities according to the provisions of the Convention and the extent of their exercise in Poland. I reveal that the shape of the institution of incapacitation in Poland remains in contradiction with assumptions of Article 12 of the Convention. I discuss the criteria and the scope of limitations of a total and partial incapacitation. I present an interpretative declaration concerning Article 12 of the Convention made upon ratification. In view of the critical remarks made by the circles supporting persons with intellectual disabilities, the formula applied rarely represents a form of protection adjusted to the needs of such person, whereas it frequently deprives them of their dignity and legal possibilities of deciding autonomously about themselves adequate to their level of development

Keywords total incapacitation, partial incapacitation, intellectual disabilities, Convention on the Rights of Persons with Disabilities

Introduction

The right to respect own dignity is one of the most important rights possessed by every man. Personal dignity is the property of every person. It constitutes the most precious human welfare, which determines his uniqueness, and moreover is the key element of the equality of all people towards each other. Human rights should guarantee everyone to be able to administer himself, not to be used nor appropriated by others, not to be brought to the role of the object, but to always remain an entity. It should be stressed that dignity of the human being has fundamental meaning for the human rights. Dignity is always the overriding point of reference is incomparable with other determinants of law and cannot be changed to other values. Dignified treatment of human means that, in every life situation he/she is the entity that has the freedom of choice, and the law must be respected (Szczupal, 2012).

Incapacitation is a controversial solution. On one hand this legal instrument aims to protect a person who needs constant support with daily living. On the other hand, it causes effects that limit the freedom of actions of the person and therefore put him/her in a situation that violate his/her dignity. Due to its complexity incapacitation should be used as an exceptional measure. By the rule, every person (after reaching certain age) has full legal capacity, acts in his/her own name, and bears all consequences. According to the intention of the legislator, incapacitation is a legal tool created in order to most of all protect, people who are under the guardianship. It can be seen in two dimensions - causes and effects. First dimension includes reasons for guardianship over a person, which are essential for that person's well-being and preserving his/her dignity. The dimension of effects of the incapacitation is two-fold: one by limiting the capacity of acting on his/her own behalf the guarded person becomes protected, and two, third-parties who could suffer as a result of guarded person's actions are also protected. Protection of third parties, that is family, or legal guardians, cannot be a reason for incapacitation, it appears only as a result of it. Distorting those proportions would lead to situations where incapacitation is not a form of protection but rather a mean of objectification and limiting human dignity.

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Incapacitation in the Light of provisions of the Convention on the Rights of Persons with Disabilities

Incapacitation is normally viewed in the context of providing legal support for people who, due to their health or other circumstances, need it. The means of legal protection of people, who have problems with decision-making, should match the needs of an individual, his/her level of disability and his/her situation. According to the intention of the legislator, incapacitation is legal tools used in order to, first and foremost, protect the person who is guarded. The incapacitation should maintain a balance between the need of protection and the scope of limitations - the more help and support a person needs in his/her actions the more control and limitations he/she has (and vice versa). Central point of incapacitation is dignity and well-being of a person, who due to illness, disability, addiction, etc. is not able to function independently in the reality of social, legal, and economic laws that surrounds him/her (Cytowska, 2011).

Convention on the Rights of Persons with Disabilities adopted by the General Assembly of the United Nations on 13 December 2006 and ratified by Poland on 06 September 2012 is based on the principles of protecting dignity, individual autonomy and independence, non-discrimination, and equality of chances (Szczupał, 2012). *Convention on the Rights of Persons with Disabilities* in art. 5 assumes that the Countries acknowledge that *all persons are equal before and under the law and are entitled without any discrimination to the equal protection and equal benefit of the law* (point 1) and that *to promote equality and eliminate discrimination, States Parties shall take all appropriate steps to ensure that reasonable accommodation is provided* (point 3). Equality means an opportunity to exercise freedom and human rights. However, disabled persons are often regarded as incompetent for that and their rights and freedoms in private life as well as freedom of decision making are often limited, depending on many cultural, economic, social, and political factors (Dz.U. 2012, item 1169).

According to the Convention a disabled person has the same rights and obligations, as other members of a society, including rights to freedom and safety, right to freedom of movement, freedom of independent life, right to health, education, and employment as well as right to participate in social, cultural, and political life. *Convention* requires Member States to undertake successful actions aimed at improving the quality of life of the disabled persons. It requires re-valuing of social norms and attitudes, in order to respect the human dignity and to fully integrate the disabled persons (Dz.U. 2012, item 1169).

European Disability Strategy (2010-2020): A Renewed Commitment to a Barrier-Free Europe for Disabled Persons — COM(2010) 636 requires Member States to introduce regulations concerning the legal capacity that are in line with the idea included in the art. 122 of the UN Convention according to which: *States Parties reaffirm that persons with disabilities have the right to recognition everywhere as persons before the law* (point 1) and *shall recognize that persons with disabilities enjoy legal capacity on an equal basis with others in all aspects of life* (point 2). *Legal Capacity* is enjoyed by every person from the moment of birth, it cannot be renounced, limited, or transferred to other person by means of legal action (art. 8 *Polish Civil Code*). *Acting Legal Capacity* is on the other hand, an ability to have rights and obligations due to one's own actions, according to his/her will (Civil Code, Dz. U. 1964 No 16 item. 93 as amended.; Szeroczyńska, 2012). Art. 12 of the Convention relates to all persons with disabilities, however it has the most importance in relation to those with intellectual or psychical disability:

- point 3 requires Member States to undertake appropriate measures as to secure the disabled persons *provide access* which they may need when exercising their acting legal capacity.

- point 4 states that all measures related with exercising acting legal capacity should include *appropriate and effective safeguards to prevent abuse.*

According to the Convention means of supporting a person with disability should respect the rights, will and preferences of the person, are free of conflict of interest and undue influence, be proportional and tailored to the person's circumstances, apply for the shortest time possible and be subject to regular review by a competent, independent and impartial authority or judicial body. All the safeguards should be proportional to an extent by which they influence the rights and interests of a given person. Art. 12 emphasises the guaranteeing equal rights of persons with disabilities to own and inherit real estates, control personal finances as well as emphasising the assurance that the disabled persons will not be deprived of their property in an arbitrary way (Szczupał, 2012).

Art. 12 of the Convention should be analysed together with their purpose, rules, and provisions of the Convention. The preamble of the Conventions recognizes *inherent dignity and worth and the equal and inalienable rights of all members of the human family* and that *everyone is entitled to all the rights and freedoms set forth therein, without distinction of any kind,* and *discrimination against any person on the basis of disability is a violation of the inherent dignity and worth of the human person.* The purpose of the Convention is to: *ensure the full and equal enjoyment of all human rights and fundamental freedoms by all persons with disabilities.* The obligation resulting from art. 12,requires an introduction to the legislation forms of support in exercising by the disabled persons acting legal capacity. Those forms of support should not be based on unlimited in time, legal incapacitation in all aspects of life and leaving the decision-making to his/her legal guardian.

The *Convention* is the most precise attempt to move away from system of proxy in decision making for the disabled persons, including the elimination of incapacitation understood as depriving the acting legal capacity and introducing to the legislation a system based on supported decision-making.

The concept of supported decisions:

- first the person must understand available information on a given subject,

- then he/she must be able to assess the effects of his/her actions,

- based on the information about a situation and its effects a person must be able to make free decision,

- finally he/she must be able to communicate his/her will to other people in a way which is understandable for others.

Support can be given on each of the stages of decision-making and can have different forms, both personal and technical (Szeroczyńska, 2012; Zima - Parjaszewska, 2012). The model of supported decision-making is based on supporting the person, who for some reason, for example due to disability, needs it in different areas of life but at the same time does not lead to leaving the disabled person not deciding no his/her own.

Incapacitation as a Mean of Protecting the Dignity of Persons with Disabilities in Poland

Dimension of Premises

The present shape of legal regulations in Poland concerning legal incapacitation of the disabled persons is dubious in terms of their compliance with the rules of limiting the constitutional rights and freedoms of a human being, expressed in art. 341 para 3. of the Polish Constitution. Current legal regulations concerning legal incapacitation allow for too much interference with private lives of the intellectually disabled persons and deepen their social exclusion and violate their dignity.

Civil Code in Poland includes too types of incapacitation full and partial, which differ with regard to their intensity and effects. *"A person who has attained thirteen years of age may be fully incapacitated, if he is incapable of controlling his own behaviour due to mental illness, mental retardation or another kind of mental disorders, in particular alcoholism or drug addiction"* (art. 13 § 1 Civil Code). The effect of full incapacitation is the loss of acting legal capacity of the incapacitated person (art. 12, Civil code) and setting a legal guardian (unless he/she stays under parental guardianship) (art. 13 § 1 Civil Code).

Similarly partial incapacitation, imposed only on an adult person, who due to mental illness, mental slowness (retardation), or other mental distortions, especially alcohol or drug addiction, requires help in conducting his/her own matters. Imposing partial incapacitation results in limiting the acting legal capacity of the incapacitated person and setting up a curator for him/her.Grounds for incapacitation are directly correlated with its effects - correct shaping of legal situation of the incapacitated person is directly related with precise analysis of his/her needs (Cytowska, 2011; Zima - Parjaszewska, 2012; Civil Code, Dz. U. 1964 No 16 item 93 as amended).

Limitations

Incapacitation does not serve the purpose of legal protection of the disabled persons - in the area of grounds, judiciary practice, and situation of incapacitated persons in Poland. *Civil Code* while enumerating the medical needs for incapacitation uses negative terms which are unused in medical, pedagogical, and sociological literature for years now. Legislator do not give answers how to understand the most important grounds for incapacitation, i.e. *the inability to direct one's own actions and need in directing those actions.* Judiciary practice despite significant changes in proceedings about incapacitation due to *the Act of 09 May 2007 on change of Civil Procedure and some other Acts* (caused by the Constitutional Tribunal's verdict of 07 March 2007 sign. K28/0542 on request of Polish Ombudsman) violates the interests of the disabled persons. Polish Ombudsman reported irregularities with respect to *exercising guardianship over the incapacitated person*, reporting lack of curators, extensive proceedings for setting the guardians and curators, conflicts and not caring about interest of the incapacitated persons) (Firkowska-Mankiewicz, Parczewski, Szeroczyńska, 2005). The shape of the legal incapacitation in Poland goes against the assumptions of the article 123 of the Convention:

- *incapacitation is not a measure* that provides a support with exercising the acting legal capacity, but rather it leads to depriving of limiting those these capacity. It is based on proxy in decision making not in supporting a person in making a decision on his/her own.
- amendments to the regulations with regard to proceeding about incapacitation are not a safeguard of not overusing legal incapacitation.

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- despite the regulations about *the requirement of listening to the opinion of the incapacitated person by his/her guardian before making any decision on important issues*, the will and preferences of the disabled person are not taken into consideration in most important matters such as decision concerning his/her place of residence,
- incapacitation is a measure which is not proportional and most often not matching the situation of a specific person. Moreover it does not take into account the varied needs of persons who require legal support and it extends to almost all parts of life,
- *imposed for indefinite period of time*, while it should be imposed for as short time period as possible,
- the control over how guardianship is exercised is done only by accepting by the Family Division of the Court the reports from exercising the guardianship, which are brought at least once a year,
- incapacitation makes it impossible to exercise - on equal rights as other persons - the right to possess and inherit property and to control one's own finances (Szeroczyńska, 2012; Zima - Parjaszewska, 2012).

The effects of incapacitation lead to legal and social exclusion of the incapacitated persons and violate their dignity. Actions of their legal guardians are not the same as the actions of a person in question. Constitution Tribunal (verdict K/25/05) points that between inspiring to make a specific decision and making that decision on one's own there is, from the point of view of right to freedom, a qualitative difference - first is only "secondary" reflection of that law, while the other is its essence. An incapacitated person slowly loses social skills that he/she gained and post often do not make any attempts to develop other skills. *An incapacitated person is socially stigmatised not only due to for instance his/her disability, but also due to the incapacitation itself.* Incapacitation leads to increasing stigmatisation (Verdict of The Constitution Tribunal of 07 March 2007, sing. K 28/05, OTK ZU 2007 no 7A item 75; Firkowska-Mankiewicz, Parczewski, Szeroczyńska, 2005).

Solutions

Barrier to the changes regarding the issue of legal incapacitation is the position of Poland, which made an interpreting announcement during ratification of the Convention, according to which the Republic of Poland interprets the art. 12 of the Convention in a way that allows for imposing incapacitation in circumstances and in a way described by the national law, as a mean described in art.12 para 43, in a situation where due to mental illness, intellectual disability, or other mental disorder a person is not able to control his/her behaviour. To fully implement art. 12 it is necessary to abolish legal incapacitation and replace it with other forms of legal support which would be harmonious with the supported decision-making model. The closest function included in the Family and Guardianship Code is the one of the curator.

Polish Society of Anti-Discrimination Law undertaken a research project in the years 2010-2012 entitled: "Jeśli nie ubezwłasnowolnienie, to co?" (*If not incapacitation then what?)* which aimed at analysing the practice of using legal incapacitation, including its use in legal procedures, that his the correctness of imposing it and applying the amendment of 2007 to the Civil Procedure Code as well as defining the expectations and needs of the social circles of the intellectually disabled persons and their close family and what norms should future legal regulations conform to in order to provide support for those people in making decisions of legal importance (Kociucki, 2013; Zima - Parjaszewska, 2012).

The effect of the project was creation of the assumptions for the change in legal regulations that promoted abolishing both full and partial legal incapacitation and creating

legal assistants whose duties and provisions would match the actual needs of the person for whom an assistant function would be set. It was suggested that among other, accepting this kind of legal solutions with regard to Constitutional Laws and international law, language, Civil Code, Civil Procedure Code, and Social Law (Kleniewska, Szeroczyńska, 2012; Zaradkiewicz, 2014).

There are also assumptions of the Commission of the Civil Law's Codification according to which: incapacitation should be replaced with four forms of support, which will not automatically interfere with the acting legal capacity, namely: assistant guardianship, representative guardianship, co-decision form of support, and full representation.

The Commission of the Civil Law's Codification want art. 82 of the Civil Code to be repealed. It states that statement made by a person who, for any reason, was in a condition that excluded aware decision making or violated the freedom of decision making, is invalid (Kociucki, 2013; Zaradkiewicz, 2014).

Ministry of Justice created *Assumptions for the project of the Act on changing Acts - Civil Code, Civil Procedure Code, Family and Guardian Code, Act on Support for the Family and the System of Care and other Acts.*

Introducing the solutions suggested in the project is connected with:

- the need for change in the regulations about legal incapacitation result from changing social conditions and development of medical and social sciences.
- the need to replace the incapacitation with other legal solutions results from number of international legal acts , including: *the Recommendation of the European Council Committee no. (99)4 on the rules concerning legal protection of the disabled adult persons*; *recommendations of the Committee of Ministers of the Council of Europe no (2006)5, The UN Convention of 13 December 2006 on Rights of Persons with Disabilities*
- the problem of inappropriate protection of the incapacitated persons noticed by the Constitutional Tribunal (verdict K 28/05)
- the existence of barriers met by the mentally ill persons and persons with intellectual disabilities with regard to getting married (art 11. and art 12 k.r.o.; Kociucki, 2013).

In the *Assumptions for the project of the Act on changing Acts* it was assumed that new regulations will: withdraw from the model in which a person can be deprived of acting legal capacity by court order in an arbitrary, abstract, and often only vaguely connected with actual mental status of the person way. Moreover, the project brings changes with regard to the functions of guardianship and relations between guardianship and acting legal capacity. Guardianship shall be introduced in order to support in managing personal affairs of the disabled person and the scope of duties and competencies of the guardian will depend on the mental state of the guarded person. The project also assumes withdrawal from full incapacitation as an objection for getting married (Kociucki, 2013; Zaradkiewicz, 2014). Creating a clear-defined picture of the rights of the disabled persons in the modern-day world and making the countries and their governments to actually hold up to those rights is a very important step on the way of improving the dignity of the disabled persons.

Conclusion

The legal incapacitation is a legal instrument that can be used to protect the legal rights of the intellectually disabled person (especially if the disability is high) in situations when it is necessary. However, it is overused as a legal measure what results in full incapacitation

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without taking into consideration the degree of disability of a person and without matching it with the person's needs and skills. Non-compliance with the procedural safeguards violates the dignity and human rights, which in turn causes the legal instrument, created by the legislator in order to protect the rights of the disabled persons, to serve as a tool for discrimination by limiting their dignity and leading to social exclusion. Instead of supporting it leads to losing the acquired social skills. Limiting or depriving of acting legal capacity are an argument for abolishing legal incapacitation whatsoever. According to the Council of Europe's Commissioner for Human Rights it is possible to create a number of alternatives for the disabled persons, that allow for withdrawing from the outdated tool of legal incapacitation and transition towards a new model of law.

Current, elastic solutions concerning supported decision-making are replacing the incapacitation. Therefore, in the light of the Constitutional Tribunal's verdicts, critical voices from the environments supporting the persons with the intellectual disability and mental illnesses, and taking into consideration the shift of the paradigms related with the disabilities - with more emphasis being given to the dignity, self-determination, full social inclusion, and support from the community - the current formula of the incapacitation is rarely matching the actual needs of the person and often deprives the person of dignity and adequate to his/her level of development legal possibilities for autonomous decision-making. It is necessary to promote the approaches realizing the principle of the social integration and respect for the dignity of all men. The society should be the place to experience autonomy, real partnership and equal access for all its members to the full participation in the social life.

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How School Achievements Interplay with School Culture and Principal Behaviors: A comparative Study [2]

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Abstract

The purpose of the study was to explore school culture in radically different schools due to school achievement. The particular objectives of this study were to investigate: (1) the teachers' perceptions of school culture (2) the teachers' perceptions of principal behaviors, and additionally (3) to determine the relationship between principals' behaviors and perception of school culture by teachers. This study employed a comparative-descriptive research design and took place in A - Middle School, representing a high-performing school, and B -Middle School, representing a low-performing school. These two middle schools were both located in capital city of Poland and were selected based on their position in Warsaw Middle Schools Ranking. The "School Culture Survey" (Gruenert & Valentine, 1998) was used to obtain data about school culture factors. To determine the teachers' perceptions of principal's behaviors, "The Organizational Climate Description Questionnaire - Middle Level" (OCDQ-ML, Hoy et al., 1996) was used. Statistical comparisons of collaborative school culture indicated that the compared schools differ significantly in four school culture dimensions. In school A there is a culture focused on individual achievements, the competition more than cooperation, unlike the situation in B-middle school, in which collaborative school culture is strong and visible. According to principal behaviors, significant differences between compared schools were also identified. Namely, more supportive principal behaviors were typical for school B (low school performing), while restrictive principal behaviors were more common in school A (high-performing). Results indicated that principal behaviors and collaborative school culture were associated with each other.

Introduction

'Individual student progress' or 'external test scores'? How to compare and rank schools' performance?

School performance reflects the effectiveness and efficiency of the schooling process. Effectiveness and efficiency are judged according to the school's 'objectives'. Although these are school specific to some degree, school performance research focuses solely on objectives that schools have in common (Maslowski, 2001). Nowadays, public schools face considerable pressure to be held accountable by legislators, parents, students, and other stakeholders for the success of their students (Toutkoushian, Curtis, 2005). Morris points out, that professional educators have long recognized that schools differed in their quality and in the learning environment they offered. In time , researchers' points of view about student achievements has changed: from the consideration of pupils' personal qualities or family backgrounds as factors which determine students' academic attainment (e.g. King, 1965), to the conclusion that "schools really do matter" (see Wilby, 1988). Toutkoushian and Curtis (2005) emphasize the relationship between a locality's socioeconomic status and the academic performance of schools. According to Wake (2001), 'people will tell you that the best way to predict a school's standarized test scores is to take a look at the cars in the parking lot. The more expensive the cars, the higher the scores, the better the school's reputation" (Wake, 2001, p. C3). Toutkoushian and Curtis (2005) note that school rankings that are based solely on observed outcomes such as external test scores or the college-bound rates of students tend to 'penalize' schools located in districts with relatively low socioeconomic status and vice versa.

However, many people regard test scores and examination results as suitable and adequate measures of a school's relative academic success. Advocates of standardized testing argue that scores provide the only objective data available to monitor student progress. But there are also arguments that, for many reasons, standardized test scores should never be used as the basis for policies that affect individual students or schools or for the formulation of important public policy-period. Critics of "monolithic batch" system have argued, among other things, that standardization is the antithesis of personalization, and evidence and experience suggest that personalization is a key factor in student motivation and success. Personalizing education, by definition, requires creating multiple pathways for students to succeed and reach their goals (Wolk, 2011). Moses and Nanna (2007) state that standardized tests are not inherently negative, and testing can serve to assess student learning and progress. But if testing is used in inappropriate ways, it can be damaging to students both emotionally and academically. On the other hand, 'test scores' is the main component of schools ratings. Any school's rating is a simple tool for 'school clients', mostly for parents, in the school selection process. Based on external test scores and other available data, schools' ratings provide information on school performance, giving parents a picture of school place and learning environment. Researchers (e.g. Kennedy, 1991) had argued that a more appropriate mechanism for comparing schools was to measure the progress individual students make between the different stages of their education (Morris, 2009).

School Culture

Organizational culture of institution is a basic concept in modern management theory. In contemporary literature, in the field of management it is assumed that organizational culture includes assumptions, attitudes, beliefs, rituals, traditions, knowledge, language, norms and values shared by all members of the organization (Schein, 1985). Every organization that is a formal place of work with a fixed structure, creates a specific culture and climate and have an impact on its participants. 'The variance and invariance of human behaviors and mental processes under diverse cultural conditions are both objects of cultural studies and they form the collective property of a group' (Zhu, Devos & Li, 2011, p. 320). Macneil, Prater and Busch (2009) emphasize that culture is complex because it has unique and idiosyncratic ways of working.

> Gruenert and Whitaker (2017) state Anytime a group of people spend a significant period of time together, they will develop roles and expectations for each other. Over time these roles will define each person and give balance to the group as its members attempt to survive the environment. The group will create rules to define who is a member and who is not. Rewards and sanctions will support these rules, usually in the form of peer pressure. There is comfort and predictability as routines and rituals bond the group. Change is not welcome. A culture has been formed. (p. 12)

Many authors have written extensively about school culture (e.g. Cunningham & Gresso, 1993; Hopkins, Ainscow & West, 1994; Sergiovanni, 1994; Fullan & Hargreaves, 1996; Gruenert 2000; Maslowski, 2001). It has been defined as the way people do things and relate to each other within the school (Cunningham & Gresso, 1993); as a generic term for the underlying assumptions, values and norms in school, and the myth, heroes, symbols, practices and rituals in which the latent culture manifests itself. The basic assumptions of school members are related to their values and norms, and these, in turn, are linked to the stories and symbols within the school and with the practices and rituals that exist (Maslowski, 2001). According to Hopkins et al. (1994), school culture relates to:

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- The observed patterns of behavior (e.g. how teachers interact in the staff room, how they communicate with each other, the language they use, the rituals they establish).
- The norms that evolve in working groups of teachers in terms of lesson planning or monitoring the progress of students.
- The dominant values espoused by the school, typically through a mission statement.
- The philosophy that guides the approach to teaching and learning of particular subjects in a school.
- The unwritten policies and procedures that new teachers have to learn in order to get along in the school or their department.

School culture can be also defined as the guided beliefs, assumptions, and expectations that are evident in the way a school operates (Fullan & Hargreaves, 1996; Gruenert, 2005).

There is no universal definition of school culture, but there is a general acknowledgment that every school has its own unique culture. It is either an ineffective culture, characterized by the absence of vision and cohensiveness, or an effective culture, where staff and students exhibit such qualities as trust, cooperation, confidence, and commitment to do their best (Stolp & Smith, 1995). Kachur, Stout and Edwards (2013) note that school cultures can be placed on a continuum from complacent, 'satisfied with the status quo' schools on one end to highly cohesive, forward-moving schools on the other. Schools on the complacent end have a great deal of difficulty trying to reshape their cultures so staff members will value working and learning together to make their school a great place for everyone. To focus on each school's culture means 'to look at' its values, beliefs, and traditions that have been formed over time.

The organizational culture of a school has being created for a long time. And, patterns of culture have a fairly significant durability as important components of a school. It does not mean that they are immutable and resistant to environmental influences or internal factors, but change of the culture takes time. School culture affects the overall performance and effectiveness of the school. The literature indicated that a healthy school culture is usually marked by professional collaboration and professional learning among all members of the organization with a common core of values and beliefs (e.g., Valentine, 2006; Zepeda, 2013). Therefore, through collaboration and collegiality, with the goal of promoting the professionalization of all teachers, teacher leadership can strengthen the building of a healthy school culture and could further enhance the capacity for change and improvement at both the school and classroom levels (Harris & Muijis, 2003).

Wang and Zepeda (2013) compared the experience of teacher leaders from two middle schools in China and indicated that the teacher leadership and the school culture were two interrelated factors. At KM Middle School (representing high-performing school) with a healthy school culture, more prospective teacher leaders developed and the current teacher leaders were able to exert their leadership efficiently with a positive impact. Whereas at SY Middle School (representing a low-performing school) with an unhealthy school culture, it was difficult to develop teacher leaders. They concluded that a healthy culture marked with positive learning attitudes, a wide range of collaboration and trust, provides a foundation for teacher leadership. They also suggested that more research is needed in this area.

The Role of the Principal in School Culture Shaping

Moffitt (2007) stated that leadership is synonymous with power because it is a part of the influence process. Hence, the school leaders have the power, authority and position to impact the culture and climate of the school. In the 1990s, researchers (e.g. Sashkin &

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Sashkin, 1990; Endeman, 1990) showed an 'interrelationship' between leadership and organizational culture. Sashkin and Sashkin (1990) assessed leadership and culture in twelve different schools in one district. They measured leadership characteristics, such as self-efficacy and leader's impact on organizational culture, in relation to such factors as attaining goals, working together as a team, and sharing values and beliefs. The results showed a strong web of relationships among leadership variables and organizational culture. And all the relationships were statistically significant (after: Stolp & Smith, 1995).

