Comparison of motor-perceptual abilities among 7-10 aged female students in urban & rural elementary schools of Shoushtar

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ABSTRACT

Goal: the goal of this research is comparison of motor-perceptual abilities (including overall static coordination subset, overall dynamic coordination, dynamic hand coordination, motor speed (fast-moving), symmetric & simultaneously optional movements & asynchronous & non-symmetric optional motions) among 7-10 aged female students in urban & rural elementary schools of Shoushtar. Method: the method of this research was descriptive ones & using Lincoln-Oseretsky motor development test. the numbers of subjects were 180 persons for which Shoushtar was divided in to the 3 parts in each part, there was 1 urban elementary school & 1 rural elementary schools that selected randomly & among these schools randomly 90 students from urban schools & 90 students from rural schools that they were 7-10 years old. The tools measurement was Lincoln-Oseretsky motor development test that included 6-subsccales & 36 articles. Validity & reliability of this test was reported successful in different researches, after running above test was used proper statistical methods such as; t-test for surveying & comparison among students in 2 areas in the $\alpha=0.001$ level. Findings: the hypothesis test in $P \leq 0.05$ level showed that, in at all, the level of motor-perceptual abilities in students in first to fourth grades of rural elementary schools were better than urban areas. There were different significant among subscales, dynamic hand coordination, asynchronous & non-symmetric optional motions in rural & urban children while there were not different significant among skills of overall static coordination, overall dynamic coordination & symmetric & simultaneously optional motions among rural & urban female students. Discussion: the difference between motor-perceptual abilities among urban & rural students is a warning for attention & prevention of retardations; motions, perceptual, cognitive, academic & social &... So, paying attention to the motor-perceptual abilities growth & development among urban children & these students need to provide the various feeling of motor experiences & activities.

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INTRODUCTION

Human communications with all phenomenons of the worlds by various senses & know about each of them & after feeling it continues in recognizing the events & phenomenon & then communicate with them & finally interpreted about it [13]. So, acting caused to the human understanding the stimulus, motion provides the understanding & cognition (Mohammad, 2008).

Motion is the best sign of life motion in human life beings before birth & continues until the end of life, in fact, the most basic children’s behavioral responses which it i sensory-motor & muscular kinds. The child success to understand her/his perception of words by these motor, behavioral & these experiences were the basic of knowledge & learning & caused to children’s full development [16]. Motor experienced in the early aged. They key tenets of motor-perceptual (cognitive) development facilitate the perceptual ability development. A person must be dealing with mobility, experiential greatest possible range of motion in the early years of his/her life [25], so the elementary & elementary schools have most important rates because of these times, are considered as better time for overcome weakness, accurate & correct motions plan codification caused to the development & growth in the learning areas for obtaining higher experiences & as children loose these experiences, they will irreparable damage to them.. Therefore, this research is about the level of motor-perceptual abilities to understand which level our children are placed in motor-perceptual abilities development & second recognized the children who have weakness in it & for eliminating the weakness doing proper actions.

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Motor-perceptual development:
The word of motor-perceptual ability is a word that means movement & motion which needs to the understanding, recognition & need to decisions, some of the children’s developments in the skills depended to the their growth, development & their senses & understands. Gradually, children can select better information, understand & processed & integrated them as organization & coordinated them by their motor skills experiences. Most of them happened in childhood & then in the final period of childhood & adolescents refined subtly. Experts of growth believe, when motor-perceptual function were refined, it will be remained throughout adulthood [10].

Motor-perceptual abilities:
As you know; the growth of child’s motor abilities need to the growth & development of perceptual & physical abilities & motor-perceptual abilities & perceptual abilities includes cognitive behaviors & also mental-motor behaviors [9]. If the children’s motor experiences are more successful & richer, she/he will gain more self-awareness of his/her body position [12]. Approximately, each motor action that was done by one of sense is a motor-perceptual skill & it considered as motion that will be issued based on receivable information about environment & location. For example; the softball player tried to bring to mind the place must be thrown the ball & to whom throw & must feel the voice of ball on the ground & their bodies situation & their hand, these kind of sensory information will be obtained by players’ memory in the past experiences, so can be understand their world & placed their self in which kind of situations, so the visual-perception- the auditory sense & understanding motor sense understanding are so important in performing motor skills which to be pointed them [23].

