المملكة الأردنية الهاشمية

جامعة اليرموك

المجلة الأردنية في العلوم التربوية

مجلة علمية عالمية محكّمة

المجلد (1)، العدد (2)، حزيران 2005م / جمادى الأولى 1426هـ

المجلة الأردنية في العلوم التربوية

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المجلد (1)، العدد (2)، حزيران 2005م / جمادى الأولى 1426هـ

المجلة الأردنية في العلوم التربوية: مجلة علمية فصلية عالمية محكّمة أسستها اللجنة العليا للبحث العلمي، وزارة التعليم العالي والبحث العلمي، الأردن، وتصدر عن عمادة البحث العلمي والدراسات العليا، جامعة اليرموك، إربد، الأردن.

ترسل البحوث إلى العنوان التالي: -

رئيس تحرير المجلة الأردنية في العلوم التربوية

عمادة البحث العلمي والدراسات العليا، جامعة اليرموك

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قواعد النشر

1- تنشر المجلة البحوث العلمية التي تتوافر فيها الأصالة والمنهجية العلمية ويتوفر فيها مقومات ومعايير إعداد مخطوط البحث.

2- تعنى المجلة بنشر البحوث العلمية المقدمة إليها في مجالات العلوم التربوية.

3- تعتذر المجلة عن عدم النظر في البحوث المخالفة للتعليمات وقواعد النشر.

4- يقدم البحث باللغة العربية أو باللغة الانجليزية، شريطة أن يقدم ملخصاً للبحث بالعربية بالإضافة إلى ملخص بلغة البحث، وبواقع 150 كلمة على صفحة مستقلة ويوضع عدد الكلمات بين قوسين في آخر الملخص على أن يتبع كل ملخص بالكلمات المفتاحية (Keywords) التي تمكن الآخرين من الوصول إلى البحث من خلال قواعد البيانات.

5- على الباحث أن يقدم تقريراً خطياً يؤكد بأن البحث لم ينشر أو لم يقدم للنشر في مجلة أخرى.

6- أن يكون البحث مطبوعاً على الحاسوب وبمسافة مزدوجة بين السطور، وتقدم أربع نسخ منه (ثلاث منها غفلاً من الأسماء أو أي إشارات إلى هوية الباحثين وتتضمن نسخة واحدة إسم الباحث / الباحثين وعناوينهم) مع قرص مرن قياس 3.5 انش، متوافق مع أنظمة IBM (Ms Word 97,2000,XP) بنط Normal 14 بالعربي، بنط 12 بالانجليزي، ويقدم مع النسخة نموذج التعهد الخاص بالمجلة.

7- أن لا يزيد عدد صفحات البحث بما فيها الأشكال والرسوم والجداول والملاحق على (30) ثلاثين صفحة من نوع A4 وتوضع الجداول والأشكال في مواقعها وعناوينها كاملة غير ملونة أو مظللة.

8- تعرض البحوث المقدمة للنشر في المجلة في حال قبولها مبدئياً على محكمين اثنين في الأقل من ذوي الاختصاص يتم اختيارهما بسرية مطلقة.

9- تحتفظ المجلة بحقها في أن تطلب من المؤلف أن يحذف أو يعيد صياغة بحثه أو أي جزء منه بما يتناسب وسياستها في النشر وللمجلة إجراء أية تعديلات شكلية تتناسب وطبيعة المجلة.

10- تقوم المجلة بإبلاغ الباحث/الباحثين حال وصول البحث، وحال قبوله، أو عدم قبوله للنشر.

11- يأخذ البحث المقبول للنشر دوره في النشر وفقاً لتاريخ قبوله قبولاً نهائياً للنشر.

12- التوثيق: تعتمد المجلة دليل (American Psychological Association) (APA) للنشر العلمي بشكل عام ونظام التوثيق للمراجع والمصادر الانجليزية بشكل خاص وما يقابلها للمراجع والمصادر العربية، ويلتزم الباحث بالأسلوب العلمي المتبع في كتابة المراجع وأسماء الباحثين والاقتباس والرجوع إلى المصادر الأولية وأخلاقيات النشر العلمي وما يتضمنه الدليل من إرشادات وأسس ذات صلة بعناصر تقرير البحث.

13- على الباحث أن يقدم نسخة من كل ملحق من ملاحق البحث من إعداده (إن وجدت) مثل برمجيات، اختبارات، ... الخ، وأن يتعهد خطياً بالمحافظة على حقوق الآخرين الفكرية (الملكية الفكرية) وأن يحدد للمستفيدين من البحث الآلية التي يمكن أن يحصلوا فيها على نسخة البرمجية أو الاختبار.