According to MacNeil, Prater and Busch (2009), there is substantial evidence concerning the importance of leadership in creating good school environments. It seems to be that the principal does not directly affect student achievement, but indirectly effects teaching and learning by impacting the school climate. The way in which the principal behaves, as well as the leadership style that he/she follows, influences the views of the educators with regard to the prevalent work atmosphere and resultantly has an influence on the organizational climate of the school (Hoy et al., 1991; Hoy & Tarter, 1997). Organizational climate is not the same as organizational culture (Gruenert, 2008), but it is the main window by which observers can get a sense of the prevailing culture. Undoubtedly, principals might well foster teachers' collaboration through their own helping behavior. It is the responsibility of both sides: individual teachers and principals to develop an atmosphere of collegiality and professionalism. The principal can build a positive school culture which is reflected by the positive school climate which serves everyone. The study conducted by Moffitt (2007) clarified that the principal is the primary person for instituting leadership among all within the school which ultimately contribute to student achievement

Brankovic, Rodic and Kostovic (2012) stated that effective school leaders are continually working on changing the school, analyzing and examining what their schools need to become better places for all students and employees. They also mentioned the most important tasks of school leaders which include building vision, understanding and development of people, redesigning the organization, and the management of the teaching and learning process in school. Furthermore, a large number of researchers came to the conclusion that the principal behaviors, theoretically constructed as a principal's leadership style, is the most important factor of teachers' job satisfaction (see Josanov-Vrgovic & Pavlovic, 2014, p. 43). Our earlier research (see Tłuściak-Deliowska & Dernowska, 2015) conducted among middle school teachers established that teachers perceived their principal as supportive rather than restrictive. It means that principals are helpful and genuinely concerned with teachers' successes. Furthermore, supportive and directive principal behaviors were found to be positively correlated with teachers' job satisfaction.

Although culture may be a nebulous concept in a reality where principals need concrete results in student achievement, linking culture and student achievement may allow principals to re-center their energies on more human aspects of school leadership. Some school administrators are transforming their beliefs about productivity and effectiveness, embracing a more human approach, away from the mechanistic paradigm, with the hope that these efforts will provide the settings necessary for increased student and teacher learning. Yet, as schools are held more accountable for student achievement, primarily defined as higher test scores, the challenge of collaboration may not seem warranted (Gruenert, 2005).

Aim of the Research

Regarding results and conclusions from the above mentioned investigations, this study was prepared with attention seeks to explore school culture in two selected schools. It is obvious that there are no two same schools, thus, no two identical cultures of schools.

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Nevertheless, a comparison of two schools with certain characteristics similar to each other, while others extremely different, can provide interesting results relevant to leadership, also for pedagogical practice.

The purpose of this study was to explore school culture in two radically different schools regarding school achievement. This study employed a comparative-descriptive research design. The particular objectives of this study were to investigate: (1) the teachers' perceptions of their school culture (2) the teachers' perceptions of principal behaviors and additionally (3) to determine the relationship between principals' behaviors and perceptions of their school culture by teachers. We expected that there are significant differences between schools in their school culture dimensions as well as in perception of principal behaviors. Additionally, we assume that the role of school principal is significant for the school culture creation and perpetuation.

Method

Settings

This study took place in A-Middle School, representing a high-performing school, and B -Middle School, representing a low-performing school. These two middle schools were both located in capital city of Poland and were selected based on their position in Warsaw Middle Schools Ranking. These two schools are approximately 10 kilometers apart.

A-Middle School is commonly perceived as an ideal place for learning. This institution provides high quality educational services for students, parents and the local community. This school is famous for its great achievements of students in various competitions, particularly in Maths and Physics. The school offers a wide range of extracurricular classes and activities to enable students to develop their skills and talents. Based on the analysis of the statute and the documentation of this school we can learn that students' learning at the highest professional level is recognized as a basic task of this school. Furthermore, it is imperative that they equip students with the skills necessary to function in a rapidly developing world, in particular the ability to continue effective learning. The faculty attaches a great importance to providing education and educational content in an attractive, modern and easily digestible venue for young people. High quality education and professionalism of pedagogical work are the essential values of this teaching staff. Quality control of classes and objective assessments of the teachers' work are important elements of quality management of the educational process. The ambition of the community is for this school to be a leader in the quality of education. Based on school performance and students' achievements, we can say that this objective is being achieved.

B-Middle School is not as famous as the School A and the results of standardized, external tests are not as spectacular and high. School B declares, that the welfare of the child is the highest priority, and it emphasizes that "an individual approach matters." In the statute, the school declares providing the opportunities for learning and cognitive and physical development for students. This school strongly stresses that the process of successful human development requires conditions of respect for the dignity of students, as well as freedom of religion and freedom of thought. As a lower-secondary compulsory school, it enables the students to fulfill their obligation of schooling. According to further declarations included in the statute, teaching and all other activities of the school are carried out in accordance with the educational rules, the law, The Universal Declaration of Human Rights and the ideas expressed in the Convention on the Rights of the Child.

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Both schools are similar in size, and both have a similar number of students and teachers. Both offer a wide range of extracurricular classes and activities to enable students to develop their skills and talents. There is a difference between these selected schools regarding student academic achievement. Table 1 shows the detailed data comparison between A-Middle School and B-Middle School.

Table 1. *Data comparison between A-Middle School and B-Middle School during the 2015-2016 school year.*

	A-Middle School	**B-Middle School**
Number of students	450	420
Teachers' average seniority	17	20
Teachers' average seniority at this school	10	13
The percentage of chartered teachers	68	66
Non-teaching staff numbers	13	10

Participants

Researchers invited all teachers working in both schools. In A-Middle School the collected questionnaires were 31 (27 women, 3 men, 1 no data). In B-Middle School the collected questionnaires were 34 (25 women, 6 men, 3 no data). In both schools, all teachers have master degrees.

Measures

Measures were obtained from a self-report questionnaire administered to the participants in the school building.

Measurement of School Culture

The "School Culture Survey" (Gruenert & Valentine, 1998) was used to assess the collaborative nature of each school culture. This questionnaire has been successfully used in many countries to study school culture (Serbia: Brankovic, Rodic & Kostovic, 2012; Etiopia: Butucha 2013; Turkey: Gumuseli & Eryilmaz, 2011). The School Culture Survey is an instrument designed to be administered to teachers in a school building to get a sense of how collaborative the educators are within the school. The School Culture Survey consists of 35 items describing distinctive behaviors of adults in the school. Each item in this questionnaire is rated using a 5-point Likert scale from *strongly disagree* (1) to *strongly agree* (5). Although the concept of school culture may embrace a number of factors, Gruenert and Valentine (1998) have identified six dimensions of school culture: (1) unity of purpose (5 items, $\alpha = 0.92$), (2) collaborative leadership (11 items, $\alpha = 0.93$), (3) professional development (5 items, $\alpha = 0.82$), (4) teacher collaboration (6 items, $\alpha = 0.73$), (5) collegial support (4 items, $\alpha = 0.80$) and (6) learning partnership (4 items, $\alpha = 0.66$). Higher ratings on the factors of the School Culture Survey demonstrate stronger agreement with the survey statements. Gruenert and Whitaker (2015, s. 86) emphasize that it is important to think of the responses as those of the culture – a community voice – rather than of any one individual.

Measurement of Principal Behaviors

To determine the teachers' perceptions of principal's behaviors, "The Organizational Climate Description Questionnaire - Middle Level" (OCDQ-ML, Hoy et al., 1996) was used.

This questionnaire consisted of 50 items. The teachers' task was to comment against statements using a four-level scale, ranging from 1 – rarely occurs, 2 – sometimes occurs, 3 – often occurs and 4 – very frequently occurs. The questionnaire contained six dimensions. In this study three dimensions related to principal behaviors were taken into account: (1) "supportive principal behavior" is directed toward both the social needs and task achievement of faculty (11 items, α = 0.94); (2) "directive principal behavior" is rigid domineering behavior (6 items, α = 0.76); and (3) "restrictive principal behavior" is behavior that hinders rather than facilitates teacher work (4 items, α = 0.71). Higher ratings demonstrate stronger agreement with statements belonging to the particular dimension.

Data analysis

The IBM SPSS Statistics version 24 was used for data management. Interpretation of the results was based on the statistical analysis of the data. Analysis first considered descriptive statistics of main variables: (1) school culture and (2) principal behaviors and next, comparisons of mean values using Student's *t*-test were made. Additional analysis - analysis of the relationships between main variables - was based on the correlation analysis.

Results

Comparison of School Culture Indicators

First, school culture factors were calculated to identify the structure of each school's culture. The results of the comparison of school culture indicators between the two schools are presented in table 2.

Table 2. *Means, standard deviations, t- value and significance level for A-Middle School and B-Middle School on school culture.*

	A-Middle School		B-Middle School		T	df	Sig.
	M	*SD*	*M*	*SD*			
Collaborative leadership	3.36	0.60	4.30	0.54	-6.461	59	0.000
Teacher collaboration	3.53	0.64	3.90	0.51	-2.486	60	0.016
Unity of purpose	3.83	0.61	4.00	0.84	-.894	61	0.375
Professional development	3.87	0.65	4.28	0.54	-2.785	62	0.007
Collegial support	3.35	0.74	3.73	0.77	-1.978	61	0.052
Learning partnership	3.71	0.39	3.70	0.61	0.085	55,075	0.930

*p < 0.05 (two-tailed)
** p < 0.01 (two-tailed)

The data in table 2 indicate that A-Middle School had the highest mean scores for professional development (*M* = 3.87), followed in descending order, by unity of purpose (3.83) and learning partnership (3.71). Collegial support and collaborative leadership were rated lowest.

According to the B-Middle School, the higher mean scores were for collaborative leadership (*M* = 4.30), professional development (4.28) and unity of purpose (4.00). Learning partnership was rated lowest.

Significant differences in school culture indicators between compared schools were identified in four dimensions: (1) collaborative leadership (p < 0.001), (2) professional development (p < 0.01), (3) teacher collaboration (p < 0.05) and (4) collegial support (bordered on a statistically significant value). In all cases, higher averages are typical for B-

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Middle School, which may mean that the collaborative nature of their school culture is stronger than School A.

Comparison of Principal Behaviors

The teachers' perceptions of principal's behaviors were calculated in the next step of analysis. Findings are presented in Table 3.

Table 3. *Means, standard deviations, t- value and significance level for A-Middle School and B-Middle School on principal behaviors.*

	A-Middle School		B-Middle School		T	df	Sig.
	M	SD	M	SD			
Supportive principal behaviors	3.19	0.86	4.40	0.50	-6.856	59	0.000
Directive principal behaviors	3.52	0.70	3.65	0.63	-.819	62	0.416
Restrictive principal behaviors	3.95	0.85	3.06	0.87	4.092	60	0.000

*p < 0.05 (two-tailed)
** p < 0.01 (two-tailed)

In A-Middle School, restrictive principal behaviors were rated the highest (M = 3.95) by the teachers, and supportive behaviors were rated the lowest (3.19). Quite the opposite situation than found in B-Middle School: supportive principal behaviors were rated the highest (4.40) and restrictive principal behaviors were rated the lowest (3.06).

As seen in Table 3, significant differences between the compared schools were identified according to these two dimensions. More supportive principal behaviors were typical for school B (difference is significant at the p < 0.001 level), while restrictive principal behaviors were more common in school A (difference is significant at the p < 0.001 level). Directive principal behaviors are at similar levels in both schools.

Relationships Between Principal Behaviors and School Culture

The last step of analysis was to examine the relationships between principal behaviors and school culture indicators. It was decided to conduct this analysis without division into two schools because of searching for general regularities. The results of correlation analysis are presented in the table below.

Table 4. *Correlation coefficients between principal behaviors and school culture indicators.*

School culture factor	Supportive principal behaviors	Directive principal behaviors	Restrictive principal behaviors
Collaborative leadership	.84**	.22	-.59**
Teacher collaboration	.36**	.30*	-.26
Unity of purpose	.24	.12	-.28*
Professional development	.59**	.29*	-.44**
Collegial support	.28*	-.02	-.24
Learning partnership	.18	.15	-.27

*p < 0.05 (two-tailed)
** p < 0.01 (two-tailed)

The data in Table 4 indicate that the lowest correlation coefficients were documented between directive principal behaviors and four school culture factors. Only two of these relationships were statistically significant (with teacher collaboration, r = 0.30; p < 0.05 and professional development r = 0.29; p < 0.05). Positive correlations occurred between

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supportive principal behaviors and all six school culture factors. The strongest correlations were documented between supportive principal behaviors and collaborative leadership ($r = 0.84$; $p < 0.01$) and professional development ($r = 0.59$; $p < 0.01$). Negative correlations exist between restrictive principal behaviors and collaborative school culture indicators. In particular, with collaborative leadership ($r = -0.59$; $p < 0.01$) and professional development ($r = -0.44$; $p < 0.01$).

Discussion

Three major themes were constructed in this study. The first theme is the discussion of the different culture in the two schools. Statistical comparisons of collaborative school culture in perception of teachers indicated that the compared schools differ significantly in four school culture dimensions. The results show that A-Middle School presented an emphasis on professional development and high goal orientation which is expressed in the factor *unity of purpose*, and moderate-high *learning partnership* and a relatively lower participation of teachers in decision making, leadership and supporting relationships among teachers. In B-Middle School the same two dimensions were highly rated, namely *professional development* and *unity of purpose*, but issues concerning mutual cooperation and positive interpersonal relationships proved to be equally important. Interestingly is that in all school culture indicators higher averages were typical for B-Middle School, which may mean that the notion of a collaborative school culture is stronger in this school. On the basis of these results it can be stated that in school A there is a culture focused on individual achievements, which feels like a value placed on competition more than cooperation, unlike the situation in B-middle school, in which a collaborative school culture is strong and visible. The values that undergird the school culture is different in these educational institutions.

The second theme investigated was principal behaviors. According to this theme, significant differences between the compared schools were also identified. Namely, more supportive principal behaviors were typical for School B (low-performing), while restrictive principal behaviors were more common in School A (high-performing). Principal behaviors which reflect a basic concern for teachers and expressed in i.e., listening and being open to teacher suggestions, genuinely and frequently given praise, are more common in School B. On the basis of these results it can be stated that the school management style by these principals is completely different in these schools. Directive principal behaviors are at similar levels in both schools. Maybe this kind of behavior - maintaining close and constant control over all teacher and school activities – is simply inscribed in the functioning of all principals, hence no difference between any schools may significantly exist when looking at this trait. Regardless of this, it should be noted that the two schools differ due to the way the principals behave, and it may be significant for the whole functioning of the school. It can be said that the style of management of one school is in opposition of the management in the second one. Perhaps this is a key of success, which is identified with the achievements of students in the ranking. However, it is interesting that despite restrictive principal behaviors, A-Middle has a greater achievement than the B-Middle school.

Regarding the third theme, the results indicate that principal behaviors and collaborative school culture were associated with each other. Restrictive principal behaviors, in contrast with supportive behaviors, maintain a negative relationship with the various dimensions of a collaborative school culture and thus hinder its evolution toward a more collaborative environment. Particularly, these two categories of principal behaviors were important especially when considering collaborative leadership and professional development. Principal behaviors in these areas either help or hinder. Furthermore, supportive principal

behaviors were positively correlated with collegial support, which may mean that the principal behaviors constitute a model for the behaviors of others employees, and perhaps students too. Directive principal behaviors are rather neutral to the collaborative nature of the school culture.

Results of the current study provide an interesting backdrop for reflection on issues of the relationship between school principals behaviors, school culture and school achievement. The dimensions of school culture are dependent on the style of school management by principal, as well as on the specific conditions in which the school operates (see Brankovic, Rodic & Kostovic, 2012). These results lend support for the findings of the previously cited authors who have studied the relationship between leadership and school culture. Correct and creative development of the school's culture depends on principals' activities based on cooperation and dialogue with employees, students, and their parents.

Conclusion

This study investigated two schools that were similar in many aspects, i.e., demographics of students and educators, structures related to government support, as well as region in the country. Yet, the two schools demonstrated polarized student achievement results, as dictated by standardized test scores. While the notion of using test scores to determine the quality of education extant in a school is constantly being debated, we wanted to take a closer look into the social architecture of each setting, namely the school's culture. Relevant to a collaborative school culture, do the best performing schools use collaboration as a foundation to realize success? Our findings suggest no.

It seems possible to achieve success in schools (using test scores as the criterion) without having to be very friendly. Competition may provide the best setting if test scores are the only criterion to be assessed. This study looked at correlations, not causality. However, if a school is having success with student achievement (test scores) should we ask about the degree of cooperation, trust, and relationships, or just be quiet and enjoy this brand of success? Should educators ever decide that test scores are not the greatest source of determining school quality we may be surprised as to how many principals are unable to secure strong relationships as opposed to being a dictator. Therefore, we agree with Gumuseli and Eryilmaz (2011) conclusion that the prominent role of the principal is to stimulate professional learning communities and create working teams to improve the quality of the schools.

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The Comparative Analysis of the Perceptions of Parental Styles and Attitudes and Parental Attachment of University Students

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Abstract

Adolescence is an important stage for parental attitudes and parental attachment style may affect each other. In this study, university students were comparatively analyzed in terms of their perceptions about their parents' attitudes and their parental attachment styles. The sample of the study consists of 214 female and 187 male students from a university in Turkey. In order to measure children's perceptions of their parents' attitudes as well as children's demographic information, the researchers were prepared the 'Personal Information Form' and was implemented into the classroom settings. In addition, in order to measure attachment styles, the 'Inventory of Parent and Peer Attachment Short Version (IPPA-S) was used. Participants were asked to complete The Parental Attitude Scale (PSC) in order to determine the adolescents' perceptions of their mothers and fathers attitudes. Data were analyzed using SPSS 20. Descriptive statistics, t-test and one-way ANOVA were used. Findings indicated that there was a statistically significant difference between the adolescent perceptions of maternal and paternal style and parental attachment styles. Authoritative parenting style had more secure attachment than other three parenting styles (authoritarian, permissive/indulgent and negligent). Also, it had better results than the other three parenting styles for both maternal and paternal attachment sub-scales.

Key Words: Adolescents, Parental Attitudes, Attachment, Perception,

Introduction

Children are the sources of the next generation in the world and the families have had an objective bring up their children in a good environment. The upbringing of the children has exposed big responsibilities to the families in order to prepare a child for the social life. In the 21st century world, the parents have no longer duties to satisfy basic physical human needs of the children namely food, shelter, clothing, etc. Moreover, they have to meet the psychological needs of the children, love their children, help them to achieve their personal development and show an interest in their lives (Neeraja, 2008, p. 5). One of the decisive factors in the children development is the parental attitude toward their children and each other. If there are mutual love and respect in the family relations, it is highly likely that parental attitudes may cause healthy emotional development and decrease tension and conflicts in the family (Mangal, 2007, p. 100).

Family plays an important role for the individual attitudes and behaviors. Socialization process starts in the family environment. Many behavioral problems in adolescents may have rooted in the childhood upbringing especially unsuccessful mother-father-child relationship (Robinson, 2009). The social, emotional and moral development of the children mostly depends on interactions styles of mothers and fathers with each other as well as their children. The interaction between parents and child is closely affecting and affected by a variety of social outcomes including peer relations, moral development, achievement and aggression (Ogretir-Ozcelik, 2017a). During the childhood, the quality not the quantity of the parent-child relationship is an important factor for the socialization process. In a child development literature, it is a long tradition to study the effect of the parent-child relationship on the development of child's behavior, attitude and attachment. Most of the studies in the parental attachment and style usually follow Baumrind's hypothesis that parenting styles are contemplated to be an analytical process of socialization (Baumrind, 1968; Öğretir-Özçelik, 2017c).

Parenting style concerns with studying the relationships between parents and children. Parenting style combines several elements in order to create the emotional climate in which parents communicate with their attitudes about their child (McQueen, 2015). Parents perform specific practices such as spanking to assure the child do his/her homework and involve children's activities. Parenting style shows the parents' overall feelings about the child through tone of voice, temper, emotional display, quality of attention and even body language (Bornstein and Zlotnik, 2009, p. 281).

Parenting style investigates parenting influences on children's development. The leading researcher in parenting style, Diana Baumrind, implemented comprehensive research by observing parents interaction with their children in their homes. She introduced the first typology with three parenting styles based on levels of responsiveness and control: authoritative, authoritarian, and permissive (Baumrind, 1971; Öğretir-Özçelik, 2017b). The authoritative parenting style is characterized by high responsiveness the child's needs and at the same time demanding the child to comply with a reasonable set of limits and rules (Shaffer, 2009). It can be best exemplified by a democratic family environment in which adolescents are encouraged to share their opinions and participate in family decision-making process. The parent may play the authority figure and stay firm but respect and support the child's individuality and autonomy (Öğretir, 1999). According to Baumrind, the most successful parenting style is the authoritative parenting. When the parent uses this style, they balance control with warmth and created children who were socially competent and self-reliant (White and Schnurr, 2012, p. 59). Characteristics of the authoritative parenting are as follows: clear settings of standards by parents, an expectation of maturity from the child, use of commands and sanctions, firm enforcement of rules, open communications between parent and child, encouragement of verbal give-and-take in the family communication, respecting child's independence and recognition of the rights of both parents and children (Powell and Schmitt, 2016; Nevid, 2008, p. 316).

The second style is the authoritarian parent who displays high control and little warm. The parent discourages the child's autonomy, limits the child's emotional expression, and gives importance to obedience. The authoritarian parents are overcontrolling and rigid (Bjorklund and Blasi, 2012, p. 518). If the children questionize the parent and dare to ask why they follow the rules, the answer likely includes these phrases: "Because I am the parent and you are not." or "Because I say so." The authoritarian parents set absolute standards to attempt to control child behaviors. They emphasize respect for authority discourages parent-child give-and-take (Pressley and McCormick, 2007, p. 305).

The third style is permissive that conceptualizes the parent as tolerant and accepting. Permissive parent fails to restrict the child, uses little punishment, demands no mature behaviors from the child, and allows a high level of autonomy (Weiten and Lloyd, 2006, p. 364). The amount of parental warmth and affection toward the child is low. The parents show low levels of control. Baumrind later includes neglectful parenting that is a low level of acceptance and control (low emotional support and low limits). Also, many researchers found a high level of relationships between children's behaviors and attitudes and parenting styles (Weiten, et.al., 2012, p. 189).

Maccoby and Martin (1983) later revised the Baumrind's typology by testing the generalizability on more diverse sets of populations. They conceptualized parenting styles in two dimensions their orthogonal approach with a quadripartite model: responsiveness and demandingness. The first dimension, demandingness, is similar to the dimension of control. It refers to parental control and how much the parent expects the child to exhibit responsibility and maturity (Lerner et al., 2001, p. 486). Parents supervise their children activities, attempt

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to discipline the child and respond to the child request if he or she disobeys. This dimension can be operationalized as follows: psychological autonomy versus psychological control, permissiveness versus restrictiveness, overprotection versus autonomy and independence (Sigelman and Rider, 2012, p. 490). The second dimension, responsiveness, can be conceptualized with affection, acceptance, sharing, positive evaluation, emotional support, equalitarian treatment, care, empathy, and closeness. In the other dimension, it includes emotional coldness, rejection, ignoring, neglecting, rejection and indifference (Levine and Munsch, 2014; Peterson, et al., 2012.pp. 23-24).

Many studies suggest that there is an equal contribution of mother and father on child development. The fathers may have a different influence on their children than the mothers. They can make an independent and unique input into their children social development especially their social behavior with peers. Although fathers may have involved fewer children development in terms of time and energy with quantitative terms, their impact on their children development qualitatively is rather important as mothers on social and cognitive development (Parke and Buriel, 2006, p. 438).

In early childhood, the study of attachment bonds between parent and child is primarily a core area of academic work (Bowlby, 1969). In recent scientific studies, it has seen the reconceptualization of attachment by shifting from early childhood through to adolescence. Some studies examine in a greater depth of the study of adolescents' actual attachment relationship and their parental attitude. From the childhood development perspective, adolescence is an important stage for critical change in emotional, behavioral and cognitive systems for attachment. Adolescents begin to apart themselves from their parents and acquire their own point of views (Newman and Newman, 2012, p. 329). The transition from childhood to adolescence can be equated to search for greater autonomy and independence from their parents (Breinbauer and Maddaleno, 2005). The parent may have a need to modify autonomy and connectedness in the family environment. However, the attachment relationship between the parent and adolescent still goes on if the adolescent has close, lasting and secure relationships and attachment bonds with his/her parent. In a high-context (collectivistic) culture society such as Turkey (Ogretir, 2008), even if adolescents behave independently from their parents, they can look for support in case of real need and they believe that their parents are available attachment figures. From a theoretical point of view, it is crucial to examine similarities and differences between the typical attachment style between parent and adolescent because of the significance of attachment in adolescence.

Methods

Research Model

The parenting style and adolescents' parental attachment have possible relationships with each other as well as other variables such as gender. As a result, the present study is crucial to evaluate whether there are any changes between parenting style and adolescents' attachment style among the university students in Turkey. The research question of the study is whether there is a statistically significant difference between parenting styles (authoritative, permissive, authoritarian, and negligent) and adolescents' parental attachment total score and subscale scores (trust, communication, alienation). The current study is an important contribution examining any effects of parenting style on parental attachment and vice versa in a different cultural context, specifically the Turkish case. It also helps parents, counselors, and other important institutions to realize the importance of parenting styles and parental attachment. It may produce future researchers on investigating the relationship among

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parenting styles, parental attachment sub-scales and other variables in different contexts. The current study employed descriptive and inferential statistical models.

Participants

The sample of the study was chosen in random sampling from the population of the study who was the university students provided demographic information about their age, department, class, place of birth, family type, parental marital status, number of children in the family, the sequence of the children, income status, and friendship relations with same sex and opposite sex. The study sample consisted of 187 (% 46,6) male and 214 (% 53,4) female students. The age range of the participants was as follows: 15-20 years old were 160 (% 39,9) and 21-25 years old were 241 (% 60,1).

Table 1. Demographic Results of the University Students

Variables		n	%
Gender	Female	214	53,4
	Male	187	46,6
	Total	401	100
Age	15-20 years old	160	39,9
	21-25 years old	241	60,1
	Total	401	100

Data Collection Tools

For the data collection tools, the participants filled out the personal information form as well as two instruments. First, the parental attitudes scale (PAS) was used in this study. Second, the Inventory of Parent and Peer Attachment (IPPA-S) short version was filled out by the participants.