The steps of motor-perceptual process:
1- Within the sensory: the first step was receiving the data from environment for creating motor-perceptual process. This information & data was necessary for motion & transferred by afferent nerves to the brain.
2- Sensory integration: the data is received & processed by brain. New information is combined with similar to the past experiences. Sensory integration included comparison between obtained information of current motions & saved in long-term memory.
3- Motor exposition (explanation): in this step, the motion will be selected based on emotional information combination with past experiences (from before step)
4- Motor activation: it means the process of data transformation from brain to muscles for making motion & movement.
5- Feedback: evaluating action by various sensory intermediate such as; visual, audition (hearing), touch & motion sensory, this step is the last step in this process, while there is not good adoption between basic motion data & obtained feedback data, so the similar provisory motion must be done.

Motor-perceptual system improvement:
There are 3 processes in motor-perceptual system improvement; first; the child released from touch sensory & motor-sensory receptors which come from environment & then they obtained their information by other informational receptors (especially by eyes).

Children confident to the some things that sense by touch receptors at beginning of their lives & they can design & done their motor reaction based on information which obtained by their eyes. Second; the children improve their abilities to complete the inside or within signs from 2 receptors of different systems, information which obtained by children obtained by children, are related to the audition & always related to touch of 1 & different things. Children can used several signs instead of replying to the issued signs. The related information to hit the ball is obtained by eyes & the motor reaction is coordinated by using voice & the motion will be done based on input signs. Finally, the children increased their abilities to the system & then they find minor differences between two signs. They can understand & sense different between the movement of the ball which hit or straight [23].

Vezen et al [15] did a research on “description of rural & urban children’s motor-perceptual function in first to third grades in elementary schools” & the population was selected randomly & they were 60 students (30 urban students & 40 rural students). The results showed that rural children have better perceptual function than urban children.

Balwinder Kaur studied on anthropometric & motor-perceptual abilities comparison among rural & urban sport female adolescents in Punjab & 34 persons (17 rural persons & 17 urban persons) in 15-17 years old selected randomly. The results showed that the girls of village were better than urban girls in weight & high & also in motor-perceptual functions.

Barnett [3] surveyed on relationship between motor-perceptual abilities in childhood & fitness in adolescence in Sydney. The sampling included 928 female & male students that more than half of them were girls (52.4 percents). Since it was long study so the samples were settled in 28 schools, the results showed that
there were positive & meaningful relationship between motor-perceptual abilities in childhood & fitness activity
in adolescence.

Josman [14] compared the motor-perceptual skills among Palestinian & Israeli children, the population included 101 Israeli children & 125 Palestinian children in kindergarten, first & second grades & experiment their motor-perceptual skills. The results showed that there were significant differences among these 2 groups. Israeli children have better than Palestinian children in motor-perceptual functions that can be noted the affects of environment in abilities.

Esmaeil Zadeh [7] studied “comparison of motor-perceptual abilities among rural & urban girls in first to third grades of elementary schools in Sarab. The population included 108 female students that 54 persons of them selected randomly from village & 54 persons from city & the Lincoln-Oseretsky selected for motorperceptual abilities. The results showed that environmental conditions have significant effects on motor-perceptual abilities that have more effects on third grades female students than other students.

Makkiyani [17] surveyed on the effects a rope competition in female students’ motor-perceptual abilities in third grades of elementary school in Dorud. The population included 60 persons that selected randomly & the divided into 3 groups rope group, control & traditional groups. Then these groups do this for 6 weeks & the traditional group did their routine exercise in the exercise hour & the control group didn’t do any exercise & physical activity & the motor-perceptual abilities were evaluated by Lincoln-Oseretsky test. The results showed that the rope has positive & meaningful effects on motor-perceptual abilities in rope group than traditional & control groups.

Sadat Emarati [24] surveyed on the effects of selected schools games on motor-perceptual development & social development in 8-9 years old girls in Tehran. The population included 48 persons that selected randomly & after doing motor-perceptual skills of Osersky’s test & social development, they were divided to two groups & after that school games were done on test group for 8 weeks & finally the posttest was done on two groups. The results showed that school games can be proper plans for motor-perceptual skills development need to planed & structured group activities.

Nasiri studied on 8 weeks effects of selected physical activities on male students’ motor-perceptual abilities in the third grades of elementary schools in Khor country. The population included 30 persons that selected from 39 schools & then divided them in to the two groups (15 persons in control group & 15 persons in experimental group). Then physical activities plan was done on them in 8 weeks. Based on the results of this research, the physical activities plan has the most important effects on students’ motor perceptual abilities.

Asemi & Darbaj studied on the effects of selected motor-perceptual abilities & late second-grade students’ academic achievement in Kerman. The population included 24 students whom were 8 years old that were selected randomly & divided in to the two groups; experimental group & control group & it was used Lincoln-Oseretsky test & self-made achievement test & was done in two steps; preliminary & final steps. The results showed that the selected plans have positive effects on motor-perceptual abilities development & academic development in test group.

Brahimi [5] described & compared the motor-perceptual abilities among rural & urban children, who they were 7-10 years old in Tabriz for this porpoise, were selected random cluster, 90 male & female students from five areas of Tabriz & 93 rural students from villages around Tabriz. Then subjects’ motor-perceptual abilities were measured by Lincoln-Oseretsky test, the results showed that the motor-perceptual abilities in rural children were meaningful more than urban children.

Norbakhsh [21] surveyed & compared the motor- perceptual abilities among female students in fifth grades of elementary schools in four areas of Ahvaz & the relationship between abilities & academic performance. Totally, 400 students (100 students from each area) were selected as (statistical) sample &Oseretsky’s motorperceptual test was used for measuring the motor development & their average used as academic performance. The results showed than female students’ motor-perceptual abilities in the 2 areas were better than other areas & there were positive & meaningful correlation among students’ academic performance.

MATERIALS AND METHODS

The descriptive methods &Lincoln-Oseretsky motor-perceptual development test are used for motor-perceptual abilities comparison among 7-10 aged female students in rural & urban elementary schools of Shoushtar.

The (statistical) population included all urban & rural female students in first to fourth grades of elementary schools in 212-13 in Shoushtar that based on statistic they were about 4186 persons in 18 urban schools & 10 rural schools & the statistical sample of schools selected randomly as 90 rural students & 90 urban students that totally they were 180 persons. For measuring of them was used Lincoln-Oseretsky motor development test, that was regulated in 1950 by Oseretsky& has 6 subscales & 36 articles. Oseretsky motor-perceptual test was used in most studies 7 its validity was reported the tests’ validity coefficient (validity) & durability (0.88) & (0.97) for female students in elementary schools. These coefficients were meaningful in P<0.05 level, & it was used in the
internal studies successfully Esmail Zadeh [7], Maykani [17], Ebrahimi [5], Vali, Jafari standardized the motor-perceptual test on students. The tests’ durability was reported 0.94 & its validity was 0.65 [21] & the internal consistency reliability coefficient was 0.76 which it was meaningful in P<0.05 level. For analyzing the data was used descriptive statistic methods such as; frequency, mean, standard deviation, Pearson correlation & different diagrams & for interpreting the data & statistical deductive were used on-way ANOVA for to being significant the motor-perceptual abilities in rural & urban areas & also t-test for determining & comparing the motor-perceptual abilities in these areas. For analyzing data was used SPSS 18 software (the meaningful level was considered P≤0.05).

Findings & Results:
First hypothesis: there was difference among motor-perceptual abilities among 7-10 aged female students in urban & rural elementary schools of Shoushtar.
For surveying this hypothesis was used t-test & also it used for comparing rates between students’ motor-perceptual abilities in rural & urban areas, regarding to the statistic test P=0.434 & t=-2.142 can be said that there was different significant among motor-perceptual abilities among 7-10 aged female students in urban & rural elementary schools of Shoushtar, so the first hypothesis was determined.