Parental Attitude Scale (PAS)

The instrument was designed to measure parental attitudes and developed by Lamborn et al. (1991). In a short version, it has 26-item in 4-point Likert Scale that is based on 3 factors. The factors are Acceptance/Involvement, Control/Supervision, and Psychological Autonomy. There are 9 items in the Acceptance/Involvement dimension of the scale, 8 items in the Control/Supervision and 9 items in the Psychological Autonomy. The score of internal consistency coefficients for acceptance/involvement was 0.72. For control/supervision, the score of coefficiency was 0.76. The psychological autonomy was 0.82. The adaptation of the scale has been made by Yılmaz (2000) with reliability and validity tests of the scale in the Turkish language. It was indicated that for the acceptance/involvement sub-scale test-retest validity coefficient was 0.74, Cronbach's Alpha coefficient was 0.60; for strictness/supervision the test-retest validity coefficient was 0.93 and Cronbach's Alpha coefficient was 0.75; and for psychological autonomy, test-retest validity coefficient was 0.79 and Cronbach's Alpha coefficient was 0.67.

Four parental attitudes are categorized from intersecting Acceptance/Involvement with Control/Supervision dimensions. Median values of the scores are used in assessing parental attitudes, where children whose scores are in the median range. It is distinguished that the parents of the children who are graded over the median in Acceptance/Involvement and Control/Supervision dimensions are "democratic", the parents of the children who are graded under the median in those dimensions are "negligent". The parents of the children who are graded under the median and the parents of the children who are graded over the median in the Acceptance/Involvement dimension are put in "authoritative" category. The parents of the

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children who are graded above median in Acceptance/Involvement dimension and the parents of the children who are graded under median in Control/Supervision dimensions are categorized as "permissive". Psychological-autonomy dimension is left out of the assessment. There were four parental styles: Authoritative, permissive, democratic and negligent (Tura, 2017: 31-32).

In the form, the Acceptance/Involvement dimension has nine items with numbers of 1, 3, 5, 7, 9, 11, 13, 15, and 17. The psychological autonomy dimension is numbered in nine items in the form with these numbers: 2, 4, 6, 8, 10, 12, 14, 16, and 18. All of these dimensions were used the 4-point Likert scale. The Control/Supervision dimension has eight items in the scale with numbers 19, 20, 21, 22, 23, 24, 25, and 26. The first two items were given 1 to 7 scores if the answer is "no". After item number 21, the scale was used 3-Likert point as 1 for "no effort", 2 for "less effort", and 3 for "more effort" (Yılmaz, 2000).

In the current study, the Cronbach Alpha for control/supervision subscale was 0,749. The Cronbach Alpha score for acceptance/involvement was 0,727. The Cronbach Alpha score for psychological autonomy was 0,719.

Inventory of Parent and Peer Attachment Short Version (IPPA-S)

The attachment to parents was assessed with a short version of Inventory of Parent and Peer Attachment (IPPA) (Armsden and Greenberg, 1987). The instrument was developed to measure both cognitive and affective dimensions of attachment security and trust in the responsiveness and accessibility of parents. It was adapted to Turkish by Günaydın et.al. (2005). The study sample filled out a shortened version of the scale (IPPA-S) that was designed by Raja et al. The instrument is divided into three sub-scales in order to shed light on the quality of communication and the degree of trust and alienation in parent-adolescent relationships. The instrument thinks the parents as a source of psychological security. It has three subscales, although the use of the total scores is recommended over subscales scores. The total score can be used for the secure attachment. The three subscales are labeled as trust (T), communication (C), and alienation (A) for three dimensions of the attachment relationship. Trust refers to the adolescents' trust that parents and peers respect their needs and desires and understand each other. Communication refers to adolescents' perceptions that parents and peers are responsive and sensitive to their emotional states and evaluating the quality and extent of involvement and verbal and non-verbal communication with them. Alienation refers to adolescents' feelings of detachment, isolation, and anger experienced in attachment relationships with parents and peers (Guarnieri et al., 2010).

In the shortened version, the form has 12 items that were scored on a seven-point Likert scale. When the participants have higher scores, it correlates with a more secure attachment for overall and subscale scores. A 7-point Likert scale was used with categories of 1=never to 7= always. For example, "I tell my mother/father about my problems and troubles" is one of the 12 items in IPPA-S form.

In the current study, the Cronbach Alpha score for total maternal attachment was 0,861. The Cronbach Alpha score for maternal trust was 0,762. The Cronbach Alpha scores for maternal communication and alienation was 0,736 and 0,676, respectively. For total paternal attachment of the Cronbach Alpha, the score was 0,889. The paternal trust score of the Cronbach Alpha was 0,783. The paternal communication and alienation of the Cronbach Alpha were 0,836 and 0,758, respectively.

Data Analysis

Data were analyzed by using SPSS 20 software. Percentages, median, t-test and one-way analysis (ANOVA), Independent sample t-test were employed to analyze the differences between gender and maternal and paternal attachment subscales. ANOVA test results were treated for the analysis of differences between maternal and paternal attachment subscales and maternal and paternal parenting styles.

Results

Results of t-test which was performed to determine whether there were significant differences in university students' maternal attachment sub-scales and gender .

Table 2. *t-Test Results of University Students' Perceived Maternal Attachment Styles by Gender*

Maternal Attachment Subscales	Gender	n	Mean	Std. Dev.	t-Test	
					t	p
Maternal Trust	Female	214	16,78	3,40	1,211	,227
	Male	187	18,22	3,61		
Maternal Communication	Female	214	21,37	4,27	4,251	**0,000***
	Male	187	20,02	4,24		
Maternal Alienation	Female	214	9,03	4,66	-3,300	**0,000***
	Male	187	10,60	4,89		
Maternal Attachment	Female	214	67,27	11,72	4,151	**0,000***
	Male	187	62,36	11,88		

There were statistically significant differences in sub-dimension points of maternal attachment and gender [t (401) = 4,151, p<.000]. The mean scores of maternal attachment of female students ($\overline{X}$ = 67,27) were much higher than the mean scores of maternal attachment of male students ($\overline{X}$ = 62,36). When the results for maternal communication attachment scores were compared, the results indicated statistically significant differences between gender [t(401)=4,251, p<.000]. The maternal communication scores of females ($\overline{X}$ =21,37) were much higher than the maternal communication scores of males ($\overline{X}$ =20,02). It is interesting to note that there were statistically significant differences between maternal alienation attachment subscale and adolescent gender. The results showed that maternal alienation sub-scale had much higher scores for male ($\overline{X}$ =10.60) than female ($\overline{X}$ =9.03) [t(401)= 3,300, p<.000]. However, there were no statistically significant differences between maternal trust attachment scores [t(401)=1,121, p<.227] by gender.

Table 3. *t-Test Results of University Students' Perceived Paternal Attachment Styles by Gender*

Paternal Attachment Subscales	Cinsiyet	n	Mean	Std. Dev.	t Testi	
					t	p
Paternal Trust	Female	214	22,83	4,98	3,269	**0,000***
	Male	187	21,06	5,87		
Paternal Communication	Female	214	20,04	5,21	2,355	0,019
	Male	187	18,78	5,50		
Paternal Alienation	Female	214	9,91	5,11	-3,528	**0,000***
	Male	187	11,86	5,93		
Paternal Attachment	Female	214	48,02	7,03	0,156	0,876
	Male	187	47,90	8,19		

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In Table 3, the means, standard deviations, and t-test results of the paternal attachment sub-scales and gender were presented in order to analyze the effects of gender on parental attachment. Statistically significant difference was determined in sub-dimension points of paternal trust attachment sub-scale and gender [t (401) = 3,269, p<.000]. The mean scores of paternal trust attachment of female students ($\overline{X}$ = 22,83) were much higher than the mean scores of paternal trust attachment of male students ($\overline{X}$ = 21,06). Paternal alienation attachment subscale was significantly higher among female adolescents than male adolescents [t (401) = 3,528, p<.000]. The male students ($\overline{X}$ = 11,86) have statistically significant results on paternal alienation attachment than the female students ($\overline{X}$ = 9,91). It is noted that there were no statistically significant differences between paternal communication attachment subs-scales and gender. Similarly, results showed no significantly higher scores for paternal attachment scores by gender.

Table 4. *One-way ANOVA Test Results of the University Students' Maternal Parenting Styles and Maternal Attachment Style Sub-Scales*

Maternal Attachment Subscales	Maternal Parenting Style	n	Mean	Std.Dev.	One Way ANOVA	
					F	p
Maternal Trust	1.Neglectful	159	16,78	3,87	26,338	0,000*
	2.Permissive/ Indulgent	74	18,22	3,15		
	3. Authoritarian	67	18,86	2,87		
	4. Authoritative	101	20,36	2,15		
Maternal Communication	1. Neglectful	159	18,78	4,41	21,326	0,000*
	2.Permissive/ Indulgent	74	20,02	4,30		
	3.Authoritarian	67	21,83	4,29		
	4. Authoritative	101	22,70	3,36		
Maternal Alienation	1. Neglectful	159	12,00	5,08	28,460	,000*
	2.Permissive/ Indulgent	74	9,02	4,02		
	3.Authoritarian	67	9,55	4,25		
	4.Authoritative	101	6,93	3,50		

The relationship between the maternal attachment sub-scales and maternal parenting styles was examined whether there is a statistically significant relationship between two variables among the study sample. The means, standard deviations, and one-way ANOVA results were given in Table 4. According to the results, the scores of the attachment sub-scale of the maternal trust has statistically significant for maternal parenting styles for one-way ANOVA, F = 26,338; p<0.000. The mean score of the neglectful maternal style was (16,78±3,87). The mean score of the permissive-indulgent was (18,22±3,15). For the authoritarian maternal style, the score was (18,86±2,87). The score of the authoritative maternal style was (20,36±2,15). When we compare the maternal communication sub-scale and maternal parenting styles, there is a statistically significant difference F = 21,316, p. 0.000. In the maternal communication attachment subscale, the mean score of neglectful maternal style was (18,78±4,41). The permissive-indulgent and authoritarian maternal style had mean scores of (20,02±4,30) and (21,83±4,29), respectively. The mean score of the authoritative maternal style was (22,70±3,63). The one-way ANOVA result shows that the difference between maternal alienation attachment style and maternal parenting style is a

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statistically significant F = 28,460, p. 0.000. The mean score of neglectful maternal style for maternal alienation was (12,00±5,08). The scores of the permissive-indulgent and authoritarian maternal style was (9,02±4,02) and (9,55±4,25), respectively. For the maternal alienation attachment subscale, the mean score of the authoritative maternal style was (6,93±3,50).

Table 5. *One-way ANOVA Test Results of the University Students' Maternal Parenting Styles and Maternal Attachment Style*

	Maternal Parenting Style	n	Mean	Std.Dev.	One Way ANOVA F	p
Maternal Attachment	1.Neglectful	159	58,13	11,80		
	2.Permissive/ Indulgent	74	65,87	10,89	47,620	0,000*
	3.Authoritarian	67	67,32	9,29		
	4.Authoritative	101	73,56	7,88		

In Table 5, the one-way ANOVA test results revealed that the total scores of maternal attachment and maternal parenting style were statistically significant, F = 47,620, p. 0.000. The mean score of the neglectful maternal style was (58,13±11,80). The mean score of the permissive-indulgent and authoritarian for the total score of maternal attachment was (65,87±10,89) and (67,32±9,29), respectively. The score of the authoritative maternal style for maternal attachment was the highest score (73,56±7,88).

Table 6. *One-way ANOVA Test Results of the University Students' Paternal Parenting Styles and Paternal Attachment Style Sub-Scales*

	Paternal Parenting Style	n	Mean	Std.Dev.	One Way ANOVA F	p
Paternal Trust	1.Neglectful	159	19,50	5,71		
	2.Permissive/ Indulgent	74	21,25	5,80	31,695	0,000*
	3.Authoritarian	67	23,95	4,09		
	4. Authoritative	101	25,20	3,10		
Paternal Communication	1.Neglectful	159	18,25	5,32		
	2.Permissive/ Indulgent	74	17,32	6,02	16,638	0,000*
	3.Authoritarian	67	21,34	4,88		
	4.Authoritative	101	21,65	3,99		
Paternal Alienation	1.Neglectful	159	13,27	5,65		
	2.Permissive/ Indulgent	74	11,06	5,63	27,946	0,000*
	3.Authoritarian	67	9,80	4,55		
	4.Authoritative	101	7,45	3,97		

In Table 6, one-way ANOVA was used to test for the statistically significant relationship between two variables, namely the paternal attachment sub-scales and paternal parenting styles. The means, standard deviations, and one-way ANOVA results were presented to analyze the effect of paternal parenting style and paternal attachment sub-scales to each other. According to the results, the scores of the attachment sub-scale of the paternal trust has statistically significant for paternal parenting styles for one-way ANOVA, F =

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31,695; p<0.000. The mean score of the neglectful paternal style was (19,50±5,71). The mean score of the permissive-indulgent was (21,25±5,80). For the authoritarian paternal style, the score was (23,95±4,09). The score of the authoritative paternal style was (25,20±3,10). When we compare the paternal communication sub-scale and paternal parenting styles, there is a statistically significant difference, F = 16,638, p. 0.000. In the paternal communication attachment subscale, the mean score of neglectful paternal style was (18,25±5,32). The permissive-indulgent and authoritarian paternal style had mean scores of (17,32±6,02) and (21,34±4,88), respectively. The mean score of the authoritative paternal style was (21,65±3,99). The one-way ANOVA result shows that the difference between paternal alienation attachment style and paternal parenting style is a statistically significant F = 27,946, p. 0.000. The mean score of neglectful maternal style for paternal alienation was (13,27±5,65). The scores of the permissive-indulgent and authoritarian paternal style was 11,06±5,63) and (9,80±4,55), respectively. For the paternal alienation attachment subscale, the mean score of the authoritative paternal style was (7,45±3,97).

Table 7. *One-way ANOVA Test Results of the University Students' Maternal Parenting Styles and Maternal Attachment Style*

	Paternal Parenting Style	n	Mean	Std.Dev.	One Way ANOVA F	p
Paternal Attachment	1.Neglectful	159	47,86	9,00		
	2.Permissive/ Indulgent	74	45,27	6,31	5,156	0,002*
	3.Authoritarian	67	49,88	7,16		
	4. Authoritative	101	48,85	5,54		

In Table 7, the one-way ANOVA test for paternal attachment and paternal parenting style displays statistically significant results, F = 5,156, p. 0.002. The mean score of the neglectful paternal style was (47,86±9,00). The mean score of the permissive-indulgent and authoritative for the total score of paternal attachment was (45,27±6,31) and (48,85±5,54), respectively. The score of the authoritarian paternal style for paternal attachment revealed the highest score (49,88±7,16).

Discussion

The purpose of this study was to investigate whether the perceptions of the university students and adolescents differ between their parental attachment styles and parental styles. The findings in this study showed that parenting style may affect the secure attachment of the adolescents. In terms of the overall attachment characteristics, the study found some significant differences between parenting style sub-scales. This finding is consistent with other studies that report positive impact of authoritative parenting style on attachment. The positive impact, in turn, can result in less maternal and paternal distress and an increased possibility of secure attachment.

For the communication attachment sub-scale, the result is parallel to other reportings in the literature. When the parents have authoritative style, they have less communication barrier to their children. The presence of authoritative style can affect mother-adolescent and father-adolescent interaction in a positive way such as non-verbal communications and facial and postural behaviors as well as reciprocal smiling. In addition, the authoritative style may increase the repertoire of the body and facial expressions and produce higher responsiveness

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between parent and adolescent (Öğretir, 2006). When the parent utilizes the authoritative style, both parent and adolescent understand verbal and non-verbal clues given by each other and give appropriate responses (Howe, 2006).

There should be at least three concerns to be analyzed in predicting attachment from the maternal and paternal point of views and parenting styles. The first is whether maternal and paternal attachment and parenting styles predict an independent and unique variance in parental attachment and attitude. That is, what is the contribution of parenting styles on parental attachment. Second, it should be noted that parenting behaviors especially parental control are more sensitive to cultural variations. The current study has indicated that culturally relevant factors may have effects on the universal parenting behaviors, such as warmth and rejecting parenting. Third, mothers are still seen as nurturing agent and fathers serve as the controlling agent in the majority of the cultures in the world. Similarly, the current study predicted that parenting styles differ in maternal and paternal attachment because the cultural variables may affect the university students' perceptions of their parents. The university students in Turkey may have higher levels of maternal trust and communication in authoritative parents than other three parenting styles because they perceived their authoritative parents more trustful and communicative.

The comparison between parenting style and attachment theory revealed that authoritative parenting is compatible with the accepting, sensitive, and cooperative parenting behaviors held up as attachment research. Authoritative parents resemble responsive attachment figures that pay special attention to the child's point of views and needs as well as use negotiation to push the child toward cooperation. They are leaders, not dictators (Bretherton et al., 1997). The attachment theory basic assumption is that effective parental behavior focuses basically on one criterion that is the attachment to the parent or other caregivers and psychological development in infancy.

Children who have authoritative parents tend to display self-confidence that their needs were met by the parent (Baumrind, 1991). They have the secure attachment with their primary caregivers because authoritative parenting is essentially supportive, responsive and warm (Doinita and Maria, 2015). On the opposite side, authoritarian parents have low self-esteem and show anxiety, aggression, and anger that is transmitted like psychological DNA to their children. Children who have permissive parents have low self-reliance and self-control (Baumrind, 1991). Permissive parents tend to withdraw their love from their children as a way of punishment. Both permissive and authoritarian parenting style are closely linked to insecurely attached children (resistant and avoidant). Because these parents are unable to self-regulate their emotional responses, they promote the more negative self-view in their children. Permissive and negligent parenting style is associated with fearfully attached and more avoidant children. The researchers have also indicated that there is a positive relationship between secure attachment style and authoritative parenting style (Karavasilis et.al., 2003).

It can be concluded that the study shows the importance of the parenting style on parental attachment for the child and adolescent development. The findings of the study will hopefully contribute to the studies in the field of child development and educational sciences.

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A Scale Assessing Social Academic Participation in Class for University Students

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Abstract

An instrumental study was carried out, with the purpose of developing a scale for assessing academic social participation (ASP) in class in university students, and testing its psychometric properties. Students from two national universities answered the ASP scale's items online, along with a scale assessing academic social self-efficacy. Exploratory factorial analysis was applied, obtaining a three dimensional scale (including academic help seeking -AHS-, work with peers -WP-, and autonomous contribution -AC-). All three dimensions were different but significantly correlated (p < .01; r ranging from .14 to .41), which allows to admit academic social participation as a unified construct. Internal consistency values for all three scales (AHS α = .83; WP α = .81; AC α = .91) and the complete scale (ASP α = .88) indicate a good reliability. Correlations between sub scales and academic social self-efficacy partially support construct validity. Further studies are recommended to provide additional support on this psychometric property. Also, more specific analyses are suggested to elucidate the studied behaviors' natures.

Keywords: academic social participation, academic social self-efficacy, assessment.

Introduction

Engagement in Education

For a long time, engagement has been an appealing concept for educational practitioners and researchers. Engagement is a relatively malleable variable, which predicts and prevents school dropout; and fosters positive outcomes for all students (Appleton, Christenson, & Furlong, 2008; Fredricks, Blumenfeld, & Paris, 2004). Moreover, engagement is especially useful as it can be modified by educational intervention.

Through different academic levels, engagement has been linked to academic performance and long term academic achievement (Appleton et al., 2008; Finn & Zimmer, 2012; Reschly & Christenson, 2012). Engagement contributes to those outcomes transcending the effect of strong influences such as family, cognitive, and socio demographic characteristics (Archambault, Pagani, & Fitzpatrick, 2012; Klem & Connell, 2004; Ladd & Dinella, 2009; Valiente, Lemery-Chalfant, Swanson, & Reiser, 2008). Engaged students tend to obtain better grades, perform better on tests, and persist in school (Skinner & Pitzer, 2012). Not only they feel satisfied with their achievement, but they also improve their skills (Skinner & Belmont, 1993).

Engagement can be defined as intensity and quality of students' involvement in initiating and carrying out learning activities. As it has been studied by different lines of research and under several theoretical viewpoints, not all researchers share the same conceptualization, but they all agree that engagement is a multidimensional construct (Appleton et al., 2008; Fredricks, Filsecker, & Lawson, 2016). Engagement can be seen as a compound of three major dimensions, including behavioral, cognitive and affective engagement (Fredricks et al., 2016; Jimerson, Campos, & Greif, 2003). More recently, Reeve and Tseng (Reeve, 2013; Reeve & Tseng, 2011) have proposed agentic engagement as a new dimension, comprising student behaviors oriented to express their educational needs and preferences, and promote improvements in their own learning environment and conditions.

Behavioral Engagement

Behavioral engagement is defined as participation, effort, attention, persistence, positive conduct, and the absence of disruptive behavior (Fredricks et al., 2016) and implies behaviors such as paying attention in class, coming prepared, asking and answering questions, and participating in class discussions (Finn, 1989; Fredricks, Blumenfeld, Friedel, & Paris, 2003; Fredricks et al., 2004). It is a broad dimension that has been consistently linked to academic motivation (Jang, Kim, & Reeve, 2012; Reeve & Lee, 2014), academic performance, behavior at school (Klem & Connell, 2004), improvements in child academic adjustment (Archambault et al., 2012), positive attitudes towards school (Ladd & Dinella, 2009), and skills development (Skinner & Belmont, 1993).

Engagement Measures

As engagement studies arise from several distinct theoretical traditions (Appleton et al., 2008), the works on measuring it are, indeed, diverse. It often happens that the same item is used by different researchers to assess different dimensions, and the same dimension is measured with items that differ considerably among studies (Fredricks et al., 2016; Jimerson et al., 2003).It also occurs that dimensions are defined in different ways according to the research line.

As it goes, it turns out pretty difficult to certainly determine which variables influence, and which are influenced by engagement dimensions, unless those dimensions have a clear definition in each study, specifying the behaviors or psychological events implied. Due to the aforementioned difficulties, Betts (2012) states that, as it is important to develop instruments to assess each engagement dimension, it is also recommendable to develop instruments to identify specific aspects of each general type, which could constitute components or sub dimensions of the general type.

Academic Social Participation

In line with this need for specific assessment instruments, the purpose of this study is to develop and validate an instrument to address academic social participation as one particular behavioral repertoire pertaining to behavioral engagement. Academic social participation has been defined as student behaviors involving social interaction with peers and teachers in class, with academic purposes (Sánchez-Rosas, Takaya, & Molinari, 2016). That is, social behavior meant to regulate their learning processes.

Those kinds of behaviors have been previously studied (Cater & Jones, 2014; Karabenick, 2003; Kember & Leung, 2009; Reeve, 2012; Yazzie-Mintz & McCormick, 2012), but at present there is a dearth of research dealing with them as a unified behavioral repertoire, allowing to understand their causes and implications. Such a lack of studies on this topic can be directly related to the absence of instruments assessing the construct.

Dimensions of Academic Social Participation

A literature revision on behavioral engagement allowed us to identify four possible constructs comprised in academic social participation: academic help seeking, work with peers, autonomous contribution, and critical thinking. As a result, an instrument was developed to assess these four proposed constructs.

Academic help seeking: "When students have trouble understanding text material, solving problems or completing assignments, they rely on several strategies to solve those situations on their own. If these efforts are ineffective, they may also turn to teachers, classmates, friends, or parents for assistance (Cater & Jones, 2014; Karabenick, 2003;

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Kember & Leung, 2009; Reeve, 2013, Yazzie-Mintz & McCormick, 2012). Academic help seeking is an important strategy for self-regulated learning. It involves, for instance, asking questions in class (Handelsman, Briggs, Sullivan, & Towler, 2005; Kong, Wong, & Lam, 2003; Krause & Coates, 2008), asking for examples (Reeve & Tseng, 2011), or asking a friend for help about a material that the student doesn't understand (Sánchez-Rosas & Pérez, 2015). Karabenick (2003) states that the relative unavailability of teachers in large classes makes it less likely they will be the targets of help-seeking requests, especially when compared to the ease with which students can approach each other for assistance. On the other hand, he acknowledges that student' perceptions of the relative anonymity of large classes as less threatening could also increase the likelihood they would seek help (Karabenick & Knapp, 1988; Shapiro, 1983), which also results when instructors explicitly notify students that they are available (Perrine, Lisle, & Tucker, 1995).

Work with peers: A substantial body of literature in engagement addresses peer relationships. Among that research, some major topics are peer group influence on student engagement (Cappella, Kim, Neal, & Jackson, 2013; Juvonen, Espinoza, & Knifsend, 2012; Kindermann, McCollam, & Gibson, 1996), consequences of peer rejection (Buhs & Ladd, 2001; Wentzel & Asher, 1995), and efficacy of work in pairs and in small groups to foster learning (Cater & Jones, 2014; Scoboria, Sirois, & Pascual-Leone, 2009). For this study, teacher assigned groups as well as spontaneous work with peers was considered. For example, discussing with a peer about an assigned task (Shapiro, 2004), seeking to learn with a partner rather than alone (Reeve, 2012), or helping other students to understand learning contents (Handelsman et al., 2005).

Autonomous contribution: This dimension comprises several behaviors of voluntary participation, such as making contributions in class (Reeve, 2012), raising a hand to answer a teacher's question (Shapiro, 2004), or participating in class when discussing a new topic (Kember & Leung, 2009). Autonomous contribution is about behaviors involving exchange with the class as a whole, which require the students' own initiative. Among engagement literature there is an important amount of research on this kind of behaviors, as they are an essential part of behavioral engagement. However, there is a lack of research specifically studying it as a form of class social interaction.

Critical thinking: This group of behaviors includes those involving expression of critical thinking about learning materials or contents during class. As autonomous contribution, they imply an exchange with the class as a whole. This kind of behaviors hasn't been so deeply addressed by previous research. Nevertheless, recent advances in engagement research are increasingly outlining their importance as a behavioral repertoire that allows students an active role in their learning. These behaviors include, for example, discussing different interpretations of things, expressing ideas that are not in accordance with those of other people, (Hipkins, 2012), or discussing questions that do not have one right answer (Yazzie-Mintz & McCormick, 2012).

Academic Social Self-Efficacy as an antecedent of Academic Social Participation.

Self-efficacy is a key element in research about human motivation. As a general construct, it is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives (Bandura, 1997, p. 3). Self-efficacy has an effect on people's actions, as they rather avoid those tasks and situations that seem to exceed their capabilities, while choosing and carrying out those in which they feel capable and confident (Bandura, 1986). Self-efficacy beliefs have an important role in the execution of competent social tasks (Medrano, 2008). Particularly, social self-efficacy is considered an important predictor of real social performance (Moe & Zeiss, 1982), which

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helps to identify individuals with low and high social skills (Caballo, 2000). At university, academic self-efficacy (confidence to do well in subjects) (Pintrich, Smith, Garcia, & McKeachie, 1993) predicts several academic behaviors that in turn foster students' performance.

Academic social self-efficacy has been stated as a specific dimension of academic self-efficacy (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993). This dimension refers to students' confidence about using interpersonal skills to perform adequately in academics, such as asking questions and speaking out in public (Medrano, 2011; Medrano, Sánchez-Rosas, & Olaz, 2007; Moe & Zeiss, 1982; Sánchez-Rosas, 2013). A previous study (Takaya, 2014), proved academic social self-efficacy to have an indirect, positive and significant predictive capacity (p < .01, r = .18) on academic social participation.

For this reason, self-efficacy for academic social abilities has been considered an adequate indicator in view of assessing construct validity for the academic social participation scale in this study. According to the previously reviewed theoretical guides, we expected to find positive correlations between academic social participation and academic social self-efficacy.

Methods

Design

An instrumental study with quantitative methodology was carried out (Montero & León, 2002). A literature review and a focus group served as a foundation to develop the categories to be used in the instrument development, which was afterwards assessed through quantitative methodologies.

Participants

This study was carried out with a self-selected sample, as participants decided by themselves to participate (Sterba & Foster, 2008). The sample comprised a group of university students (N = 503, 85% female) from 19 academic units in two national universities, most of them majoring in psychology (36%), with an average of 23 years old (SD = 5.92). They were invited to participate via social networks, and consented to it after being informed about the research objectives and the anonymity of their answers.

Instruments

Academic Social Participation. A new scale was applied, comprising six items for each measured construct, including academic help seeking (AHS; e.g. "*I ask questions when there is a topic I don't understand*"), work with peers (WP; e.g. "*I work on class activities with other classmates*"), autonomous contribution (AC; e.g. "*I participate in class discussions*"), and critical thinking (CT; e.g. "*When my viewpoint differs from that of a mate, I express my opinion*"). The 24 mixed items were presented in four sections of six items each. The participants answered to the instrument through a Likert scale with the following values: 1 = *Very Rarely*, 2 = *Rarely*, 3 = *Occasionally*, 4 = *Frequently*, 5 = *Very Frequently*. Psychometric properties of this scale will be presented with detail in the results section.

Academic Social Self-Efficacy. (Olaz, 2006). This instrument assesses student's confidence about carrying out social behaviors at university, and comprises seven items, from which six items have been selected for use in this study. The items are answered through a Likert scale, expressing the respondent's degree of confidence to carry out each behavior. The Likert scale ranges from 1 (*I can't do it*) to 10 (*I'm totally sure I can do it*). The original

instrument has shown appropriate internal consistency (α =.84), and its application for this study obtained optimal internal consistency (α = .91).

Procedure

Literature review: A search was conducted through several databases (such as JSTOR, SAGE, ScienceDirect, Springer, and Wiley), looking for papers on engagement, behavioral engagement, and social behavior in academic environment. Seventy peer reviewed studies were included, considering theoretical, instrumental and empirical work since 1985 to 2016. Conceptual and operational definitions for engagement and behavioural engagement were considered. A preliminary list of behaviours was established, including those with the following characteristics:

a) Verbal interaction is involved.

b) Teachers and/or classmates are involved.

c) They occur during class.

The selected behaviors were organized to delimit dimensions following several criteria:

a) People involved in each behavior.

b) Class situation in which it occurs.

c) The purpose of that behavior.

d) Skills required to complete that behavior.

e) Existence of previous theoretical or instrumental studies about these groups of behaviors.

Four dimensions were proposed for academic social participation, as they were mentioned previously: academic help seeking, work with peers, autonomous contribution, and critical thinking.

Focal group: Nine university students participated in a focal group, answering questions about their own behaviors in class. The purpose for this group was to examine which behaviors relative to the proposed dimensions were habitual in the viewpoint of students themselves. They were explained the objectives of this study (*"we want to know your opinion about behaviors you or your mates do in class, in which you interact with classmates and teachers, and that help in your learning")*, were asked to answer in turns, and informed about the confidentiality of their answers. A brief description of academic social participation and each of the four dimensions was given to the group. The students were asked questions individually (e. g.: "*Can you tell me what behaviours do you or your classmates have when orally participating in class?*"). At the end of the interview, each member was given opportunity to add any opinions, comments or additional information.

Scale administration: A protocol was elaborated, containing 24 items, six items in each proposed dimension. A pilot test was carried out with 19 students. According to the pilot test results, the 24 items were kept, and they were mixed and divided into four sections for the principal study. The final protocol was administered to students through an online survey system, in which they were asked general information (age, gender, major, academic year) before answering the four separate sections of the scale.

Data Analysis

Data was managed through statistical software SPSS (IBM, 2013) and Factor (Lorenzo-Seva & Ferrando, 2013). Preliminary tests were carried out to identify data about

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age, gender, average scores, and standard deviation for the items in the general participation scale, its four sub scales, and the self-efficacy scale. Asymmetry and kurtosis were examined, and Kolmogorov-Smirnov test was run to know the distribution for the items. Asymmetry values between +1.5 and -1.5 were considered acceptable (Forero, Maydeu-Olivares, & Gallardo-Pujol, 2009). Multicollinearity between items was examined by bivariate Pearson correlations, setting r < .90 values as adequate.

Exploratory factorial analysis was carried out to assess the scale's internal structure. As the participation items had shown a non-normal distribution, the non-weighted least squares method was used (Lloret-Segura, Ferreres-Traver, Hernández-Baeza, & Tomás-Marco, 2014). Oblique rotation (promax) was chosen, as the underlying factors were expected to be interrelated. Several criteria were taken into consideration when deciding the number of factors to keep: (a) Kaiser's rule of eigenvalues-greater-than-one (Kaiser, 1960), (b) the screen test (Cattell, 1966), (c) parallel analysis (Horn, 1965), (d) factorial structure should explain at least 50% of variance (accumulated variance for factors extracted altogether) (Merenda, 1997), and (e) interpretation of the rotated factors.

After running factorial analysis, the following criteria were considered for eliminating items: (a) items loading in two or more factors, (b) factorial loads lesser than .40, (c) high factorial loads in factors other than the one relative to the item's sub scale (d) eliminating the item increases or does not decrease internal consistency (Cronbach's alpha) for its sub scale. Additionally, the data were examined and interpreted according both to theory, and nature of the behaviors involved. A new factorial analysis was run on the resultant group of items, so as to verify its internal structure.

Internal consistency for the participation scale, its sub scales, and the self-efficacy scale, was assessed by calculating Cronbach's alphas, considering these values: .70 acceptable, .80 good, and .90 excellent (George & Mallery, 2007). Bivariate correlations (Pearson's r) between the whole participation scale, sub scales, and the self-efficacy scale were calculated in order to evaluate construct validity. The correlations were expected to have, at least, moderate, positive and significant values.

Results

There was no multicollinearity between the items. Kurtosis and asymmetry analysis yielded satisfactory results, but Kolmogorov-Smirnov test showed data didn't fit a normal distribution. A first exploratory factorial analysis suggested a structure of three related factors. This structure merged in a first factor those items proposed for autonomous contribution and critical thinking. A second factor reunited the items proposed for work with peers, and a third factor comprised those proposed for academic help seeking.

Nevertheless, five items were eliminated following the previous mentioned criteria for item retention. Two of these were items proposed as indicators of academic help seeking (*"I ask questions when I don't understand a topic" and "I ask questions when I don't understand what is being explained"*) and had high factor loads in the first factor (> .60), so they were associated with behaviors of autonomous contribution and critical thinking. One item proposed as indicator of critical thinking was eliminated (*"I give my personal opinion on a topic"*), as it had factorial loads in the first and second factor.

After this, the first factor was a compound of eleven elements, while second and third factors had six and four elements respectively. With the purpose of obtaining three sub scales with a more similar quantity of elements, two items in the first factor were eliminated (*"I give*

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my opinion when it differs from that of the teacher" and *"I give my opinion when we discuss different solutions for a problem").* These items were selected as they had relatively lower factorial loads and their elimination didn't decrease internal consistency of their sub scale and the whole scale.

Thus, in the resultant scale, the autonomous contribution sub scale comprises nine elements, including items firstly proposed as indicators for autonomous contribution and critical thinking. It seemed right to keep this arrangement, as all of these items involve contributions in class. The academic help seeking sub scale comprised the four items retained in the third factor, and the work with peers sub scale comprised the six items included in the second factor. A new exploratory factorial analysis for this scale, verified a stable three factor structure, explaining 52% of variance, with good factor loads and no items loading in more than one factor. Table 1 presents the obtained sub scales and factorial loads for this final version.

	Factor		
	1	2	3
AHS3			
AHS4			.856
AHS5			.686
AHS6			.491
WP1			.829
WP2		.723	
WP3		.529	
WP4		.630	
WP5		.601	
WP6		.779	
AC1	.823		
AC2	.767		
AC3	.787		
AC4	.696		
AC5	.724		
AC6	.835		
CT1	.606		
CT2	.717		
CT4	.617		

Note: The items names correspond to their previous position in the proposed four dimension scale (AHS, academic help seeking; WP, work with peers; AC, autonomous contribution; CT, critical thinking).

Cronbach's alphas were calculated to assess the scale's internal consistency, obtaining good to excellent results. Table 2 shows these results.

Table 2. *Internal consistency for the Academic Social Participation Scale and its sub scales.*

	AHS	AC	WP	ASP
Cronbach's α	.83	.91	.81	.88

Note: AHS, academic help seeking; WP, work with peers; AC, autonomous contribution; ASP, academic social participation.

The academic help seeking sub scale showed significant and moderate correlations with both the autonomous contribution and the work with peers sub scales. Meanwhile, autonomous contribution had a significant but weak correlation with the work with peers sub scale. Correlations between the sub scales and social academic self-efficacy were not uniform. Academic help seeking and autonomous contribution had significant positive correlations

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with social academic self-efficacy, while the latter had no significant correlation with the work with peers sub scale. All three sub scales had strong positive correlations with total scores in academic social participation. In turn, the whole scale scores in academic social participation presented a moderate to high significant correlation with academic social self-efficacy. Table 3 presents these results.

Table 3. *Correlations between the Academic Social Participation Scale, its sub scales, and academic social self-efficacy.*

Group	AC	WP	ASP	ASSE
AHS	.41***	.41***	.73***	.35***
AC		.14**	.83***	.65***
WP			.62***	.05
ASP				.55***

Note: p value; *** p <.001, ** p < .01. AHS, academic help seeking; WP, work with peers; AC, autonomous contribution; ASP, academic social participation, ASSE, academic social self-efficacy.

Discussion

Research on engagement has made great advances documenting engagement's importance in learning processes (Green et al., 2012; Johnson & Sinatra, 2013; Skinner & Belmont, 1993). Engagement relationships with other major variables have been examined, such as teacher-student interaction (Archambault et al., 2012; Federici & Skaalvick, 2014; Gasiewski, Eagan, Garcia, Hurtado, & Chang, 2012), teacher's goals (Huges, Wu, & West, 2011), class size (Dominino, Castellaro & Roselli, 2011), motivation (Jang et al., 2012), performance, social adjustment, school persistence and long term academic development (Archambault et al., 2012; Klem & Connell, 2004; Ladd & Dinella, 2009; Valiente et al., 2008). This research opened a field of possibilities for intervention to attain better educational outcomes by enhancing engagement. However, the engagement concept, and particularly its multiple dimensions still lack clearer definitions, which becomes apparent when looking through assessment instruments.

This study's purpose was to contribute to clearly defined engagement measurement by developing an instrument assessing a specific behavioral repertoire within behavioral engagement.

A literature review and a focal group helped to delineate a set of indicators for four behavioral domains (i. e. autonomous contribution, critical thinking, work with peers, and academic help seeking) for which 24 items were drafted. After administering this scale to a group of 503 university students, preliminary tests showed that the items distribution had a non-normal pattern. This is in itself an interesting finding and asks for further analysis about the meaning students assign to these behaviors.

An exploratory factorial analysis suggested a discrimination of items in three separate factors. Broadly speaking, one factor comprises behaviors related to working with peers, another factor relates to academic help seeking, and a third one includes both behaviors proposed as autonomous contribution and critical thinking indicators. An interpretation of this result could be that both dimensions proposed as autonomous contribution and critical thinking involve behaviors of "raising hands" and "speaking in front of the whole class", while those behaviors proposed as work with peers and academic help seeking do not respond to that description. As a result, the first two were included in the same sub scale, called autonomous contribution, as what held similarity between them was openly contribution in front of the class.

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In fact, while selecting which items were to be retained, two items proposed by the research team as indicators for academic help seeking were eliminated, as they had high factorial loads in the same factor as autonomous contribution. These items were, within those proposed for academic help seeking, the closer ones to the description of speaking to the whole class.

The items proposed for work with peers included both spontaneous behavior of looking for a partner to work or discuss themes with, and behaviors subsequent to teacher assigned group work. All of them had consistent factorial loads in the same factor and showed similar distributions.

After selecting the final set of items, the resultant academic social participation scale comprised a total of 19 items, including six items in the work with peers sub scale, four items in the academic help seeking sub scale, and nine items for the autonomous contribution sub scale. Consistency analysis on this scale showed good to optimal results, and all the sub scales had significant positive correlations among them, which supports the idea that the whole participation scale was measuring the same construct. Nevertheless, work with peers sub scale's correlation with autonomous contribution, if significant, was lower than the other two correlations.

Additionally, criterion validity was tested by correlating the participation whole scale and its sub scales to a measure of academic social self-efficacy. As this variable is supposed to foster the students' use of social skills to perform adequately at academics (Medrano, 2011; Medrano et al., 2007; Moe & Zeiss, 1982; Sánchez-Rosas, 2016; Sánchez-Rosas & Pérez, 2015), it was expected to have a positive correlation with academic social participation. Results partially support this hypothesis, as autonomous contribution and academic help seeking showed significant positive correlations with academic social self-efficacy, while work with peers had no significant correlation.

A review on the academic social self-efficacy items shows they are primarily related to social skills linked to openly speaking in public, expressing opinions and asking questions, which are mainly related to autonomous contribution and help seeking, but have weaker connection with working with peers. To overcome this difficulty, further studies are recommended, including criterion variables more closely related with the whole content of indicators comprised in the academic social participation scale.

Limitations and Further Research

A scale measuring academic social participation has been obtained, showing a consistent factorial structure. Partial validity support has been found for this scale and its sub scales.

Correlations between factors support the idea that academic social participation may be considered as one complete construct including the dimensions of autonomous contributions, work with peers, and academic help seeking.

Some limitations to this study are the preponderance of women among the participants, and the fact that criterion validity was tested with only one variable obtaining partial results. For these reasons, further studies are required with a more gender balanced sample, and also with tests oriented to support criterion validity. Also, it is important to find out the relations between this construct and other forms of engagement. After amplifying our knowledge in this area, it should be possible to find out links between academic social participation and other antecedent and consequent variables.

The development and measurement of this construct contributes to more detailed studies on behavioral engagement, increasing possibilities for comprehension and intervention in the educational field.

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A Pattern of Transition to Adulthood Indicated in Plans for the Future of Males with Intellectual Disabilities: Secondary Qualitative Data Analysis

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Abstract

The paper examines the category of transition to adulthood of males with intellectual disabilities. It involved secondary analysis of qualitative data from three earlier research projects (Bsdurek 2010, Ćwirynkało 2010, Łysoniek 2014), whose participants were male students of special vocational schools for students with mild intellectual disabilities (MID) (IQ 70-55). The secondary analysis involves overall forty-six in-depth qualitative interviews conducted in Poland. The main research question of the secondary analysis is as follows: What is the pattern of transition to adulthood of the 46 males aged 18-21 with intellectual disabilities? Within the research question, three sub-problems established as detailed research questions were also investigated: What are the components of transition patterns to adulthood? What are the factors facilitating and hindering the process of transition? The results indicate that the main aim of transition to adulthood in the pattern of transition, which was generated from 46 interviews of young Polish males with mild intellectual disabilities, was autonomy. There are several internal components of transition to adulthood: health conditions, self-awareness including skills and limitations, competences, awareness of future educational, work and accommodation tracks etc. The results also show external components of the transition pattern to adulthood. Among them there are ties and social circles and the system of education and access to the labor market. The research results also indicated a variety of factors that facilitated and hindered transition to adulthood of 46 Polish males with mild intellectual disabilities.

Keywords : Transition to adulthood, masculinity, intellectual disability, secondary qualitative data analysis

Introduction

The goal for young people, including those with disabilities, as they leave high or vocational school, is that they will continue education (go to post-secondary school or university), find employment (preferably in the open market), and lead the life that would as independent as possible. A smooth and successful process of transition to adulthood requires both individual resources and support from family and community (Hoover 2016). Although the importance of such transition is emphasized in literature, there is still little research available on the process, particularly with a focus on intellectual disability and gender. The main purpose of the current report is to illustrate the results of secondary qualitative data analysis developed from 3 datasets and a total of 46 transcripts of interviews with 46 Polish males aged 18-21, with mild intellectual disabilities. The main and detailed research questions of the secondary data analysis were formulated as follows:

- What is the pattern of transition to adulthood of the 46 males aged 18-21 with intellectual disabilities?

- What are the components of transition pattern to adulthood?

- What are the factors facilitating and hindering the process of transition?

Review of Literature

Transition to adulthood is a very important and crucial task for young people. This term is described as moving from dependent childhood to the independent and autonomous life of an adult person. In particular, it means moving from parents' home and living independently in the community, changing schools, vocational training or gaining employment, establishing new intimate relationships (Foley et al. 2012; Michaels, Lopez

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2006). Transition to adulthood is more complicated in case of people with disability, especially intellectual disability. The process of transition is characterized by longer duration, wider scope, and attenuated experiences, which are due to personal limitations: lower cognitive and communication skills, and physical, emotional or social (dis)abilities.

The problem of transition of young people with a disability to adulthood has been studied from at least three perspectives, which include:

- parents' perspective (Broka 2015, McIntyne et al. 2004, Biggs, Carter 2016, Dyke et al. 2013, Lindstrom et al. 2007, Foley, Jacoby et al. 2012, Tarleton, Ward 2005, Davies, Beamishi 2009). This is a crucial perspective because parents are usually the first and main supporters in the transition to adulthood. Parental involvement in the transition process is seen as a predictor for a successful transition (Foley, Dyke et al. 2012);
- environmental perspective, e.g.: the one of school staff, supporters, and education professionals (Broka 2015, Lindstrom et al. 2007, Tarleton, Ward 2005, Haehne, Beyer 2009);
- young adults' perspective (Lindstrom et al. 2007, Tarleton, Ward 2005, Borowska-Beszta 2013).

The research on the transition patterns to adulthood is often focused on factors which affect this process. The factors can act either as barriers or facilitators, some of them refer to personal features and others to environmental structure. It is also worth noting that some studies that described the process of transition to adulthood of people with intellectual disabilities used ICF (International Classification of Functioning) as methodology framework. It contains: body functions and structures, activity, participation, environmental and personal features (Foley, Dyke et al. 2012, Dyke 2013).

The results of the research focused on the transition suggest that facilitators of the process include: self-determination, self-advocacy during transition, active engagement (Lam 2016, Palmer 2010, Kim, Turnbull 2004, Foley, Dyke et al. 2012), self-awareness (Kim, Turnbull 2004), social support which decreases anxiety, stress and increases resilience (Forte, Johda, Dagnan 2011, (van Heumen, Schippers 2016)), effective coping strategies, goal setting and planning process of transition (Foley, Dyke et al. 2012, van Heumen, Schippers 2016), interpersonal and social skills (Foley, Dyke et al. 2012).

On the other hand, as the results of the studies indicate, there are also some barriers in the transition to adulthood that people with disabilities encounter, e.g.: lack of knowledge and poor cooperation among parents, young people with intellectual disability and supporters (Hitchings et al. 2001), discrimination (Janus 2009), being dependent, lack of post-school options (Davies, Beamish 2009), unawareness of their own disability (Hitchings et al. 2001), and parents' low expectations about the future of their children with disabilities (Chambers, Hughes, Carter 2004).

Traditional outcomes of transition to adulthood of people with intellectual disabilities contain employment, independent life, moving from family home, and making partnership. For example, a research project of Kaehne and Beyer (2009) shows that preparing young people for life after education and employment is perceived as the main aim of the transition by supporters and education professionals. Nowadays, this research field focuses also on high quality of life as the main outcome of transition (Scott et al. 2014; McIntyne et al. 2004; Biggs, Carter 2016; Foley, Dyke et al. 2012). From mothers' perspective This quality of life of young adults with intellectual disabilities – according to their mothers – includes such

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components as: recreation, hobbies, activities, and belonging to a social network (McIntyne et al. 2004). Unfortunately, as Biggs' and Carter's (2016) quantitative research (n=389) shows, a relatively high percentage of parents of people with intellectual disabilities indicated that their children never or rarely spent time and had fun with or received help from their friends.

Secondary Qualitative Data Analysis Design

Theoretical Assumptions

The secondary data analysis performed in social sciences has scientific evidence and contribution in works of such scientists as Glaser & Strauss (1963), Corti Foster & Thompson (1995), Long-Sutehall, Sque & Addington-Hall (2010), Irvin & Winterton (2011), Johnston (2014) et al. According to Irvin and Winterton (2011) 'secondary analysis is an established practice within quantitative research and there is a drive towards extending qualitative data re-use and analysis' (Irwin & Winterton, 2011, p. 3). Johnston (2014) provides an interesting synthesis and claims that secondary data analysis is type of analytical procedure performed on the data collected by someone else, having another primary research goal and assumptions. The author continues that secondary analysis can also became an empirical and methodological exercise (Johnston, 2014, Doolan & Froelicher 2009). Glaser & Straus (1963) depicted interesting key features of secondary data analysis pointing out to the possibility of lending new 'strength to the body of fundamental social knowledge' (see Long-Sutehall, Sque & Addington-Hall 2010, p. 336). Additionally, Johnston (2014), referring to Doolan & Froelicher (2009), states that secondary data analysis can be performed in various ways and as an analytical technique is perceived as a flexible approach.

There are various research reasons for applying secondary data analysis. According to Long-Sutehall, Sque, Addington-Hall (2010), Hinds et al., (1997), such a type of analysis emphasizes particular moments and phenomena as exploring issues distinct from the ones that were undertaken in primary research. Moreover, the authors mention that secondary analysis is appropriate if researchers want to lead continuous analysis of the primary dataset or such an analysis that will highlight details of subset of primary dataset. Heaton (1998) gives another cause to apply secondary data analysis which is searching a new perspective, different from the one in primary analysis. Corti, Foster and Thompson (1995) mention that secondary data analysis is useful when researchers' intention is to describe phenomena of current and historical attributes, behavior or societies and organizations as well. Johnston (2014) refers to Corti & Thompson (1998) which allows her to state that secondary data analysis can become a case material used for the purpose of teaching methodological issues. Interesting reason for performing secondary data analysis is mentioned by (Boslaugh, 2007) who writes about time as an analytical category related to historical aspects and time being analyzed while using older data of primary research for secondary data analysis. The author writes that the raw material 'may be several years old before it is released and available for use by others' (Boslaugh, 2007, in: Johnston 2014, p. 623).

Steps in Secondary Data Analysis

Johnston (2014), referring to Stewart & Kamins (1993), describes the entire process and steps in qualitative secondary data analysis in the following way: development of research questions, identifying the proper dataset, and evaluating the dataset. Generally, the steps of secondary data analysis described in the synthesis by Stewart & Kamins (1993), Johnston (2014), include addressing the evaluation of primary dataset and such issues as:

- The name of an author who collected primary data
- The description of the type and details of data that was actually collected with the research goals and questions of primary research

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- The time when the data was gathered, i.e. the year of primary data collection
- Methodology that was employed in obtaining the data
- Management of the primary data, which is a brief description related e.g. to access to raw data, transcripts, protocols which will be analyzed in secondary data analytical procedures
- The discussion and description of general consistency obtained from various sources (Stewart & Kamins 1993, Johnston 2014, p. 622).

Method

This paper draws on data from three earlier Polish qualitative or mixed method research projects that have been undertaken in the years 2010-2014. Each of them examined the concepts of lives of special secondary school students with intellectual disabilities, including male students with mild intellectual disabilities who attend vocational schools and are at the age of 18-21, which means that at the moment of data collecting they were able to describe their process, plans and ambitions connected with their transition to adulthood. The three primary research projects are described below. The qualitative secondary data analysis was based on transcribed qualitative primary data from interviews with male Polish informants with mild intellectual disabilities. The research and verbal data collection were performed by Ćwirynkało (2010) as 30 interviews, Bsdurek (2010) as 6 interviews, Łysoniek (2014) as 10 interviews. Totally, the research project team analyzed transcripts from 46 interviews with 46 males with mild intellectual disabilities aged 18-21.

Dataset Evaluation Process

Each dataset (1, 2, 3) chosen to secondary data analysis include interview transcripts, which were anonymized, transcribed and encoded. The transcribed data was designed by primary research authors from direct interviews with male participants with mild intellectual disabilities. The researchers of secondary data analysis had no access to the audio recordings of the interviews but full access to 46 transcripts.

Primary Research Project: Dataset 1

A mixed method of quantitative-qualitative research of students with intellectual disabilities, their parents and teachers was undertaken in 2010 by Ćwirynkało (2010) whose aim was to describe the social functioning of special school students with mild intellectual disabilities in the context of their autonomy and plans from three perspectives: students', parents' and teachers'. As for the first perspective (students'), a total of 180 children and youth (90 males and 90 females) took part in the research, of whom 60 attended the three upper grades of primary school, 60 – junior high school and 60 – vocational school. The author combined quantitative and qualitative methods meant as a sequence approach (Creswell 2013, Miles, Huberman 2000). Out of all the data analyzed in the primary research, in the current study we took into account the qualitative interviews with purposive sample of 30 male vocational school students with mild intellectual disabilities age of 18-21.