Table 1: t-test to compare the urban & rural students’ motor-perceptual abilities.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>80.46</td>
<td>-2.142</td>
<td>178</td>
<td>0.034</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>85.31</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Second hypothesis: there was difference between female students’ overall static coordination in first to fourth of elementary schools in rural & urban areas of Shoushtar.
For surveying this hypothesis was used t-test & also it used for comparing rates of overall static coordination of rural & urban areas, regarding to the statistic test P=0.527 & t=0.634 can be said that there was not different significant among rural & urban female students’ overall static coordination in first to fourth grades of elementary schools. So the second hypothesis was not determined.

Table 2: t-test to compare the overall static coordination of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>13.92</td>
<td>0.634</td>
<td>178</td>
<td>0.527</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>13.53</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Third hypothesis: there was difference between female students’ overall dynamic coordination in first to fourth of elementary schools in rural & urban areas of Shoushtar.
For surveying this hypothesis was used t-test & also it used for comparing rates of overall dynamic coordination of rural & urban areas, regarding to the statistic test P=0.661 & t=-439 can be said that there was not different significant among rural & urban female students’ overall dynamic coordination in first to fourth grades of elementary schools. So the third hypothesis was not determined.

Table 3: t-test to compare the overall dynamic coordination of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>11.47</td>
<td>-0.439</td>
<td>178</td>
<td>0.661</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>11.98</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fourth hypothesis: there was difference between female students’ overall dynamic hand coordination in first to fourth of elementary schools in rural & urban areas of Shoushtar.
For surveying this hypothesis was used t-test & also it used for comparing rates of overall dynamic hand coordination of rural & urban areas, regarding to the statistic test P=0.014 & t=-2.470 can be said that there was different significant among rural & urban female students’ overall dynamic hand coordination in first to fourth grades of elementary schools. So the fourth hypothesis was determined.

Table 4: t-test to compare the overall dynamic hand coordination of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>6.41</td>
<td>-2.470</td>
<td>178</td>
<td>0.014</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>7.27</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Fifth hypothesis: there was difference between female students’ motor speed (fast-moving) in first to fourth of elementary schools in rural & urban areas of Shoushtar.
For surveying this hypothesis was used t-test & also it used for comparing rates of motor speed (fast-moving) of rural & urban areas, regarding to the statistic test P=0.002 & t=-3.212 can be said that there was
different significant among rural & urban female students’ motor speed (fast-moving) in first to fourth grades of elementary schools. So, fifth hypothesis was determined.

**Table 5:** t-test to compare the motor speed (fast-moving) of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>10.43</td>
<td>-3.212</td>
<td>178</td>
<td>0.002</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>12.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sixth hypothesis: there was difference between female students’ symmetric & simultaneously optional motion in first to fourth of elementary schools in rural & urban areas of Shoushtar.

For surveying this hypothesis was used t-test & also it used for comparing rates of symmetric & simultaneously optional motion of rural & urban areas, regarding to the statistic test \(P=0.478\) & \(t=-0.711\) can be said that there was not different significant among rural & urban female students’ simultaneously optional motion in first to fourth grades of elementary schools. So, sixth hypothesis was not determined.

**Table 6:** t-test to compare the symmetric & simultaneously optional motion of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>21.32</td>
<td>0.711</td>
<td>178</td>
<td>0.478</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>21.750</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Seventh hypothesis: there was difference between female students’ asynchronous & non-symmetric optional motion in first to fourth of elementary schools in rural & urban areas of Shoushtar.

For surveying this hypothesis was used t-test & also it used for comparing rates of asynchronous & non-symmetric optional motion of rural & urban areas, regarding to the statistic test \(P=0.001\) & \(t=-3.834\) can be said that there was different significant among rural & urban female students’ asynchronous & non-symmetric optional motion in first to fourth grades of elementary schools. So, sixth hypothesis was determined.

**Table 7:** t-test to compare the asynchronous & non-symmetric optional motion of urban & rural students.

<table>
<thead>
<tr>
<th>T-test</th>
<th>Number</th>
<th>Mean</th>
<th>t</th>
<th>Freedom rate</th>
<th>Meaningful level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban students</td>
<td>90</td>
<td>15.44</td>
<td>-3.834</td>
<td>178</td>
<td>0.001</td>
</tr>
<tr>
<td>Rural students</td>
<td>90</td>
<td>18.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Discussion & results:**

Regarding to the done research [17,24,7,6,20,22,26,1,4] showed that motor activities & selected games caused to motor-perceptual growth be improved & can be said that it is the basic of motor-perceptual growth & if the children’s environment become good & useful in family & in pre-elementary schools & schools, so their obtained experiences can be helped to the motor-perceptual growth cities.

The obtained results of this research were same as these researches [15,7,21,16] based on that rural students were more better than urban students in motor-perceptual abilities. These results determined that the rural environment is rich for obtaining experiences because rural children have less environmental constraints & have more freedom action for doing motor activities. Since, each motor action need to understanding, interpretation of environmental stimulus is why motor-perceptual development is more in the rural children than urban ones.

The results showed that there wasn’t different significant between overall static coordination, overall dynamic coordination & symmetric & simultaneously optional motion in rural & urban children. However, the average differences in favor of rural children showed that this was because of environmental factors. Also there was different significant between dynamic hand variables, motor speed (fast-moving) & asynchronous & non-symmetric optional motions that maybe it was because of done especially activities in village such as participating in farming & animal husbandry, handicrafts, carpet wearing, spinning wool & basket-making &…

Motions caused to extend the perceptual horizon; motion is a kind of tools that a person learned how to relate with surroundings. Since the poverty mobility has irreversible effects in critical period of growth so it is so important for all children that in these times obtained useful motor experiences especially as games in environment. Human has various characteristics such as; cognitive, sensory- motor &… natural characteristics that defects in each area caused to making problems in adoption with environment. One of these areas, which are so important & be effective personal adoption to the environment, was sensory-motor area. Therefore the sensory-motor skills are essential. High motor & physical abilities & performing best & complex skills in adolescence & youth can be made by correct & timely school games & they require to the motor-perceptual abilities & motor optimal growth of children, that there was close & interaction relationship between the game & motor development. In general, regarding to the motions & movement in life, the environment influences in motor development & motor-perceptual functions role due to sporting complex skills development & improvement & in the other hand caused to the cognitive growth 7 academic development, while done researches selected motor plans especially physical activity & less attention to the different of environment growth. Because of the motor-perceptual abilities completed by movement (motions) & growth, perceptual
abilities development required performing variety motion experiences among effective efficient is significant in doing basic motor (movement) patterns. Because the behavior of the level (basic movement patterns) is the beginning of better personal motor-perceptual abilities & for personal motor skills development presented the planning characteristics for basic ages & initial growth & motor-perceptual abilities development. In the first step is emphasis on need of planning & then provided the required tools & finally continue controlling & evaluation. Another point is paying attention to the relationship between perception & motor (movement) & effects of planning & guided motor activities on abilities development & improvement. 3 important factors played basic role in training opportunities for children’s motor-perceptual skills development & growth that included facilities & equipment & times.

Differences in urban students’ motor-perceptual abilities compared to rural students’ is a warning for attention & prevention of retardations; motions, perceptual, cognitive, academic & social &…

So regarding to the urban students & children’s motor-perceptual abilities development & growth & providing the activity & various motor-sensory experiences is so important & essential & must not simply ignore it.

Practical suggestions:
Regarding to the results of research, that the rural children’s’ motor-perceptual abilities were better than urban children's, proposed that special attention should be to the urban spaces & facilities until the students can experience the motor freedom.
Regarding to the results of research, that rural children’s dynamic hand coordination were better than urban children’s, proposed that schools provide dynamic hand activities in sport & physical activity hours.
Regarding to the results of research, that rural children’s motor speed (fast-moving) were better than urban children’s; purposed that the schools provide proper environmental conditions such as school lawn, simple equipment; balance beam for balance improvement & innovative instruments suitable motor-perceptual growth.

REFERENCES