Primary Research Project: Dataset 2

A study on aspirations of young people with mild intellectual disabilities that used a qualitative approach to provide the participants' views on their future and plans by Bsdurek (2010) was undertaken in 2010 and supervised by Ćwirynkało. The aim of the BA research was to find out what sort of aspirations young students with mild intellectual disabilities have as far as their further education, professional career, living conditions and family life are concerned. A purposive sample consisted of 10 students of special vocational students aged

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19-21, of whom 6 were males and 4 females. Only the interviews with 6 male participants were analyzed in the present study.

Primary Research Project: Dataset 3

The aim of the research project conducted by Łysoniek (2014) in 2014 and supervised by Borowska-Beszta, was to find out what life plans have males with mild intellectual disabilities (IQ 55-70). The author interviewed purposive sample of 10 male students of a special vocational school in Kuyavian-Pomeranian voivodeship in Poland. The main research question was: What are the life plans of 10 males with mild intellectual disabilities, students of a special vocational school? The author used an ethnographic strategy by Spradley (1979), Borowska-Beszta (2005), Angrosino (2010), Flick (2010), Gibbs (2011), Jamielniak (2012). The participating students were in their early adulthood (18-21 years of age).

Ethics of Data Collection: Primary Dataset

In case of each of the above mentioned research described (Bsdurek 2010, Ćwirynkało 2010, Łysoniek 2014), the participants were informed about the aim of the research and completed a written form of consent to take part in the research (individual, anonymous, gratuitous interview), to record, transcribe the interviews, code and store the data and, finally, use it in the theses. In the first two studies (Bsdurek 2010, Ćwirynkało 2010) the authors used the written consent forms of their own construction, in the latter one the form proposed by Rapley (2010) was used.

Secondary Data Analysis

Steps

The following steps were undertaken in the current study:

- Establishing access to the raw data

- Sorting the primary 3 datasets and 46 transcripts and extracting appropriate transcripts to carry out secondary analysis on the pattern of transition to adulthood of males with intellectual disabilities who were 18-21 years of age.

- The rejection of transcriptions that are not related to the needs of secondary research analysis. We rejected 4 transcripts of interviews with females from the study by Bsdurek (2010).

- The analysis of data from 46 transcriptions and generating the categories corresponding to the secondary research questions.

- Answering three research questions posed in the draft of secondary qualitative data analysis

- Discussion and final conclusions

Sorting the Data

Table 1. *The Final Dataset for Secondary Data Analysis*

Dataset	Primary interviews with males with mild intellectual disabilities
Dataset 1: Ćwirynkało (2010)	30
Dataset 2: Bsdurek (2010)	6
Dataset 3: Łysoniek (2014)	10

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Total:	Three Datasets	46

Source: Inspired by Long-Sutehall, T., Sque, M., Addington-Hall, J., (2010). Secondary analysis of qualitative data: a valuable method for exploring sensitive issues with an elusive population? *Journal of Research in Nursing* 16(4) 335–344

Coding and Categorization Analysis

The analysis was performed using coding and categorization proposed by Saldaña, (2009), Flick (2010), Kvale (2010), Gibbs (2011). The total amount of analyzed raw data and transcripts with males with mild intellectual disabilities was 46. The researchers generated 4 categories related to the research questions: transitions pattern called *autonomy*, transition pattern components (*internal* and *external*), factors facilitating the transition (*internal* and *external*) and factors hindering the transition (*internal* and *external*). The steps of the analysis involved:

- Coding of words generated from verbatim data of 46 transcriptions from 3 datasets

- Categorization as a process grouping generated codes from verbatim data into broader textual categories

- Constant comparison of categories and examination of their relations to the main and detailed research questions

- Categorization as segmentation the verbatim data from transcripts of 3 datasets according to research questions

- Presenting the results in diagram, tables and texts (Kvale, 2010, Ćwirynkało, Borowska-Beszta & Bartnikowska 2016).

Results

The diagram 1 presented below shows the answer to the main research question. We searched for the main transition pattern of 46 males a with mild intellectual disabilities, aged 18-21 and living in Poland. The research results indicated that the main aim in the transition pattern of the purposive sample of males, generated after secondary data analysis, was *quest for autonomy*.

As indicated in the diagram 1., the participants of the three studies had both short-term and long-term goals in their lives. For all of them the main short-term objective was graduation from school. It was perceived as a crucial phase of the process of transition to adulthood and in many cases also as a necessary condition to fulfill adult roles (in the area of employment and starting their own families) that would give a sense of autonomy. The chances to accomplish this task and become an autonomous person are dependent, according to the interviewees on several internal and external factors that can either facilitate or hinder the process. They are described below as categories 2, 3, and 4.

Category 1: Transition Pattern: Autonomy (diagram 1.)

Transition pattern: QUEST for AUTONOMY

Source: Own research
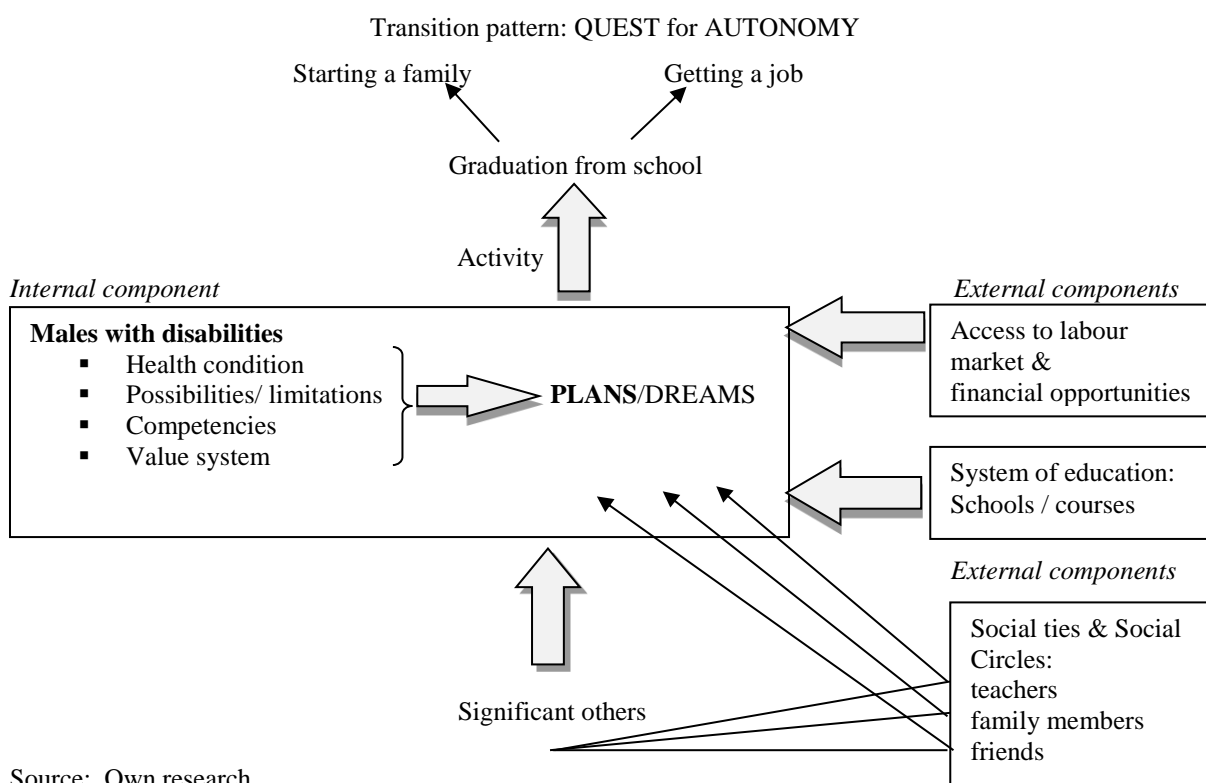
Category 2: Transition Pattern Components

Factors that affect the transition of young males with intellectual disabilities into adulthood can be divided into two main categories: internal (connected with personal characteristics of a person with a disability) and external (independent of the person).

The internal components include:

- health condition (physical, intellectual, other). Sebastian: *I had an accident. A car hit me at the crossing (...) I was rehabilitated at home* – the accident modifies certain plans or the forms of self-realization.

- self-awareness concerning:
  - themselves (being aware of their own possibilities and limitations). Philip: *I don't speak well* (the answer to the question about barriers in fulfilling the plans); Stan: *There are sometimes such difficulties that I can't get by* (assessing the interviewee's independence). The awareness of possibilities is also noticing the features that enhance job opportunities, e.g. Jonas describes himself as 'intelligent, nice, helpful'.
  - competences essential to work performance. Albert: *I never give up, always move forward;* Sebastian: [I want to] *have skills so that I do my job well.*
  - possibilities to continue education and work in certain areas in a place of living. Peter (asked about the best jobs): *Well, this must be a professional fitter or a carpenter (...), cause it's easy to get a job;* Albert: *I was thinking of another course – I wanted to be a carpenter. But the school didn't have it – there were too few people* [candidates]. *(...) fitter, indoor painter, wallpaper*

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fitter are the best ever jobs (...) and well-paid; Jonas: *I'll work for my grandpa. And if not, then I'll look for something.*

- -their value system, in which graduating from school, gaining professional qualifications and getting a job plays a key role. Greg: *I want to graduate from school (...) to have these qualifications. Maybe I'll enroll again to have new qualifications;* Stan (when asked about dreams): *To have a job I'm trained for;* Peter: *To finish the school finally;* Jeremiah: *I want to finish [school] and I'm thinking of starting a new course.*
- possibilities to engage into new roles that are considered typical of adults (professional roles – being a worker, family roles of a husband, father). Jeremiah: *I help sometimes – when there's a renovation at neighbors' or something;* Philip: *I help my mum, feed the chicken, clear up or work in the field;* Pete: *Well, I work temporarily (...) At neighbor's (...) I drive a tractor, prepare food for farm animals.*
-

These factors may either enhance or weaken the motivation and activities connected with the process of transition to adulthood and establishment of a professional career.

The external components consist of:

▪ Social ties and social circles (family, teachers, friends – among them the key role play the significant others – people that the interviewees trust or act as their role models). Their role seems to be essential since they can affect the respondents' value system and stimulate the appearance of the above mentioned internal factors concerning objective state of health and subjective awareness of their own possibilities. Unfortunately, a lot of the informants claim that they have not got anyone close. When asked about someone significant, someone they can rely on, they usually answered shortly, using no more than a few words only, e.g. Greg: *There's my sister;* Albert: *A classmate;* Jonas: *My grandpa;* Mark: *Two teachers.*

▪ Polish system of education, access to labor market and financial opportunities (connected with education – school and the possibilities to continue education in order to develop professional qualifications, possibilities connected with getting a job – potential workplaces in a place of living – or – as some interviewees notice – connected with moving out to find employment). Peter: *Maybe I'll go to Belgium (...) My friend goes there;* Arthur: [I can find a job] *there where I studied, in R. or, if not, there where my uncle works, they make warm water there.*

Category 3: Factors Facilitating Transition

The interviews allowed us to distinguish several factors that facilitate the transition from youth to adulthood. Among them there are:

▪ Abilities and skills (physical, intellectual, communication, and language);

▪ Earlier family and professional experience (e.g. voluntary work, temporary employment, usually during holidays, engagement with household chores and carrying out renovations – both in the interviewees' own homes and at neighbors') which can act as an inspiration to do a course at a vocational school and be an informal professional training practice both in a specific branch and at work in general;

▪ Plans and ambitions that are in accordance with the opportunities in local communities – such plans were illustrated by Stan, one of vocational school students: *Well, it's cool to be a carpenter. You can learn a great deal. I love doing it!;*

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- Having a passion that enhances internal motivation – this is visible, to give an example, in case of Greg who wants to be a confectioner and has dreamt of becoming one since his childhood, Jonathan whose grandfather was a plumber and who dreams of doing *the job just like him* or David who studies hard to be a good chef and really cares about *good grades and opinion at school*;
- The system of values – two values seem to be crucial in the transition to adulthood: work and family. As for the first one, the interviewees often perceive the profession and employment as an important (for some – the most important) part of adult life. On the other hand, there are also participants who declare that the most important values for them are love and family happiness. What is also characteristic, however, is the fact that the appreciation of family values is complemented by the awareness of the need to be able to support the family. When asked why they want to work in the future, one of the interviewees, Edward, answered, *To breed my family, of course*;
- Role models that strengthen the males' motivation. To give an example, for Jonathan this is his grandfather – a plumber, and the model is closely related to the realization of Jonathan's professional aspirations. In other cases these can be parents (especially fathers) or other family members, teachers or – as Keith and Albert claim – people (e.g. classmates, schoolmates) with disabilities that are perceived as models that are not so difficult to follow;
- More or less carefully planned strategies of looking for a job after finishing school. Some respondents are planning to look for a job actively, for example Xavier: *Hmmm ... I thought it'd be good to come around and find some groceries or restaurants'*, others, like Stanley, have not made concrete plans yet: *'I'm not sure. Maybe I'll go to the USA – my uncle lives there and I could work somewhere there*;
- Imagining oneself in the role of a husband and/or father and perceiving the roles as demanding. In the three studies (Bsdurek 2010, Ćwirynkało 2010, Łysoniek 2014) there were no participants who would claim that they would never want to get married. Some interviewees simply allowed possibility of getting married and having children, others declared a desire to fulfill the roles. In both groups the participants often mentioned that to be a (good) husband or father one needs to get engaged into some activities, for example *help your wife* (Jeremiah), *take care of others* (Jonathan), *look after kids, play with them' or have a job* (Mark) *I'm not sure [about getting married] ... Maybe when I find a job – then I'd like to have a wife* (Edward);
- Self-awareness, being aware of having such features, like diligence, independence, quietude, reliability. It is difficult to assess whether the qualities were the actual characteristics of the interviewees, but the declarations might indicate that they knew which qualities were socially valued among adults and believed that they were expected to be characterized by such qualities;
- Striving for independence, which is clearly visible among all the interviewees in the studies, is usually expressed as a desire to move away from the family home, setting up and supporting the respondents' own families. The following statements illustrate the desire: *I don't want to move out, but when I have my own family, I'll support it on my own* (Jeremiah), *'...I want to move out and live alone* (Albert), *I want to have everything – a pretty wife, driving license and my own home* (Gregory). There are some interviewees, however, who have doubts about their chances to live independently from parents. They can be caused either by their health state (*I think the doctor won't let me work as a chef cause I'm sick*, Keith) or hesitations connected with a choice of career (Philip, for example, dreamt of becoming a farmer, and his mother owned a farm where he would have a chance after graduating from school so if he decided to work there, he would not feel completely independent);

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- The interviewees' own activities. These are related to the previous factor – the strive for independence. The respondents perceived themselves as subjects who have an impact on their school work, future career and important life decisions (e.g. choosing their partners), they can definitely affect the realization of plans in a positive way;
- Opportunities to discuss topics related to the transition to adulthood and employment with people they considered significant and whom they trusted.

Category 4: Factors Hindering Transition

The analysis of the participants' interviews also shows that there are factors that may have a limiting or delaying effect on the respondents' transition to the adult life. They include:

- Limited physical and intellectual skills (including disorders in the sphere of communication, general health condition confirmed by a doctor who decides whether a person will or will not get a medical certificate to work in a particular profession). To give an example, in case of Peter, his original plans had to be modified for this reason: *I wanted to be a hairdresser, but they didn't give me some certificates*;
- The awareness of the males' own limitations and disabilities. Xavier can serve as an example of this as he dreamt of working a teacher, but decided to stop making attempts to become on, because – as he says – *You have to go to college, then do your master's degree. And I cannot do this, cause, you know, I am mildly disabled. And it'd be hard*;

- Lack of local opportunities (no schools or particular courses). This situation applies to Jeremiah who wanted to be a car mechanic, but *there is no such course in the school, so I chose this [a hotel service technician]*;

- Lack of planned strategies of active job search. In the interviews most participants gave only short responses when asked how they would be looking for a job. This might indicate a lack of awareness of the males that there is the need to take action in order to find employment, and that lack of such actions could become a factor impeding the transition to the stage of adulthood and professional career;

- Lack of awareness of some external factors, which can be an obstacle to apply career plans. When the interviewees, were asked whether they were concerned about the future, one of them, Gregory replied: *No, what will be, will be*, and Stan said *I'm sure it'll be ok, don't know how for now, but it will*. Another participant, Philip, when he was asked what determines the application of plans in his life, replied, *I don't know*. The problem may be the perception of the opportunities to implement plans that are dependent on the participants;
- Lack of people in their environment the participants would trust and who could enhance their aspirations and stimulate to action. The lack of (in case of almost all informants) a school staff member who would be a vocational counselor the participants would trust and talk to, is particularly striking. The fact that all the participants study in a vocational school makes the situation even more surprising. It seems that especially in a place like this there should be someone who would serve as a 'guide' or vocational counselor on the way to adulthood as far as students' future career is concerned. It is possible that there are employees / teachers in a school who play such a role, but, what seems to be important, the young males do not talk about such a person. The participants did not perceive the presence of such counselors/teachers as significant in their professional development.

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Discussion

The secondary data analysis of the raw data from the research by Bsdurek (2010), Ćwirynkało (2010), and Łysoniek (2014) allowed us to have a more in-depth view into the process of transition to adulthood of young males with mild intellectual disabilities. The main components of this transition are presented in table 2.

Table 2. *Components of transition to adulthood pattern of young males with intellectual disabilities*

Internal components	External components
1. Objective – state of health (mainly physical, intellectual)	1. Social ties & Social circles – family, teachers, friends
2. Subjective – awareness of the participants' own possibilities and limitations, competencies, their value system	2. Polish educational system, access to labor market and financial opportunities – educational and professional (lack of) opportunities: availability of courses, workplaces in a place of living or/and a possibility to move out

We also identified several factors that can either facilitate or act as barriers on the way to the participants' adult life. They are shown in table 3.

Table 3. *Factors facilitating and hindering the process of transition to adulthood pattern of young males with intellectual disabilities*

Factors facilitating transition to adulthood		Factors hindering transition to adulthood	
Internal	**External**	**Internal**	**External**
Abilities and skills	'Good' role models, supporters and significant others in close environment	Limited physical and intellectual skills	Lack of supporting people in the environment that the participants would trust and who could enhance their aspirations
Experience (in fulfilling certain family or professional roles)	The existence of significant people the participants would trust and could talk to about their plans for the future	Awareness of the limitations	Professionals (e.g. doctors) who make decisions whether they can or cannot do certain jobs (e.g. give medical certificates)
Strong interests and passions	The existence of schools and courses in educational system that are in accordance with the interviewees' plans and ambitions	Lack of planned strategies of active tertiary education, lifelong learning, and employment search	Lack of local opportunities (no schools, particular courses or employment places)
High estimation of work and family in the system of values	The existence of a variety of accessible workplaces in the community the participants lived in	Lack of awareness of some external factors, which can be an obstacle to apply career plans	High unemployment rate or lack of workplaces in the participants' future professions
Being characterized by (or believing to be characterized by) features that are considered typical of adults			
Striving for independence			
The interviewees' own activities			

We believe that, although there are certain benefits of undertaken qualitative secondary data analysis, it is also important to acknowledge the limitations of our research. We are aware that we analyzed 46 transcripts of interviews, which raises questions about the saturation of the content. Usually, qualitative researchers would like to have more and more data. So we believe that more transcripts would perhaps draw slightly different and broader picture of transition pattern to adulthood of Polish young males with mild intellectual disabilities and give deeper level of saturation. What is more, just like with most secondary analyses of data which was collected for other purposes, the fit between means and ends in the paper cannot be completed or easily saturated (see: Booth, Booth, 2002) and there are several themes we would explore more. Furthermore, except for one more experienced researcher, Ćwirynkało (2010), the primary data was collected by beginning researchers (Bsdurek, 2010; Łysoniek, 2014) with little experience in practical interviewing vulnerable participants, for example individuals with various types of disability, which may cause less saturated data in transcripts and datasets 2 and 3. Another issue is associated with the specifics and richness of the data collected from persons functioning intellectually on a mild level of intellectual disability (70-55 I.Q). Data collected from informants with such abilities may not be rich due to certain skills of people with intellectual disabilities, e.g. lower intellectual abilities, language competencies, finally communication willingness etc. The last issue related to difficulties in the field, was associated with gender of the young female researchers who interviewed young males, almost their peers who tried to flirt with the researchers during the interviews. We suppose that gender issue in the field might possibly have some impact on collected data.

Conclusion

The secondary data analysis was conducted in order to identify the pattern of transition to adulthood of 46 young Poles, males with mild intellectual disabilities. We indicated that the main theme of the pattern was a quest for autonomy. The secondary analysis let us also name the components included in the pattern. The results show that the components are both internal (related to health, limitations, capabilities, values, competencies) and external (relating to the education system, the labor market, financial and life opportunities in Poland as well as to social ties and social circles of the significant others supporting the 46 males).

The factors supporting the autonomy of 46 young males were associated with their own potential, social environment that supports their development as well as lifelong education and work opportunities in the community. Barriers that hinder the process of transition are systemic factors related to the lack of needed social networks supporting the development of young males. Moreover, the lack of learning opportunities in the system of Polish education and educational solutions, concerning lifelong learning courses are of great importance. Other barriers include the lack of adequate opportunities in the system of employment that would be addressed to needs of males with intellectual disabilities, and the lack of suitable job offers in the local environment, which would give people intellectual deficits a chance to work.

We believe that to make the transition process to adulthood successful for young males with intellectual disability, developing their skills and abilities is not enough. It is also important to allow them to branch out and work up their interests. This could be done through offering a wide range of experiences. We believe that young people with intellectual disabilities should be offered regular transition services and support. They may include, as

Flaxer et al. (2013; in: Hoover, 2016) notice, instruction, community experiences, the development of employment or acquisition of daily living skills.

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Effects of NeuroBike Cycling on EEG Brain Activity and Mathematical Performance: An Intervention Study.

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Abstract

The general purpose of the study was to promote the research on effects of physical activity on mathematical performance and brain functions, which is of particular interest regarding children's education as well as for all adults. Several studies have identified an influence of cycling on cognitive processes and brain activity. In the present study, we investigated effects of cycling training on a special bicycle on spontaneous EEG brain activity and on mathematical performance of young adults. Participants performed different interventions (special bicycle - NeuroBike, common bicycle, daily activity) in a two-week intervention with three 20-minute training sessions per week. Spontaneous EEG was recorded before and after each training condition at rest as well as during different mathematical tests (algebra, arithmetic, geometry) before and after the two-week intervention. Behavioral data show reduced mathematical performance in geometry after the NeuroBike and common bicycle intervention in comparison to daily activity. EEG data reveal increased temporal and occipital theta power, occipital alpha power, and parietal and occipital beta power after the two week intervention without acute influence of NeuroBike cycling at rest. Repeated NeuroBike training lead to increased frontal power in all frequency bands as well as temporal theta and alpha power during algebra performance. The results indicate that continuous training on a NeuroBike fosters a beneficial brain state for learning at resting state, but does not lead instantaneously to an optimum brain state for active spatial processing in mathematical problem solving.

Keywords: brain functions, motor control, physical activity, cognition, mathematic performance

Introduction

Effects of bodily activity on cognition have been studied for several decades and are meanwhile widely accepted (Colcombe & Kramer, 2003; Cox et al., 2015; Esteban-Cornejo, Tejero-Gonzalez, Sallis, & Veiga, 2015; Etnier et al., 1997). However, the influence on the specific brain activation patterns is barely examined. Previous research though shows a positive effect of general physical activity on cognition and brain activity. Thus few studies identified an influence of cycling on cognitive processes, concerning brain activity and mathematical performance partially (Crabbe & Dishmann, 2004; Etnier & Sibley, 2003). Henz, Schöllhorn and Oldenburg (2013) found increased alpha, beta as well as gamma activity during minor physical activity in processing different mathematical tests. But the main research is still limited on the analysis of executive functions in relation to physical activity. Further studies showed an influence of executive functions as working memory and inhibition on mathematical performance (Barrouillet & Lepine, 2005; Bull & Scerif, 2001; Passolunghi & Siegel, 2001; Swanson & Kim, 2007).

Up to now, most studies mainly focus on the effect of aerobic exercise like cycling, running and walking that are dominated by endurance and mainly repetitions of movement, on brain activity. This study uses the approach of analyzing a coordinative demanding exercise with high variety, and its effects on cognition. The NeuroBike is a kind of an instable bicycle with high coordinative demand applied in sports therapy and sports training. We assume cycling the NeuroBike requires certain executive functions as inhibition, high mental flexibility, and attentional control as a consequence of the specific, flexible frame of the bicycle,. An improvement in these functions is assumed to be advantageous for mathematical performance as well. The expected balance movement is similar to the cross-coat of humans due to the joint in the center of the bicycle frame and should lead to positive effects on brain

functions according to the manufacturer. In the present study, we investigate effects of training with this NeuroBike on spontaneous EEG brain activity and on mathematical performance (algebra, arithmetic, geometry) as a representative of the assessment of cognitive performance. Furthermore we compare these abilities with the impact of common bicycle training and following non-physical daily activity. We suspect according to the high coordinative demand of the NeuroBike a special influence on brain activity and mathematical performance.

Methods

Participants

The sample of 36 healthy volunteers, all students aged between 20 and 28 (mean 24±2 SD) years, was divided into three groups, equal in number as well as intra-group equal in gender. Subjects gave their written informed consent for study participation. All participants fit the neurologically necessary condition of the same handedness to compare brain activity (Serrien, Ivry, & Swinnen, 2006; Sun & Walsh, 2006) and right-handedness was selected as a study participation criterion for economic reasons. Volunteers were classified as neurologically healthy. No neurological impairment or related medical pre-existing conditions were mentioned. The physical or cerebral activity influencing substances (Zschocke & Hansen, 2012) have not been consumed at least 24 hours before the measurement dates. With one exception, caused by an injury outside the study framework, all participants completed the destined study design.

Participants were coded with numbers for anonymity of personal data. As an instruction volunteers were requested to refrain outside study participation from any physical activities demanding coordination and especially from cycling with a common bicycle throughout the intervention period.

Study design and procedure

The study was conducted at the sports institute of the Johannes Gutenberg University of Mainz. With a pre-post-test design the effects of three independent training groups were investigated. EEG brain activity and mathematical problem-solving competence were chosen as measurement parameters for cognitive performance dependent on different training groups. Secondary criteria, which may affect cognitive functions, were the subjective state, determined by assessing physical and mental effort, and the quality of cycling management. The measurements were carried out under laboratory conditions.

One group, that was training on the NeuroBike, and two control groups, characterized by training on a conventional bicycle and by the pure pursuit of physically inactive everyday activity, determined the three groups of participants with group-dependent differences in content as well as in number of appointments.

According to Frenzel (2004) an average time of 14.7 minutes is needed in order to obtain a very first cycling skill of the NeuroBike (Schöllhorn et al., 2005). Therefore all participants of the NeuroBike group started with two practice sessions of 20 minutes on different days for acquiring sufficient cycling ability on the NeuroBike. Practice was based on the concept of explorative learning (Steiner, 2013). Afterwards cycling ability was tested by passing five laps in a self-designed slalom course through documentation of lap time, various cycling errors, and heart rate. The conventional bicycle group was also obliged to undergo this cycling test before starting the two-week period of measurement. Measurement data of participants, who didn't pass this test, were excluded from further evaluation. Overall four

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participants of the NeuroBike and three of the common bicycle group were suspended. The daily activity group required no additional appointment.

Within the two-week intervention period the NeuroBike and common bicycle group completed six training sessions of 20 minutes cycling in the course. The first and last session included the pre- and post-test, measuring EEG brain activity and mathematical performance. The daily activity group was just supposed to underlie the pre- and post-test and in between to pursue their common, everyday activities. As non-physical daily activity, watching a TV series for 20 minutes was chosen. The current subjective state of every participant was measured each session by means of a questionnaire containing the individual assessment of physical and mental effort as well as the grade of wellbeing, concentration, sleep, and the last recent activity before the test.

The procedure of each test (Figure 1) was defined by the measurement of spontaneous EEG activity for four minutes with eyes open just before and after the intervention session of 20 minutes at rest. Afterwards mathematical performance was assessed during 15 minutes with simultaneous EEG brain activity measurement.

Figure 1. *Pre- and post-test procedure*
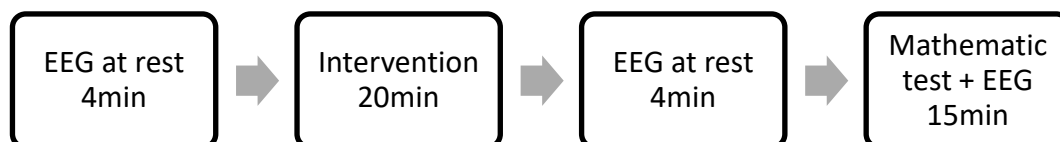
Apparatus

Intervention

The NeuroBike, a common bicycle, and a known sitcom available as DVD were applied for intervention. The NeuroBike (Figure 2) is a kind of an instable bicycle applied in sports therapy and sports training. The balance movement during cycling is similar to the cross-coat of humans due to the hinge-joint in the center of the bicycle frame (instead of the moveable handlebar in common bicycles) and leads according to the manufacturer to positive effects on brain function.

The NeuroBike and the common bicycle were similar in wheel size (26 inches), brakes and adjustability of seat height. The only difference laid in the number of gears (single-gear NeuroBike and multi-gearbox of the common bicycle). To avoid potential influence of differences in resistance on analysis, a single gear of the common bicycle was chosen, which corresponded to the one of the NeuroBike. Two different episodes of the sitcom were shown on a computer to the third group, while the relevant participants watched them sitting on a common chair with headphones with constant volume.

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Figure 2. *NeuroBike*

Cycling course

The course of physical exercise was especially set up for this study, since no validated, especially suitable course for NeuroBike cycling was available. The course was inspired by recommendations of a project "limits for absolute unfitness to drive with cyclists" (Daldrup et al., 2014) and cycling instructions of the NeuroBike manufacturer. The course was divided into four main elements. These include goals to drive through in an oval arrangement, slalom driving through gates and shields in irregular distances as well as a straight, long slim alley. In order to reduce adaptational effects and minimize emerging boredom, the cycling direction had to be changed each lap.

Participants were instructed to cycle the course as quickly and safely as possible. According to the varied course the use of executive functions was considered to be maintained constantly. Individual cycling ability was quantified by means of the average time per lap, fastest and slowest lap as well as average cycling errors of three different types (foot, obstacle-, omission-errors). A foot-error was defined as any contact with a foot to the ground. Any contact with the bicycle or body to an obstacle was identified as an obstacle-error. Omitting an obstacle of the course was declared as omission-error.

Electroencephalography

Spontaneous resting electroencephalography (EEG) was assessed by the EEG-system Micromed SD LTM 32 BS with a sampling rate of 256 Hz and recorded by the international 10-20 system using 19 electrodes. At pre- and post-test, EEG was recorded before and after the training session at rest, and during the mathematical tests. For all EEG measurements a homogeneous and low impedance of the electrodes in all points was sought. Spectral power densities were calculated for the theta (4-7.5 Hz), alpha (8-13 Hz), alpha1 (8-10 Hz), alpha2 (10-13 Hz), beta (13-30 Hz), beta1 (13-15 Hz), beta2 (15-21 Hz), beta3 (21-30 Hz) and gamma (30-70 Hz) band. The conduction of brain activity was unipolar with grounding on the nose. Furthermore, a bipolar electrooculogram was applied. Additionally, an electromyogram was recorded for monitoring the activity of the neck and shoulder muscle activity. Data were recorded by means of the SystemPlus Evolution software. Data were band pass filtered (0.008 Hz to 120 Hz).

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Mathematical Tests

The test of mathematical performance is mainly based on the one Henz, Schöllhorn and Oldenburg (2013) used in their study for the analysis of the relation between minimal physical activity and brain activity. The other few existing validated tests in German language to measure mathematical performance of young adults (Jasper & Wagener, 2013; Lienert, Hofer, & Beleites, 2014) were according to the destined processing time and type of tasks not appropriate to the remaining study design.

Overall performance in mathematics (Figure 3) was divided into the performance in the subareas algebra, geometry and arithmetic. This was assessed before and after the intervention by a multiple-choice PC test. For each subarea a processing time of five minutes was set to solve as many tasks as possible by mental effort only. The tests demanded solving linear equations with two-sided variables (Filloy, Rojano, & Puig, 2008), using spatial ability (Birkel, Schein, & Schumann, 2002) and mental arithmetic (Padberg, 2007). The chronological arrangement of the three subareas was evenly distributed over all participants in order to ensure independence of the processing sequence. For each subarea the number of correct and total solved tasks, pace of work, and success rate of the subareas was determined.

Figure 3. *Setting of the Mathematic Test*

Heart Rate Measurement

Heart rate was monitored at rest right before and during the intervention by a Polar H7 heart rate sensor connected via Bluetooth to an iPad Air as a control variable. The strain on the cardiovascular system between the bicycle and NeuroBike group was compared in order to control the exhausting level that can influence brain activity and cognitive performance (Coe et al., 2006; Hillman et al., 2008).

Mental and Physical State

Mental and physical exertion, based on subjective expression of the participants, was documented before and after every session. This was operationalized using a numerical rating scale with an even division of the values from 0 as low to 10 as high exertion. Out of this information an additional variable was created signifying the changes of each exertion type between assessment times. Therefore a values range from -10 to 10 existed in which the negative values described a decrease and positive values an increase in effort.

Data Analysis

Throughout the analysis, a significance level of five percent ($P < 0.05$) was determined. The recorded measurements of brain activity were statistically analyzed by EEGLAB, an add-on of the software MATLAB. All other measured data were entered into

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the statistical software SPSS and subjected to selected statistical tests. All variables were tested on standard normal distribution by Shapiro-Wilk-test. Descriptive statistics were generated for every sub-region of analysis (Table I).

Physical Intervention

Data of the movement-time course and the heart rate were evaluated via ANOVA with repeated measurement. A six-step within-subjects factor corresponding to the number of intervention events was created with the experimental group as between-subjects factor.

Mental and Physical State

First, the subjective conditions of all three groups were analyzed in a pre- and post-test comparison. Using analysis of variance with repeated measurement, changes in the mental and physical effort of the pre- and post-test were evaluated with the number of measurement times corresponding the double within-subjects factor.

Furthermore the sensitivities of the two physically active treatment groups according to the course management was analyzed by means of ANOVA with repeated measurement for all six measurement points followed by a post-hoc test with Bonferroni alpha correction.

Mathematical Performance

Homogeneity of mathematical performance data at the very beginning of the study was proven by the Kruskal-Wallis test. For analyzing intergroup differences within the three mathematical subareas due to the two-week intervention period, ANOVA with repeated measurement was applied using a double within-subjects factor and the experimental group as between-subjects factor. In addition post-hoc test was used with Bonferroni correction. To examine changes in movement groups the t-test for dependent samples was applied in the sub-region geometry. Non-normally distributed data of the partial areas algebra and arithmetic were analyzed by Wilcoxon-test.

Evaluating Individual Characteristics

The variables 'age', 'last activity right before each session', 'general well-being', 'sleep of the previous night' and 'current concentration' were analyzed by the Kruskal-Wallis test differentiating between experimental groups. Data of the 'last activity right before each session' was scaled in three categories, a) cognitively and b) physically demanding as well as c) without request.

Electroencephalography

Spectral analysis was used for assessment and interpretation method of EEG data (Zschocke & Hansen, 2012). For each EEG frequency band, theta, alpha, beta and gamma, as well as the respective sub-bands power density spectra of the EEG signal has been created by Fast-Fourier-Transformation. Furthermore, an independent component analysis (ICA) was conducted via EEGLAB. Recurring artefacts such as eye closing and eye movement as well as muscle artefacts of muscle activity (EMG) were filtered by reducing interference-prone components. After visual inspection of the complete recordings individually occurring, abnormal interferences of the electric potential have been eliminated. For statistical examination the analysis of variance included post-hoc test with Bonferroni correction was conducted.

Results

Table 1. *Descriptive statistics of selected variables*

		NeuroBike	common bicycle	daily activity
N		7	9	12
Age (years)		25.8 ± 1.0	23.7 ± 1.5	23.7 ± 2.1
Gender (n)				
Males		5	4	6
Females		3	5	6
Well being		2.8 ± 0.3	2.8 ± 0.2	2.8 ± 0.3
Sleep last night		2.5 ± 0.4	2.6 ± 0.4	2.5 ± 0.6
Concentration		2.5 ± 0.3	2.6 ± 0.4	2.5 ± 0.5
Last activity (%)				
cognitiv		29.4 ± 33	18.5 + 19.3	29.2 ± 39.6
physical		14.6 ± 27.2	24.2 ± 27.6	20.8 ± 33.4
without request		56.0 ± 39.7	57.3 ± 30.2	50.0 ± 42.6
Mental and physical state (x ≤ ±10)				
mental effort	Pre	1.6 ± 2.1	0.7 ± 2.3	-1.2 ± 1.9
	Post	3.3 ± 2.6	2.9 ± 1.5	-0.7 ± 1.7
physical effort *	Pre	3.7 ± 1.6	2.4 ± 2.6	-1.5 ± 2.2
	Post	3.7 ± 2.1	5.1 ± 1.2	-2.5 ± 2.2
Movement intervention				
Heart rate (bpm)				
at rest	Pre	69.6 ± 11.9	71.4 ± 14.2	
	Post	67.7 ± 8.3	64.6 ± 15.0	
exercise	Pre	134.6 ± 19.3	145.9 ± 22.5	
	Post	137.6 ± 15.3	153.6 ± 14.8	
Lap time (s) **	Pre	47.2 ± 5.8	31.3 ± 3.3	
	Post	31.6 ± 1.6 **	27.1 ± 2.2 **	
Fastest lap (s) **	Pre	38.1 ± 5.0	28.3 ± 3.0	
	Post	28.0 ± 2.1 **	24.9 ± 2.3 **	
Slowest lap (s) **	Pre	80.3 ± 9.7	40.0 ± 5.4	
	Post	45.0 ± 7.2 **	31.9 ± 3.8 *	
Cycling errors (n per lap)				
Overall **	Pre	5.6 ± 3.4	0.1 ± 0.1	
	Post	0.7 ± 0.3 *	0.1 ± 0.1	
foot-errors **	Pre	4.9 ± 3.2	0.0 ± 0.0	
	Post	0.3 ± 0.2 *	0.0 ± 0.0	
obstacle-errors**	Pre	0.7 ± 0.3	0.1 ± 0.1	
	Post	0.3 ± 0.1 *	0.1 ± 0.1	
omission-errors	Pre	0.1 ± 0.1	0.0 ± 0.0	
	Post	0.1 ± 0.0	0.0 ± 0.0	
Workpace (n)				
Algebra	Pre	23.6 ± 11.4	22.0 ± 12.3	21.2 ± 11.7
	Post	29.7 ± 15.3 *	28.33 ± 14.5 *	27.8 ± 13.9 *
Geometry	Pre	8.3 ± 2.5	8.3 ± 2.6	7.9 ± 4.4
	Post	11.1 ± 4.2	11.2 ± 3.7	11.8 ± 5.0 *
Arithmetic	Pre	15.1 ± 5.5	13.3 ± 2.7	14.5 ± 4.6
	Post	18.0 ± 4.0	16.3 ± 4.6	16.4 ± 5.6
Success rate (%)				
Algebra	Pre	74.9 ± 17.7	75.8 ± 16.2	76.7 ± 12.4
	Post	77.1 ± 11.7	81.2 ± 6.1	75.8 ± 12.4
Geometry	Pre	38.9 ± 18.6	32.1 ± 26.0	34.5 ± 23.4
	Post	50.9 ± 25.2	43.6 ± 26.8	42.8 ± 17.7
Arithmetic	Pre	74.6 ± 20.3	66.4 ± 20.1	72.8 ± 13.7
	Post	74.6 ± 13.1	66.7 ± 15.0	73.6 ± 12.4

Note: mean ± SD; * p<0.05, ** p<0,001; * after parameter signify intergroup difference; * after
certain value signify intragroup difference between pre- and post-test.

Movement Intervention

The statistical results show no significant intergroup difference in heart rate at rest (F (2,968) = 0.350, P = 0.787) as well as during movement intervention (F (5) = 1.413, P = 0.230). In all speed parameters (average lap time F (2,367) = 28.905, P < 0.001, η^2 = 0.674; fastest lap F (1,898) = 14.246, P < 0.001, η^2 = 0.504; slowest lap (F (2,927) = 10.145, P < 0.001, η^2 = 0.420) highly significant differences appeared with much better values for the common bicycle group. Also all parameters related to errors during the bicycle rides (overall errors F (1,287) = 14.849, P = 0.001, η^2 = 0.515; foot-errors F (1,292) = 14.851, P = 0.001, η^2 =0.515; obstacle-errors F (1,967) = 8.490, P = 0.001, η^2 = 0.378), except omission-errors, displayed highly significant differences.

As a result of the two-week intervention period highly significant intragroup effects were determined within the NeuroBike group in speed parameters (average lap time F (2,080) = 55.753, P < 0.001, η^2 = 0.903; fastest lap F (1,404) = 41.593, P < 0.001, η^2 = 0.874; slowest lap F (5) = 16.093, P < 0.001, η^2 = 0.728). The bicycle group showed highly significant intragroup differences (average lap time F (2,030) = 16.550, P < 0.001, η^2 = 0.674; fastest lap F (2,119) = 11.598, P = 0.001, η^2 = 0.592; slowest lap F (1,841) = 6.408, P = 0.011, η^2 = 0.445). With regard to the error parameter only the NeuroBike group cared, except the omission errors, for a significant decrease (overall errors F (1,284) = 11.483, P = 0.008, η^2 = 0.657; foot-errors F (1,292) = 11.348, P = 0.008, η^2 = 0.654; obstacle-errors F (1,662) = 7.695, P = 0.012, η^2 = 0.562) following the two-week intervention.

Mental and Physical State

In pre- and post-test comparison no significant difference in mental effort has been identified between groups (F (2) = 1.209, P = 0.315). Based on the post-hoc tests with Bonferroni correction highly significant differences between the NeuroBike as well as common bicycle group and the daily activity group were determined (P < 0.001), but no statistical differences between the movement-intensive experimental groups (P = 1.00). The analysis of physical exertion displayed a significant difference between the common bicycle, NeuroBike and daily activity group (F (2) = 3.690, P = 0.039, η^2 = 0.228) with similar group-specific results as already presented in mental effort.

The evaluation of subjective condition throughout the exercise period of time revealed no significant difference in mental effort (F (5) = 0.262, P = 0.932) as well as in physical exertion (F (2.676) = 2.344, P = 0.095) between movement groups.

Mathematical Performance

Algebra

There was no significant difference of measured parameters in Algebra between treatment groups in the pre-test (pace of work H (2) = 0.079, P = 0.961; success rate H (2) = 0.084, P = 0.959) and due to the two-week intervention period (pace of work F (2) = 0.024, P = 0.976; success rate F (2) = 0.699, P = 0.506). Within every group a significant increase of pace of work was determined (NeuroBike Z = -2.205, P = 0.027, r = 0.833; common bicycle Z = -2.524, P = 0.012, r = 0.841; daily activity group Z = -2.848, P = 0.004, r = 0.822). There were no significant differences of success rate within the individual test groups.

Geometry

The analysis of the pre-test showed with respect to pace of work and success rate no significant intergroup differences (pace of work H (2) = 0.265, P = 0.876; success rate H (2) = 0.165, P = 0.921). Following study participation no significant difference between groups was

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seen compared to the pace of work (F (2) = 0.243, P = 0.786) and success rate (F (2) = 0.072, P = 0.931). Within experimental groups no significant differences were found according to the two-week training, except the daily activity group, who could achieve only a significant improvement in pace of work (t (11) = - 3.600, P = 0.004, r = 0.735).

Arithmetic

No significant intergroup differences were detected in the pre-test (pace of work H (2) = 0.519, P = 0.771; success rate H (2) = 0.822, P = 0.663) as well as after study participation (pace of work F (2) = 0.495, P = 0.615; success rate F (2) = 0.023, P = 0.977). In pre- and post-test analysis the NeuroBike group missed narrowly a significant increase in the pace of work (Z = -1.951, P = 0.051). The other two groups obtained no significant changes. Success rate didn't lead to a significant difference in any test group.
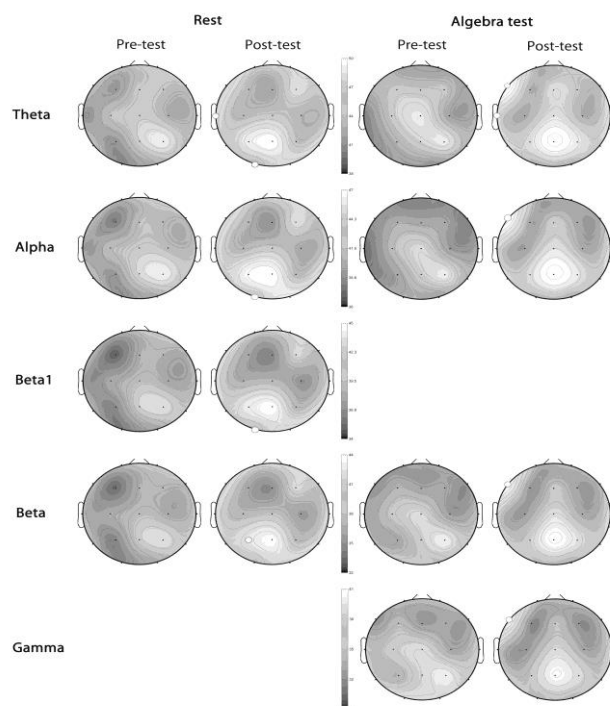
Participant Characteristics

Statistical analysis yielded a non-significant effect of age between experimental groups (H (2) = 1.928, P = 0.381). Generally welfare (H (2) = 0.301, P = 0.860), the evaluation of last night's sleep (H (2) = 0.313, P = 0.855) and the ability to concentrate (H (2) = 0.589, P = 0.745) led also to no significant differences between experimental groups. Analysis of the last activity identified also no significant intergroup differences in the different test populations (cognitively demanding H (2) = 0.426, P = 0.808; physically demanding H (2) = 1.495, P = 0.473; without any effort H (2) = 0.079, P = 0.961).

Electroencephalography

EEG data revealed significantly increased temporal theta power, occipital theta, alpha and beta1 power and parietal beta power (P < 0.05 each) after the two-week intervention without acute influence of NeuroBike cycling at rest (Figure 1).

Acute NeuroBike training caused a reduction of frontal theta, alpha and beta power in the pre-test as well as frontal and temporal theta, frontal beta and gamma power in the post-test. No significant changes in acute influence of NeuroBike training as a result of the two-week intervention were observed. Repeated NeuroBike training led to significant increased frontal power in all frequency bands and temporal theta power during algebra performance (Figure 1). There was a reduction of temporal beta3 and gamma power in geometry just as a reduction of temporal, parietal, occipital and frontal gamma brain activity in arithmetic performance.

Figure 4. *EEG spectral power changes (divided in frequency bands) of NeuroBike intervention without acute influence at rest (left) / while Algebra-test (right). White colored circles show significant differences (P < 0.05) compared to the pre-test. Scale unit μV^2*

Discussion

The analysis of participants' characteristics provided in all individual criteria no significant differences, in consequence a possible influence of these characteristics on behavioral data and EEG brain activity is not suspected. Behavioral data show slightly reduced mathematical performance in geometry after the NeuroBike and common bicycle intervention in comparison to daily activity. In addition, EEG data indicate reduced brain activity in all frequency bands just after movement intervention. Evoked mental fatigue may be a consequence of high demands on concentration and attention skills during course cycling. Measured heart rate during training session just as physical effort testifies no significant differences between the intervention groups.

Increase of theta, alpha and beta activity at unaffected rest after the two-week intervention indicates a positive effect of NeuroBike training on brain activity. No differences in pre- and post-test comparison of brain activity after acute cycling suggest a persistent effect of NeuroBike training, which though might be related to a continuous cycling learning process based on steady improvements in cycling speed and errors. EEG during mathematical test shows a dissonant effect on brain activity. Continuous NeuroBike training seems to be beneficial in objective related cognitive processes like equations solving (higher absolute power), but negatively associated with spatial abilities (decreased beta and gamma activity) and mental arithmetic (decreased gamma activity). In comparison to the studies of Henz et al. (2013) and Crabbe and Dishmann (2004), which both present beneficial effects of bodily movement on brain activity, but used different study designs of type, duration and intensity of physical activity, there is no conformity with regard to the results of this study. The effect on cognition appears to be dependent of the certain kind of exercise, defined by type, duration and intensity of physical activity.

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Conclusions

The analysis of the results has occupied an influence of NeuroBike training on mathematical problem solving expertise and EEG brain activity. Training on the NeuroBike seems to cause a brain state conducive to learning and receptivity under resting conditions. The impact, based on the mathematical performance, varies according to the respective underlying test requirements. Behavioral data of mathematical solving skills is to some extent even indicated with a tendency negative impact due to NeuroBike training. It can be deduced that NeuroBike training does not cause a brain state level appropriate for productive solving of mathematical tasks. To confirm these assumptions follow-up studies should be carried out using the NeuroBike with accompanying, targeted extensive analysis of learning processes and different cognitive practices. Therefore it would be convenient to examine the effect of NeuroBike training in children during school lessons and compare the influence on following cognitive performance dependent of various school subjects. Furthermore, the durability of an acute effect of practice sessions on brain activity as an overtime sustained effective training result has to be discussed. The present results show a relationship between specific physical activity and cognition, and that the influence on cognitive processes is partially fostered. This was achieved using a new, according to the literature not yet closely investigated movement device, which was initially unknown for the participants and required coordinative demanding movements. Further research is going to evaluate the effect of NeuroBike cycling as a cognitively enabling instrument. Hence not only endurance but also coordinative demanding physical activity may effect cognitive processes. In summary, even if the present results are ambiguous, further research of different kinds of physical activity promise a great potential of interesting investigations of the influence on cognition.

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Yoga Learning and Practice: Perception by Athletes Participating in Competitive Sport

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Abstract

One of the significant influences on intrinsic motivation of the learner's continued practice of an activity, is, the learner's perception about the activity. The purpose of this study is to examine the perception of 'yoga' activity by male and female athletes participating in different competitive sports during varied level of competitions. Studies about athlete perception towards yoga and their motivation to learn and practice yoga is limited. This study is important since yoga postures (asanas) and regulated breathing (pranayama) could be applied as one of the self-care methods along with the sport fitness and recovery training for overall sport wellbeing including prevention and effective management of sport injuries.

Key words: Yoga, perception, athlete

Introduction

Intrinsic motivation is a behavior that engages learners for their own sake (Deci& Ryan, 1985). Most postures are coordinated muscular movements with breathing. According to Collins (1998), yoga can be considered as a mind-body exercise. Yoga is an ancient practice and follows a teaching through demonstrations and instructions.Many of the yoga forms (Ashtanga, Hatha, Hot, Iyengar, Kundalini, Kripalu etc.)advocate practiceof yoga postures with mindfulness or awareness.

There are scientific studies about yoga application to enhance flexibility and muscular strength (Collins, 1998; Schleip R. et al., 2011; Woodyard C,2011) enhance overall quality of life, (Woodyard. C, 2011), improve cardio respiratory endurance (Tran et al., 2001), improve in mood (Shapiro & Cline,2008), improve emotional well-being (Hartfiel et al., 2011), pain management (Fransen& McConnell, 2008;Yogitha et al., 2010;Michaelson et al., 2012), reduce perceived stress (Franklin, 2000;Kirkwood et al., 2005; Smith et al., 2007)musculoskeletal and other psycho somatic conditions etc. Yoga has a greater effect on range of motion at the shoulder and hip than static stretching in a healthy population (Pauline M.,&Rintaugu, E.G, 2011). Studies also illustrate benefits of yoga practice on cognition (Birdee et al., 2009). However, are there any specific standards established till date in yoga pedagogy that can be considered the most effective, especially for athletes participating in competitive sport?

Methods

Model

Practical yoga demonstration and practice sessions with a combination of yoga postures and pranayama (controlled breathing) were given to two sport teams (football and volleyball) as part of their sport fitness and recovery during their competitive season.

A combination of hatha yoga postures included Dandasana (staff pose), Marichyasana (Marichi's twist), Gomukhasana (cow-face pose), Adhomukhashvanasana (downward faced dog pose), Halasana (plough pose), Baddhakonasana (bound angle pose), SuptaSukhasana (reclined easy pose), Bhujangasana (cobra pose), Shalabhasana (locust pose), Tadasana (mountain pose), Trikonasana (triangle pose), ParivrittaTrikonasana (revolved triangle pose), Virabhadrasana (warrior pose),Shavasana (corpse pose) and pranayama (controlled breathing).

Male athletes (football) were given 28 yoga sessions (20 to 25 minutes per session) over 5 months (average two sessions per week) during their competition season and female athletes (volleyball)were given 25 yoga sessions (20 to 25 minutes per session) spread over 4 weeks
(2 sessions per day) during their competitions. Yoga sessions were included after their sport training and fitness training.After the program, the athletes filled their responses in the modified 'Activity Perception Questionnaire' (Deci, Ryan, 1985) to share their feedback specifically about yoga.The questionnaire is a part of the Intrinsic Motivation Inventory (IMI), a multidimensional assessment to assess the participants' subjective experience related to the activity in laboratory experiments.

Population

Male football athletes (n=12) with mean age 18 to 25years and female volleyball athletes (n=11) with mean age (17 to 19 years) participated in yoga programs during their competitive season. The male athletes were from geographies of Europe and Africa and the female athletes were from Europe.Participants of both groupshad not attendedany yoga program earlier.

Analysis

The responses were compiled on microsoft excel and analyzed with the two sample t-test.

Results

The means of sub-scales of perceptions of interest, perceived choice and usefulness in male athletes were 4.66 ($\pm$ SD 1.22), 3.4 ($\pm$ SD 0.70) and 5.55 ($\pm$ SD 1.41) respectively. The means of sub-scales of perceptions of interest, choice and usefulness in female athletes were 5.27 ($\pm$ SD 0.95), 4.39 ($\pm$ SD 0.62), 5.58, ($\pm$ SD 1.01). The statistical t-values of the above two samples of unequal variance are presented in table 1. below.

Table 1. *Statistical t-value of the two samples*

Variable (Sub-scales of perceptions)	t-stat	p-value (one-tail)	p-value (two-tail)
Interest	1.12	0.13	0.27
Choice	3.82	0.0004*	0.0009*
Usefulness	0.076	0.46	0.93

*p<.05

Discussion

In the current study yoga is considered as a form of exercise for athletes. This view is supported by scientists including Collins (1998). As per one of the principles of Kolb's experiential learning theory (2005), linking the educational experiences to the learner's interests kindles intrinsic motivation and increases learning effectiveness.The athletes participated in a yoga program for the first time in their sport careers. Many of the male and female athletes were pursuing their academic education along with their sport. Yoga was introduced to them for the first time during their sport career.There were no significant differences in the perceived interest and usefulness of yoga as an activity among male and female athletes. The means of the perceived 'usefulness' was almost equal (mean = 5.55 and 5.58 for male and female athletes). Though, with this small sample size, the perceived 'usefulness' parameter of yoga as an activity could be gender agnostic for athletes participating in competitive sport, further researches in the direction are warranted. The

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female athletes consider yoga as their perceived choice of activity. Perhaps one of the biases could be because the instructor was a female.

The ways the instructions are framed can influence the students's learning process and performance (Vansteenkiste, Simons, Lens, Sheldon &Deci, 2004). In the current study, the yoga postures were first demonstrated by the instructor and then practiced by the athletes according to their individual capacity. The yoga poses were explained in English (a verbal confirmation from athletes was taken about their understanding) by the instructor. After each session, a verbal feedback was taken from the participants about their experience of the learning.

The perception of participant athletes was important to understand their individual values and beliefs about the yoga program. This view is supported by aqualitative study (J. Case-Smith et al., 2004) that investigated perception of students (n=24) of a 8 week yoga program, in which, taped focus group interviews of select students (n=21) were conducted after the yoga program. Open ended statements and questions were posed to the focus group to elicit their explanations. The study documents that students learned strategies from the yoga program that they used in other situations, to focus and concentrate. The yoga program helped students to feel calm and focused, give them strategies to control their behavior in stressful situations and supported a positive self-esteem. This study recommends that yoga programs in schools to improve social participation and help students to engage in classroom-learning.

In the current study, yoga was given as an exercise to athletes participating in competitive sport and their levels of intrinsic motivation for the same was measured using the sub-scales of participation with interest, usefulness and preferred choice. There is a possibility of 'emotions' to influence an individual's perception after yoga practice. Shapiro & Cline (2004) confirm an immediate effect of mood after yoga practice. Allen and Laborde (2014) illustrate that personality similarity is one potential contributing factor to adherence levels in exercise programs. Since yoga was also given as an exercise to athletes, their personalities could have influenced perception.

Suggestions

In the current study, female and male athletes perceive yoga as useful, however, female athletes find yoga to be their perceived choice more than the male athletes.Since the study is a non-controlled study with a smaller sample size, it is recommended to conduct longitudinal studies applying different yoga pedagogies for athletes participating in competitive sports to measure their perception of yoga activity.

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The effects of Cassady and Justin's Functional Model for Emotional Information Processing on Improving social competence of first grade Children with ADHD

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Abstract

This study explores whether or not Emotional Information Processing (EIP) model Intervention has positive effects on the Social Competency in first grade children with ADHD. 10 first graders primary who had been identified as having ADHD using Attention-Deficit Hyperactivity Disorder Test (ADHDT) (Jeong, 2005) and were experiencing social problems were chosen .These children from two primary schools located in Baltim Edara, Kafr EL Sheik, Egypt .The effects of training using Cassady and Justin's Functional Model for Emotional Information Processing on social competence of first grade children with ADHD were assessed using Mann–Whitney U test, Wilcoxon signed-rank test, and Z Value . Findings from this study indicated the effectiveness of the Emotional Information Processing (EIP) model Intervention employed in increasing Social Competency of the target children.

***Keywords*:** Emotional Information Processing (EIP) model, Social Competency, children with ADHD

Introduction

In the past two decades Attention Deficit Hyperactivity Disorder (ADHD) has received a great deal of research and media attention, becoming one of the most publicly recognized disorders. Often defined as a neurodevelopmental condition, ADHD is characterized by inappropriate levels of hyperactive (motor) activity, impulsivity, limited inhibitory control of responses, and an inability to focus, shift and sustain attention . These core features affect development, cause significant disruption in daily life, and extend into several domains of psychosocial functioning (e.g., academic, social/interpersonal) (Holly et al. , 2014).

Many children with ADHD exhibit severe social problems. These social problems often result in their being overtly rejected by their peers. Such rejection is a strong predictor of poor long-term outcomes. Children with hyperactivity appear to manifest a greater amount of aggression and resort to more aggressive solutions to social situations than normal children (Rudolph, 2005)

As stated previously, hostile or reactive aggression has been documented to be less socially acceptable among the peer group and affect peer reputation status. Maladjustment of early school-age peer relationships may potentially increase a child's risk for later maladjustment in a number of different areas (e.g. social skills, relationships, self-esteem), even for those individuals who no longer meet criteria for behavioral disorders in adolescence and adulthood (DeWolfe, Byrne, & Bawden, 2000).

In 1990, Salovey and Mayer released the first publication examining the construct identified as emotional intelligence. The construct was soon integrated into the professional and lay lexicon, leading to the simultaneous development of established and careful psychological research and a flurry of popularized writings explaining how one can "get more of it." Over the past two decades, a surfeit of work has amassed that explores the impact that EI has on life adjustment and success, the conditions under which one can develop EI, and the nature of EI as a psychological construct(Cassady& Justin , 2008).

Social Competence in children with ADHD

It is widely accepted that children with ADHD have deficits in many areas of social functioning (Barkley et al., 1988). The inappropriate behaviors and poor social skills characteristic of many children with ADHD are commonly met with negative reactions by

others in their environment (Campbell, 1990; Guevremont & Dumas, 1994; Hubbard & Newcomb, 1991).

It was estimated that more than 50% of children with ADHD have significant problems in social relationships with other children (Pelham & Bender, 1982). As mentioned above, the interpersonal behavior of children with ADHD is often characterized as more impulsive, intrusive, excessive, disorganized, engaging, aggressive, intense, and emotional. This behavior disrupts the smoothness of the ongoing stream of social interactions, reciprocity and cooperation that may constitute the children's daily life with others (Whalen & Henker, 1992).

The learner with AD/HD often experiences difficulties within this system in that he is unable to behave in a way that fits appropriately with his peers, experiences difficulties establishing new friendships as well as maintaining existing relationships, working collaboratively in groups, and/or dealing with conflict. Because interactions with peers assumes such immense importance during the school years – social pressure is perceived to exceed academic pressure -the learner with AD/HD often feels humiliated, rejected, frustrated, isolated and angry, which negatively effects his view of himself (Levine, 2002)

The learner with AD/HD frequently misinterprets social situations because he experiences difficulties interpreting and communicating the feeling part of language (Levine, 2002). He also finds it difficult to use an appropriate tone of voice, or recognize a tone in others, use a correct choice of words, or follow the rhythm of language (Levine, 2002). In support of this , Sears and Thompson (1998),comment that learners with AD/HD are not always able to understand their behavior from another person's point of view, which indicates that their cognitive development relating to cause and effect is not appropriate for their age. Although most children are able to learn empathy naturally, learners with AD/HD often need to be taught these moral qualities (Sears & Thompson, 1998). The learner with AD/HD may also find it hard to use 'code switching', which refers to being able to converse in a different and appropriate manner with different people and is an essential social language function. For instance ,most children verbalize in a different way if they are addressing parents, peers , siblings, the Principal, or the teacher, and are quick to reject or tease the child who is out of step or unable to switch into their language code(Wootton, & Roets, 2013.).

Cassady and Justin's Functional Model for Emotional Information Processing

Cassady and Justin posit it " we believe an Emotional Information Processing (EIP) model may be a useful tool to observe, explain, and predict human agency in response to emotional scenarios. We offer our construction of the EIP model as a framework for further research and application". (Cassady and Justin,2008, P.28)

As shown in Figure 1, we propose that EIP involves 5 steps that are largely consistent with Crick and Dodge's SIP model: Encoding, Cue Interpretation, Goal Articulation, Response Selection and Prediction, and Enactment.

Step 1: Encoding

The first step (Encoding) involves attending to internal and external cues related to the emotional event facing the individual. During this encoding process, individuals must attend to, perceive, interpret, and categorize information gathered from social cues, environmental conditions, and personal beliefs related to the setting. This step encompasses the first branch of Mayer and Salovey's ability EI model , in which individuals perceive emotions. In this step, the individual recognizes and examines emotions that have an internal locus as well as

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information gathered from others that they interact with. Those individuals with high ability EI have mastered this ability to interpret the emotional data presented both internally and externally. Strong skills in encoding personal emotional messages are necessary to effectively identify our own emotional states, which can be used to activate appropriate coping strategies later in the processing cycle. Similarly, accuracy in reading external indicators of others' emotional states or tendencies provides us with the ability to accurately classify the intentions, needs, or desires of those around us, and limit biased interpretations of situational factors (Cassady and Justin,2008).

Step 2: Cue Interpretation

This second step in the model is an extension of the primary encoding process. That is, once the information from the social and internal systems are attended to and perceived, the individual must interpret the meaning of those cues. This step is largely operative in the emotional integration and understanding branches of Mayer and Salovey's ability model . As they explain, this involves triggering cognitive actions related to processing the emotional event, interpreting and understanding the cues received in the encoding step, and considering the implications of the emotional information that has been processed. Those with high EI have a strong representation for emotional knowledge or have an elaborate and detailed repository of tacit knowledge that can guide the interpretation of practical situations .This repository of knowledge includes social mores, previous personal experiences, cultural norms, and knowledge of personal emotional conditions. Reference back to a deficient knowledge base will lead to poor interpretation of social or internal cues, misattribution of intent from others, or inaccurate labeling of emotional states (e.g., confusing anxiety with anger) (Cassady and Justin,2008).

Step 3: Goal Articulation

Once the individual has interpreted the social and personal cues in the emotional event, Goal Articulation takes place – again relying on a bidirectional relationship with the knowledge base. Goals orient the individual toward producing specific outcomes. Reference to the knowledge base in this step allows the individual to refer back to past situations as well as examine social and cultural acceptance for specific goal frameworks .The knowledge base also maintains domain knowledge useful for helping people establish "good goals" – those that are more likely to promote positive behavioral action and self-regulation(Cassady and Justin,2008).

Step 4: Response Selection and Prediction

In this step, the person examines her interpretation of the situation, considers the goal that has been established for the situation, and generates viable solutions that will meet the goal within the situational parameters. Once again, reference to the personal knowledge base is an essential act that largely determines the differential efficacy of coping responses . by individuals with high and low levels of EI. Those with high EI will have an involved base of social and cultural knowledge to help determine effective solutions for specific contexts, a repository of potential solutions to choose from, and the ability to weigh the potential outcomes for selected responses(Cassady and Justin,2008).

Step 5: Enactment

The final step in the model involves carrying out the selected response or coping strategy. the enactment of the solution naturally changes the emotional situation (both internal and external representations). In a recursive cycle, individuals then re-enter the EIP model at the Encoding step to determine the efficacy of the chosen solution, the change in emotional

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state caused by the coping strategy, and the current needs facing the individual(Cassady and Justin,2008).

As Cassady and Justin,(2008) put it "We believe the proposed Emotional Information Processing model serves to frame our understanding of how individuals receive, interpret, and use emotional information. Furthermore, the EIP provides a frame of reference for explaining how specific coping strategies are adopted, and determining why those strategies are selected by individuals".

The purpose of the present study was to examine the extent to which Cassady and Justin's Functional Model for Emotional Information Processing can be used to improve social competence of first grade children with ADHD. The primary research question was, what effects will Cassady and Justin's Functional Model for Emotional Information Processing have on social competence of first grade children with ADHD?.

Method

Participants

10 first graders primary who had been identified as having ADHD using Attention-Deficit Hyperactivity Disorder Test (ADHDT) (Jeong, 2005) and were experiencing social problems were chosen .These children were from two primary schools located in Baltim Edara, Kafr EL Sheik, Egypt. The sample was randomly divided into two groups; experimental (n= 5 boys) and control (n=5 boys).These two groups were matched on age, IQ, and Social Competencey. Parental informed consent forms were sent home by the school director and school psychologist to parents of potential participants telling them about the study and requesting them to give permission for their children to participate. Each child also had the following characteristics: (a) meet the full criteria for ADHD using Attention-Deficit Hyperactivity Disorder Test (ADHDT) (Jeong, 2005) (b) deficits in social competency depending his score on Social Competency Rating Form.

Instrumentations

Attention-Deficit Hyperactivity Disorder Test (ADHDT) (Jeong, 2005). To support evidence of criterion validity related to the questionnaire developed based on DSM-IV-TR criteria, the Attention-Deficit Hyperactivity Disorder Test (ADHDT) was employed. ADHDT is based on the DSM-IV. This instrument consists of three categories: Hyperactivity (13 items); Impulsivity (10 items); and Inattention (13 items). The items use a 3-point Likert scale with 0 representing no problem, 1 representing a mild problem, and 2 representing a severe problem. The author reported reliability with Cronbach.'s alpha coefficient. Cronbach alphas for hyperactivity, impulsivity and inattention were .98, .95, and .98 respectively for teacher ratings.

Social Competency Rating Form. (Gottfredson et al., 2002). The revised scale consists of 29 items, with 12 negatively worded items and 17 positively worded items. Sample items include: Hits, kicks at, or jumps on other children; If provoked by peers, shows self-control; Solves problems with peers through compromise or discussion; and Expresses concern for others. It has three subscales ; namely Social Skills , social behaviour and impulsivity .All items are answered on a 4-point Likert-type scale, with a 1 indicating "Almost Never", 2 indicating "Sometimes", 3 indicating "Often", and 4 indicating "Very Often.". A study by Allison(2007) shows an adaptation of the SCRF to be a reliable and valid measure for use with elementary school children.

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Procedure

ADHD in children was identified using Attention-Deficit Hyperactivity Disorder Test (ADHDT). Additionally, social competency was identified using Social Competency Rating Form .The assessment was done in an environment familiar to the children and during their usual intervention time. Treatment consisted of Emotional Information Processing using Cassady and Justin's Functional Model for Emotional Information Processing. The pretest scores were analyzed to ensure parity among the children .

Treatment group received 10 teaching sessions. The duration of each session would be 25-30 minutes. While treatment group children received training using Cassady and Justin's Functional Model for Emotional Information Processing ,the control group continued with their regular academic activities . At the completion of the treatment session, children from both groups were tested again on Social Competency Rating Form.

Design and Analysis

The effects of training using Cassady and Justin's Functional Model for Emotional Information Processing on social competence of first graders children with ADHD were assessed using Mann–Whitney U test, Wilcoxon signed-rank test, and Z Value .

Results

Cassady and Justin's Functional Model for Emotional Information Processing and development of Social Competency

The first objective of the study was to determine if use of Cassady and Justin's Functional Model for Emotional Information Processing training would be more effective for the treatment group compared to the control group .For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 1. shows Z Value results for the differences in post- test mean rank scores between experimental and control groups in Social Competency Rating Form. The table shows that (Z) value was (-2.739). This value is significant at the level (0.01) in the favor of experimental group .

Table 1. *Z Values results for the differences in post- test mean rank scores between experimental and control groups in Social Competency*

Variables	Groups	N	Mean Ranks	Sum Ranks	Mann-whiteny	Z Value	Sig
Social Competency	Ex	5	8	40	Zero	-2.739	0.01
	Cont.	5	3	15			

The second objective of the study was to determine the effect of Cassady and Justin's Functional Model for Emotional Information Processing on the development of Social Competency in first graders children with ADHD. The treatment consisted of Cassady and Justin's Functional Model for Emotional Information Processing training. The children's performance on Social Competency was measured pre and post intervention. Table 2 shows Z Value result for the differences in pre-post- test mean rank scores on Social Competency. The table shows that (Z) value was (-2.041). This value is significant at the level (0.01).This indicates that use of Cassady and Justin's Functional Model for Emotional Information

Processing training had a positive effect on the development of Social Competency in first graders children with ADHD.

Table 2. *Z Values results for the comparison of mean rank scores of experimental group at pre- and post intervention in Social Competency*

Variables	Negative Ranks		Positive Ranks		Z Value	Sig.
	Mean	Sum	Mean	Sum		
Social Competency	3	15	Zero	Zero	-2.041	0.01

Discussion

The present study evaluated the effects of Cassady and Justin's Functional Model for Emotional Information Processing on the development of Social Competency in first grade children with ADHD. The study results showed that Cassady and Justin's Functional Model for Emotional Information Processing training was effective in increasing Social Competency of all children participated in this study. The Emotional Information Processing developed for the study was written according to the Cassady and Justin's Functional Model for Emotional Information Processing (2008).

The scenarios used in this training were effective and this was interesting , as Cassady and Justin (2008) put it " we believe an Emotional Information Processing (EIP) model may be a useful tool to observe, explain, and predict human agency in response to emotional scenarios….. we view this proposed framework as a meaningful mechanism through which diverse bodies of literature can be examined to explore the functional relationships among emotional intelligence, cognitive processes, and self-regulation.".(p.28).

The present study contributes in several ways to the effectiveness of Emotional Information Processing (EIP) model literature. First, findings from this study demonstrate the potential benefits of using the Emotional Information Processing (EIP) model intervention as the sole intervention to increase the social competency of first graders children with ADHD. Second, this is the first experimental study to be conducted on Cassady and Justin's Functional Model for Emotional Information Processing

Furthermore, the children in this study did not receive any type of reinforcement or behavior modification strategies while participating in the sessions. Removing strategies such as prompting techniques, token systems, and other reinforcement systems reduced the potential for confounds within the study. Therefore, one can conclude that the social story intervention was primarily responsible for the change in the social skills of children participated in the study .

In summary, Cassady and Justin's Functional Model for Emotional Information Processing training effectively increased the Social Competency of all children participated in this study. Overall, results from this study contribute to the Emotional Information Processing (EIP) model literature for improving the Social Competency in first grade children with ADHD.

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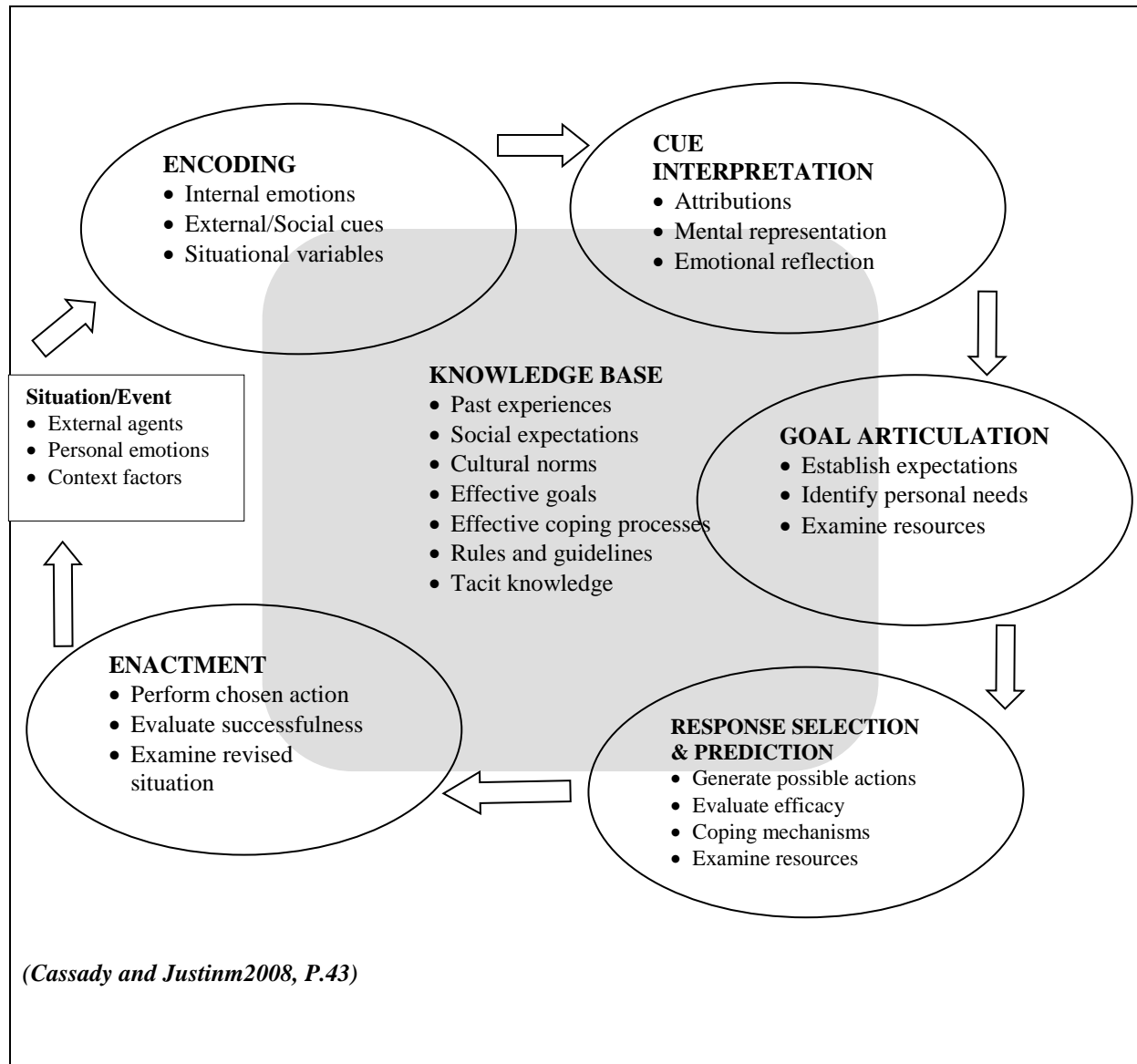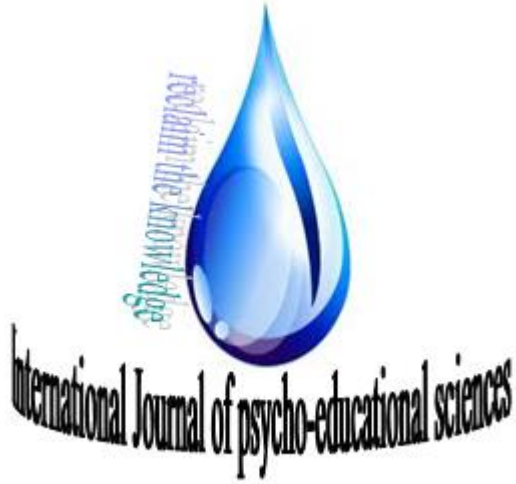
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Figure 1. Emotional Information Processing Model

The Relationship between Teachers' Perception of School Principals' Instructional Leadership and Organisational Commitment Level[9]

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Abstract

The purpose of this research is to determine the relationship between teachers' perception of school principals' instructional leadership and organizational commitment level. Correlative investigation model was adopted in the research. Study group of this research is composed of 329 voluntary teachers. "The instructional leadership behaviors of school principals' scale" and "The organisational commitment scale" were used to collect data. Descriptive and probative statistical techniques were used. In the results of the research; it is found that determination and sharing school purposes by school principals were at the highest, teacher support and development were at the lowest level according to the views of teachers. The views of teachers concerning school principals' instructional leadership behaviors showed significant differences in all dimensions according to age factor, working period in the same school showed significant differences in all dimensions except for determination and sharing of school purposes dimension. Teachers showed affective commitment at the highest and normative commitment at the lowest level. Teachers' views concerning school commitment showed significant differences in affective commitment dimension according to gender and educational situation; affective and normative dimensions according to age and working period in school factors. It was found out that there were positive and medium level significant correlations in all dimensions of School Principals' instructional leadership behaviors and teachers' affective and normative commitment. Perception of teachers concerning school principals' instructional leadership behavior is high in all dimensions; their school commitment is good in the affective commitment and this perception is medium in the other dimensions. There were medium level and positive correlation between normative commitment and affective commitment with perception of teachers concerning school principals' instructional leadership behavior. The causes of the low commitment levels of the teachers should be examined by a qualitative research to push teachers' organizational commitment to higher level. Causative comparative research can be done to clarify the effect of the instructional leadership to the teachers' commitments.

Keywords: Leadership, commitment, teacher, school, principal

Introduction

School is one of the important educational institutions in human life. Hence, a lot of things from actualization of the learning to characterization of someone are offered to students in schools by teachers and principals. Principals and teachers are responsible for keeping school steady as proper for purposes of school and educational system. Yet, nowadays principals' and teachers' duties become more complex day by day. In this chaotic setting, expectations of shareholders of the school raised compared to past. Principals cannot provide the sustainable management with their management skills alone. Self renovating of schools and shaping the future are dependent to principals' leadership. For this reason, school principals should exhibit contemporary leadership behaviors to manage their schools effectively and beneficially and to commit their staff with organisation.

School principals' leadership behaviors which they perform against people whom they are in interaction have substantial role to fulfill the purposes of the school. Instructional leadership that was revealed by effective school studies done especially after 1980's (Bickel, 1983; Cuban, 1984) became the most expected behavior from the principals (Hallinger, 2005). Since, school principals as instructional leaders must focus on the teaching and learning process to form effective schools (Hallinger & Murphy, 1986; Hallinger & Heck, 1998). Thus, a school principal can coordinate all the existing resources of the school skillfully, takes

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under control, inspects them to actualize educational purposes of the school and also provides required conditions (Hallinger & Murphy, 1985). So, instructional leaders have knowledge, implementations to make learning and teaching easier, an impact to motivate people (Spillane & Diamond, 2007). Actually, instructional leaders are aim-oriented relatively other leaders and focus on students' academic success. Hence, instructional leaders try to create a school culture including high expectations and standards for both teachers and students, in addition they move cooperatively with the shareholders of school and try to keep their motivation high, care about teamwork and rewarding (Blase & Blase, 1999; Niqab, Sharma, Wei, & Maulod, 2014). Instructional leadership behavior has been examined by different researchers (Murphy & Hallinger, 1987; Murphy, 1990) in sense of different scales. However, those scales were similar to each other and include factors to make school effective.

In this study, school principals' instructional leadership scale developed by Sisman (2004) and used by a lot of researchers (Aytekin, 2014; Ozkaynak, 2013 etc.) in Turkey, is examined under five sub-scales as (1) determination and sharing of school purposes, (2) management of curriculum and teaching process; (3) evaluation of teaching process and students; (4) teacher support and development and (5) creation of regular teaching-learning environment and climate. As is seen, instructional leadership contains other functions contributing to learning process of the student included instructional leadership behaviors and focuses on learning and related directly to education (Murphy, 1990). Thus, school principals' instructional leadership behaviors can be in a relationship with the school staff especially with teachers' commitments (Ail, Taib, Jaafar, Salleh & Omar, 2015; Niqab et al., 2014). Organisational commitment, taken part in modern management concepts and subjected to many researches (Eslami & Gharakhani, 2012; Yuksel, 2015 etc.) concerning especially organisational behavior recently, reflects attitudes and behaviors of employee against his/her organisation (Zeinabadi, 2010). Organisational commitment is actually mutual changes between person and organisation and the adoption of the organisational process by employees. Hence, as an organisation, organisational commitment in school can be provided by all shareholders as accepting the purposes of the school like their own and working with others and internalizing them and revealing their secret powers voluntarily to reach these purposes.

In the literature, organisational commitment was held by different researchers (Allen & Meyer, 1990; Hrebiniak & Alutto, 1972; O'Reilly & Chatman 1986 etc.) by different scales and in this research, it was examined with its organisational commitment sub-scales; (1) affective commitment, (2) continuance commitment and (3) normative commitment that were developed by Allen and Meyer (1990) who were mentioned a lot in the literature. This commitment can be in a correlation with its components and with school principals' instructional behaviors that they perform individually. Hence, cooperation between administers and teachers that can cause mutual effects for education, fortification, teamwork, constant improvement studies, can cause changes in commitments of teachers (Anderman et al., 1991; Marks & Printy, 2003).

Commitment feeling that teachers have to school is vital to make school reach their purposes, in forming effective schools. School principals have a critical role for the creation of this commitment sense (Razak, Darmawan, & Keeves, 2009). Determination of how teachers perceive instructional leadership behaviors that school principals exhibited in the elementary schools which is the key point of primary education and revealing this perception's correlation with organisational commitment are seen as important. As the number of studies directly subjected to correlation between elementary school teachers' perception of school principals' instructional leadership behaviors and school commitment level is relatively limited, it is thought that this study will make contribution to literature.

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Moreover, it is hoped that revealing this correlation can be beneficial for policy makers and practitioners for taking necessary pre-cautions. Hence, the purpose of this research is to determine the relationship between perceptions of elementary school teachers concerning school principals' instructional leadership behaviors and school commitment. To this aim, answers have been sought for the following questions:

1. What is teachers' perception of school principals' instructional leadership behaviors and their school commitment level?
2. Do teachers' perception of school principals' instructional leadership behaviors and school commitment levels differ according to demographic factors (gender, age etc.)?
3. Is there any significant relationship between teachers' school commitment level and their perception concerning school principals' instructional leadership behaviors?

Methods

Research Design

Correlational investigation model was used in this research with the purpose of revealing the perception of teachers concerning school principals' instructional leadership behaviors, their school commitment levels and revealing the correlation between them (Peers, 2006). With this design, the existence of the changes has been revealed between these two factors.

Research Sample

Target population of the study consists of totally 399 teachers who worked in Söke district of Aydın city in 2013-2014 academic year. Researchers tried to reach the target population due to relatively smallness of the target population of the study and problems could be occurred in feedback process and unproper fulfilling. So 329 voluntary elementary school teachers attended to research and researchers worked with 326 proper data collection tool. Voluntary teachers were the working group of this research.

Participants of the research were as follows; 60.4% are female (n=197), 39.6% are male (n=129); 80.7% are married, (n=263); 19.3% are single (n=63); 17.8% are at the age of 30 and under (n=58); 36.5% are between the age of 31-40 (n=119), 27.9% are between the age of 41-50 (n=91), 17.8% are over the age of 51 (n=58); 81.6% are composed of primary teachers (n=266), 18.4% are branch teachers (n=60); 56.7% have been working in the same school for 5 and less (n=185), 25.8% have been working in the same school for 6-10 years (n=84); 17.5% have been working for 11 years and more in the same school (n=57); 76.4% are graduated from faculty of education (n=249), 5.5% are graduated from faculty of arts and science (n=18), 2.8% have master degree (n=9) and 15.3% are graduated from other faculties (n=50).

Research Instruments and Procedures

In this study "The Instructional Leadership Behaviors of School Principals Scale" (Sisman, 2004) and "Organisational Commitment Scale" (Meyer and Allen, 1991) were used as data collection tools.

The instructional leadership behaviors of school principals scale: The instructional leadership behaviors of school principals scale is a 5 point likert scale [Never (1)- Always (5)] which was developed by Sisman (2004) and consists of 5 sub-scales, includes 10 items each, and totally 50 items. These sub-scales are (1) determination and sharing of school purposes (DSSP), (2) management of curriculum and teaching process (MCTP), (3) evaluation of

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teaching process and students (ETPS), (4) teacher support and development (TSD), (5) creation of regular teaching-learning environment and climate (CRTLEC). Cronbach's Alpha level was calculated as .94 for the overall of the scale in reliability study of the research. Cronbach's Alpha level of the factors was calculated as between .93 and .96 while Sisman (2004) calculated Cronbach's Alpha level as .92 in his work.

Organisational commitment scale. The organisational commitment scale is a 5 point likert scale [I totally do not agree (1)- I totally agree (5)]. It consists of three sub-scales, each of which has six items, and totally 18 items. This sub-scales are (1) affective (AC), (2) continuance (CC), (3) normative (NC) commitments. Four items of the scale were coded reversely. The scale was adapted to Turkish by Baysal and Paksoy (1999). Researchers stated that reliability coefficient was .81 and this scale could be used in three sub-scales for the studies that will be used in Turkey. Cronbach's Alpha level was calculated as .72 in the reliability study of this research and Cronbach's Alpha level of the sub-scales were calculated as between .60 and .75.

Data Analysis

In the analysis of data, considering research's sub-problems and the features of collected data; frequency, percentage, average, standard deviation were used. Also, parametric tests (t- Test, ANOVA, LSD test) were used in case of normal distribution of data, on the other hand non-parametric tests (Kruskal Wallis, Mann Whitney U test) were used in case of abnormal distribution ($n < 30$) and lastly Pearson Moment's Correlation analysis tests were used (Peers, 2006).

Results

Findings of the study are given on the following tables as instructional leadership, organisational commitment and relationship between them.

Findings Concerning Perception of Teachers' Concerning School Principals' Instructional Leadership Behaviors

The result of the analysis was summarized on Table 1 related to perception of teachers' concerning school principals' instructional leadership.

Table1. *Descriptive statistics related to perception of teachers' on school principals' instructional leadership behaviors*

Dimensions	n	Mean	S.D.
DSSP		4.00	.795
CRTLEC		3.94	.869
MCTP	326	3.91	.816
ETPS		3.85	.824
TSD		3.47	.919

As is seen on Table 1, teachers perceived "determination and sharing of school purposes" at the highest level, "teacher support and development" at the lowest level in the scale of principals' instructional leadership behaviors. Teachers perceived that principals exhibit instructional leadership behaviors in all sub-scales "most of the time". Perception of teachers does not show a significant difference concerning School Principals' Instructional Leadership Behavior according to gender, educational level, marital status, and job status, but shows significant differences according to age and working period in the same school.

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Perception of teachers concerning school principle's instructional leadership behaviors shows a significant difference in all dimensions according to their ages. It is determined by the LSD test that teachers who are at the age of 30 and less (M=3.74; S=.85) have significantly lower perception than aged 41-50 (M=4.18; S=.66) and aged 51 and above teachers and teachers who aged 31-40 (M=3.96; S=.66) have significantly lower perception than the teachers who belong to group of aged 41-50 concerning the determination and sharing of school purposes [$F_{(3;322)}$ = 4.051; p<.05)]. Teachers who are at the age of 30 and less (M=3.59; S=.86) have significantly lower perception than aged 31-40 (M=3.85; S=.87), aged 41-50 (M=4.07; S=.71) and aged 51 and above (M=4.12; S=.72) and teachers aged between 31-40 have significantly lower level perception than aged 51 and above concerning the perception of management of curriculum and teaching process [$F_{(3;322)}$ = 5.775; p<.05)]. Teachers who are at the age of 30 and less (M=3.60; S=.85) have significantly lower perception level than the teachers aged 41-50 (M=3.93; S=.81) and aged 51 and above. Teachers aged 51 and above have significantly higher perception levels than teachers aged 31-40 (M=3.83; S=.84) and 41-50 concerning evaluation of teaching process and students [$F_{(3;322)}$ = 3.066; p<.05)]. Teachers who are at the age of 30 and less (M=3.16; S=.93) have significantly higher perception levels than teachers aged 31-40 (M=3.39; S=.96), aged 41-50 (M=3.63; S=.85) and aged 51 and above (M=3.70; S=.84). Teachers who are at the age of 31-40 have significantly lower perception levels than teachers aged 41-50 and aged 51 and above. Teachers at the age of 51 and above have significantly higher perception levels than the teachers who are at the age of 41-50 concerning teacher support and development [$F_{(3;322)}$ = 4.846; p<.05)]. Teachers who are at the age of 30 and less (M=3.66; S=.95) have significantly lower perception levels than teachers aged 41-50 (M=4.09; S=.73) and aged 51 and above concerning creation of regular teaching-learning environment and climate [$F_{(3;322)}$ = 4.261; p<.05)].

Perception of teachers concerning school principals' instructional leadership behaviors show significant difference in all dimensions except for determination and sharing of school purposes, according to working period of teachers in the same school. It is determined by the LSD test that teachers who worked for 11 years and more for same school (M=4.19; S=.66) have significantly higher perception level than teachers who worked for 6-10 (M=4.15; S=.77) for the same school and teachers who worked 5 years for the same school and less concerning management of curriculum and teaching process [$F_{(2;323)}$ = 4.162; p<.05)], and teachers who worked for 11 years and more (M=4.15; S=.70) for the same school have significantly higher perception level than teachers who worked 6-10 years (M=3.76; S=.81) and teachers who worked 5 and less (M=3.80; S=.85) for the same school concerning evaluation of teaching process and students [$F_{(2;323)}$ = 4.647; p<.05)], teachers who worked 11 years and more (M=3.79; S=.81) for the same school have significantly higher perception level than teachers who worked 6-10 years (M=3.32; S=.92) and teachers who worked 5 years and less (M=3.44; S=.91) for the same school concerning teacher support and development [$F_{(2;323)}$ = 4.756; p<.05)], teachers who worked 11 years and more (M=4.23; S=.68) for the same school have significantly higher perception level than teachers who worked 6-10 years (M=3.86; S=.77) and teachers who worked 5 years and less (M=3.88; S=.95) for the same school concerning creation of regular teaching-learning environment and climate [$F_{(2;323)}$= 4.152; p<.05)].

Findings Concerning Elementary School Teachers' School Commitment Level

The result of the analysis concerning teachers' school commitment level is summarized on Table 2 below.

Table 2. *Descriptive statistics concerning teachers' school commitment level*

Dimensions	n	Mean	S.D.
AC		3.47	.811
CC	326	2.86	.674
NC		2.78	.654

When Table 2 is examined, it is seen that teachers show commitment in "Affective" dimension at the highest level, then "Continuance" and the last "Normative" dimension in order. It was determined that affective commitment of the teachers was seen in good level, and other commitment sub-scales was seen in average level. Teachers' organisational commitment does not show significant difference according to their duties and marital status but shows a significant difference according to teachers' gender, age and working period in the same school.

Teachers' affective and normative commitment levels do not show a significant difference. Nevertheless, female teachers' (M=2.93; S=.86) continuance commitment [$t_{(324)}$ = 2.232; p<.05] is higher than males' (M=2.76; S=.66). Teachers' affective [$F_{(3;322)}$ = 4.304; p<.05] and normative commitment [$F_{(3;322)}$ = 4.384; p<.05] levels show a significant difference according to age; while there is not a significant difference according to age variable in continuance commitment. According to LSD test, teachers who are at the age of 30 and less (M=3.34; S=.76) and teachers aged 31-40 (M=3.32; S=.82) have significantly lower affective commitment perception level than teachers aged 41-50 (M=3.60; S=.76) and aged 51 and above (M=3.70; S=.82). Normative commitments of the teachers who aged 51 and above (M=3.03; S=.77) have significantly higher than teachers who are at the age of 30 and less (M=2.73; S=.58), teachers aged 31-40 (M=2.67; S=.65) and teachers aged 41-50 (M=2.81; S=.59).

Teachers' affective [$F_{(2,323)}$=15.036; p<.05)] and normative [$F_{(2, 323)}$ = 4.701; p<.05)] commitment levels show a significant difference according to working period in the same school, while it does not in continuance commitment level. According to LSD test, teachers who worked 5 years and less for the same school (M=3.27; S=.81) have significantly low affective commitment than teacher who worked 6-10 years (M=3.68; S=.78) and 11 years and more (M=3.81; S=.67) for the same school. Normative commitment of the teachers who worked 11 years and more (M=3.02; S=.74) for the same school is found significantly higher than teachers who worked 5 years and less (M=2.74; S=.63) and 6-10 years (M=2.72; S=.62) for the same school.

According to the educational situation of the teachers, there is a significant difference in the average of ordinal numbers belong to affective (χ^2= 8.40; p<.05) commitment level. According to the results of the Mann-Whitney U test done to find the source of the difference; affective commitment level of teachers graduated from different faculties (χ^2=196.74) is significantly higher than teachers graduated from faculty of education (χ^2=158.86) and techers having master degree (χ^2=127.06).

Findings Concerning Correlation Between Teachers' Perception About Instructional Leadership Behavior and School Commitment Level

Relationship between teachers' perception about school principals' instructional leadership behaviors and school commitment level is examined and results are summarized on

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Table 3. *Correlation coefficient results between teachers' perceptions about principals' instructional leadership behaviors and school commitment level*

Dimensions	1	2	3	4	5	6	7	8
1. AC	-							
2. CC	-.052	-						
3. NC	.353[**]	.275[**]	-					
4. DSSP	.302[**]	.002	.347[**]	-				
5. MCTP	.356[**]	-.031	.370[**]	.874[**]	-			
6. ETPS	.340[**]	.002	.334[**]	.806[**]	.879[**]	-		
7. TSD	.313[**]	.036	.340[**]	.719[**]	.792[**]	.805[**]	-	
8. CRTLEC	.360[**]	-.008	.319[**]	.819[**]	.857[**]	.817[**]	.812[**]	-

[**]$p < .01$

As is seen on Table 3, there is a positive and medium level significant correlation between teachers' normative commitment and affective commitment; and a positive and low significant correlation between normative and continuance. There is a positive and medium level significant correlation between affective and normative commitment with instructional leadership behaviors. It is seen that affective commitment has the highest relationship with creation of regular teaching-learning environment and climate relatively ($r=.360$; $p< .01$). Normative commitment has higher correlation with the management of curriculum and teaching process relatively ($r=.370$; $p< .01$). Teachers' perceptions have positive and high level correlation with principles' instructional leadership behaviors. Relatively the highest relationship is between education program and management of teaching process and evaluation of teaching process and students ($r=.879$; $p< .01$).

Discussion and Conclusion

The purpose of the study is to determine the relationship between teachers' perception of school principals' instructional leadership and organisational commitment level. Teachers' perceptions about "determination and sharing of school purposes" is at the highest level, and "teacher support and development" at the lowest. Ail et al., (2015); Aytekin (2014) reveled similar results and they found "determination and sharing of school purposes" at the top level. Researchers like Aytekin (2014), Ozkaynak (2013) found "teacher support and development" at the lowest level. According to teachers, school principals show instructional leadership behaviors most of the time. Yuce (2010) obtained the same results in his study.

It is crucial that teachers perceived "determination and sharing of school purposes" at the highest level concerning school principals' instructional leadership behaviors. It is an important indicator that principals create a vision for their schools, have purposes for their school and they are pioneers to share these purposes, and teachers realize this situation (Hallinger & Heck, 1998). Hence, other processes in the school keep steady based on the determination and sharing of school purposes (Cross & Rice, 2000). According to Hallinger & Murphy (1985), school principals should provide the comprehensiveness of these purposes and they should review them periodically. Yet, they should provide parents' contribution and employee who worked for improvement and setting of these purposes (Khoza, 2012). Actually, setting and sharing of purposes performed by school principals are substantial tools to provide collaboration of parents, students and teachers.

In the current study, teachers perceived school principals' instructional leadership behavior concerning teacher support and development at the lowest level which is challenging

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when compared to other instructional leadership behaviors. As teachers may think that their principals do not support them adequately and provide adequate opportunities for improvement and exhibit a sharing leadership. Whereas, an instructional leader should be the guide for teacher support and development (Glickman, 1985; Marks & Printy, 2003). Principals should provide opportunities for teachers' improvement (Blase & Kirby, 2000, Kıral, 2015), improve effectiveness of the teachers who contribute students' learning process (Hallinger & Heck, 1998), help them in order to improve their capacities (Harris, 2004) and help them for professional careers (Blase & Blase, 1999). Principals should create a suitable school climate for change and development. They should provide the motivation of their staff and help teachers for using educational sources, and should know the weaknesses and strong sides of their staff about using sources (Celik, 2003, Kıral, 2016). Also, Nayir (2012), and Gündoğdu and Yıldırım (2010) found that school principals strongly affect the nature and level of organizational commitment in schools. In brief, an instructional leader should be holistic concerning education and should examine it at all aspects.

Perceptions of teachers showed significant difference concerning principals' instructional leadership behaviors according to age and working period in the same school factor. Same results are obtained in the study of Aksoy (2006). According to age, teachers' perception concerning principals' instructional leadership behaviors shows significant differences in all dimensions. Younger teachers have lower perception of instructional leadership behavior than older ones. With the rising ages, teachers consider more that their principals are more sufficient. Teachers who had higher service years in the same school have significantly higher perception level in all dimensions in which difference is observed, than the teachers who had lower service years in the same school. It can be thought that teachers perceive their principals' instructional leadership behaviors better and they can observe it better over time as their period of service gets longer.

It was found that teachers show "affective commitment" at the highest level among all dimensions of organisational commitment and then continuance and normative commitment follows. It was found out that the dimension which is stated at the highest level is similar in the studies of Besiroğlu (2013), Kıral & Kacar (2016), while the dimension which is stated at the lowest level is similar in the study of Tezcan (2010). In this study, affective commitment dimension is relatively high but other dimensions are medium level. Meyer & Allen (1984) found normative commitment as high, affective and continuance commitment as medium; Dee, Henkin & Singleton, (2006) found organisational commitment as high. In this study, high affective commitment levels of teachers can be an important indicator explaining that as teachers's working length in schools rises, they love the school, work for success of it; they are happy with it and satisfied with their own profession (Currivan, 1999; Allen & Meyer, 1993). Hence, affective commitment is an expected component of overall commitment and wanted by management of organisation. Individuals who show more commitment to their organisation and their profession, show better performance for organisation's effectiveness. Other commitment components' levels are relatively medium and even if this may show that teachers behave purposively for school's purposes and targets, it can actually be an important signal for the problems which can be occurred when individual values and organisational values face each other and an important signal for lack of harmony with the school.

Organisational commitment levels of teachers show significant difference according to their gender, age and period of service in the same school. It was found out that female teachers have significantly higher continuance commitment than males, but there is no significant difference in other dimensions. Female teacher's having higher levels of education inspite of many difficulties, community stereotype that teaching in elementary school is

relatively suitable for women and the difficulty of finding opportunities in another profession compared to primary school teaching may be signals that female teachers do not give up their organisation easily. There are studies arguing that gender creates a significant difference in organisational commitment (Dee &et al., 2006; Mathieu & Zajac, 1990) as well as gender does not in some others (Ail et al., 2015; Currivan, 1999).

It was found out that older teachers have higher affective and continuance commitment than younger ones. It can be said that teachers integrate with their school and they are in harmony with it in time. A person's working in the same school for long years, his/her integration and struggles can be the reasons of high level affective commitment; while on the other hand, decreasing job opportunities due to the age, absence of new job opportunities, lack of courage due to age even if job opportunities appear, can be the reasons of high level continuance commitment. Similarly, there are studies indicating that commitment improves with the rising age (Balay, 2000; Mathieu & Zajac, 1990). Also, there are some studies which expressing different results concerning the relationship between age and organisational commitment (Besiroğlu, 2013; Dee et al., 2006).

Teachers having longer period of service have higher affective and normative commitment than teachers having less. Time spent in an organisation has positive effects on a person's organisational commitment. It can be said that teachers feel more responsible about activities to be done and strive more for school's purposes and coalesces with the school by their increasing period of service in the school. There are studies suggesting relationship between organisational commitment and period of service (Dee et al., 2006; Mathiuge & Zajac, 1990) while some suggesting no relationship between organisational commitment and period of service (Uysal, 2014; Kıral & Kacar, 2016).

It was found that, teachers graduated from faculty of education and having master degree have significantly high affective commitment, but there is no significant difference in other dimensions. As literature investigated, it is seen that there are some studies concerning educational situation does not create a significant difference (Balci, 2009; Mowday et al., 1979) as well as some others concerning that educational situation creates a significant difference (Currivan, 1999; Kıral & Kacar, 2016). As the reason of this revealed difference, it can be thought as people who graduated from other faculties in spite of different challenges (KPSS, education of formation) have bigger adaptation to teaching profession and school.

Normative commitment of teachers has positive and medium correlation with affective commitment, low level correlation with continuance commitment. It was determined that there is positive and high level correlation between teachers' perceptions of school principals' instructional leadership behavior. The highest correlation is stated between the determination and sharing of school purposes and evaluation of teaching process and students relatively. It was determined that there is positive and medium level correlation between teachers' perception of school principals' instructional leadership behavior with affective and normative commitment level. Affective commitment has the highest correlation with the creation of regular teaching-learning environment and climate, normative commitment has the highest correlation with management of curriculum and teaching process. Ail et al., (2015), Anderman et al. (1991), Balci (2009), Currivan (1999) state the similar results in their studies but Cevahiroğlu (2012) states different results. Ail et al. (2015) found medium level positive correlation between commitment and instructional leadership generally. Teachers having higher school commitment correlation strive more, at the same time they improve their performance to higher level (Dikmen, 2012).

Teachers, who have high school commitment, fulfill the duties given by the principal eagerly, respond expectations and directives immediately, and are satisfied with their job.

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School principals' instructional leadership affects both individuals and existing school system (teachers, students and parents etc.) (Hallinger & Heck, 1998). An instructional leader is in a social interaction with the shareholders in the school. Instructional leader should reveal his/her personal sources effectively like responsibility, cooperation and commitment. School principal can not be successful if teachers have no commitment to school. Thus, principals need to show instructional leadership behaviours especially towards teacher support and development of teachers (Niqab et al., 2014). As the harmony level of employee purposes and the purposes of the organization rises, employee commitment rises, too (Mowday et al., 1982).

Recommendations

Principals always need to show instructional leadership behaviors and this should be observed by the teachers. For this reason, administrators and teachers should be trained about this subject. Relatively younger teachers and teachers who have worked in the same school less generally have lower perceptions of instructional leadership. So, the reasons of this can be studied by a qualitative research. Trainings can be implemented for principals and teachers to raise teachers' organisational commitment. Male teachers have less continuance commitment, young teachers and teachers who come from other faculties have higher affective commitment. So, the causes of these issues can be investigated by a qualitative research. Causative comparative researches can be done concerning what is the effect of instructional leadership in the revealed relationship between teachers' commitments and the instructional leadership perception.

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