14- الآراء الواردة في البحوث تعبر عن وجهة نظر الباحثين فقط.

15- لا يخضع ترتيب البحوث في المجلة لأي اعتبارات.

16- لا تدفع المجلة مكافأة عن البحوث التي تنشر فيها.

17- تهدي المجلة لمؤلف البحث بعد نشره نسخة من المجلة بالإضافة إلى عشرين مستلة.

18- تنقل حقوق طبع البحث ونشره إلى المجلة الأردنية في العلوم التربوية عند إخطار صاحب البحث بقبول بحثه للنشر.

19- البحوث التي يتم نشرها في المجلة توضع كاملة على قاعدة البيانات في مكتبة جامعة اليرموك ويخضع الرجوع إليها لشروط استخدام تلك القاعدة.

محتويات العدد

المجلد (1)، العدد (2)، حزيران 2005م / جمادى الأولى 1426هـ

البحوث باللغة العربية

البحوث باللغة الانجليزية

المجلة الأردنية في العلوم التربوية، مجلد 1، عدد 2، 2005، 123-134

دراسة مقارنه بين مفهوم الذات لدى طلبة ذوي صعوبات التعلم والطلبة العاديين في محافظة إربد بالأردن

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تاريخ تسلم البحث 2004/6/30 تاريخ قبوله 2005/1/6

ملخص: هدفت هذه الدراسة إلى التعرف على مستوى مفهوم الذات لدى طلبة ذوي صعوبات التعلم والعاديين في المرحلة الأساسية في محافظة إربد بالأردن، ولتحقيق ذلك طورت أداة لقياس مفهوم الذات لدى الطلبة، تتوافر فيها شروط الصدق والثبات المناسبة، ومن ثم توزيعها على عينة مكونة من (202) من الطلبة والطالبات (119 من الذكور، و83 من الإناث)، منهم (111) طالبا عاديا، و(91) طالبا من طلبة ذوي صعوبات التعلم خلال الفصل الثاني للعام الدراسي 2004/2003م في محافظة إربد بالأردن. كشفت نتائج الدراسة أن مستوى مفهوم الذات لدى طلبة ذوي صعوبات التعلم كان منخفضا، وبينت أيضا النتائج أن طلبة ذوي صعوبات التعلم حصلوا على متوسطات أدنى على مقياس مفهوم الذات وبشكل دال مقارنة مع الطلبة العاديين. كذلك أظهرت الدراسة إلى عدم وجود فروق دالة في مستوى مفهوم الذات لدى الطلبة تعزى لاختلاف الجنس.
(الكلمات المفتاحية: مفهوم الذات، صعوبات التعلم).

A Comparative Study of Self-concept among Normal Students and Learning Disability Students in Irbid Governorate, Jordan

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***Abstract**: The purpose of this study was to investigate the level of self-concept of normal students and learning disability students in the early elementary stage in Irbid governorate, Jordan. To achieve this purpose, a questionnaire was developed which demonstrated adequate reliability and validity. A sample of (202) student, (119) male and (83) female of normal students and learning disability completed the questionnaire in Irbid governorate during the second semester of 2003-2004. The Results revealed that the level of self-concept among students with learning disability was low; it was lower than that of normal students. The results also revealed that there were no significant differences due to student gender.(**Keywords**: Self-councept, Learning disability).*

الخلفية النظرية: تعد صعوبات التعلم Learning disabilities من الموضوعات الحديثة التي شهدت نموا متسارعا، واهتماما متزايدا في مجال التربية الخاصة والإرشاد النفسي، وهي من أكثر المشكلات التي تؤرق التربويين والمرشدين وعلماء النفس والتربية الخاصة والآباء في العصر الحالي. وتشير التقديرات والإحصائيات إلى أن ما نسبته (2-10%) من أفراد أي مجتمع يعانون من صعوبات التعلم (American Psychiatric Association, 1994; Silver, 1991).

وتشير الدراسات الحديثة إلى أن الأثر السلبي لصعوبات التعلم لا يقتصر على الأداء الأكاديمي داخل المدرسة، و إنما يؤثر في شتى مناحي حياة الفرد، إذ يؤثر في علاقاته مع الآخرين، وعلاقاته داخل أسرته، وفي تفاعلاته الاجتماعية (Silver, 1986) .

وتعرف اللجنة المشتركة لصعوبات التعلم في الولايات المتحدة صعوبة التعلم بأنها " مصطلح وراثي يشير إلى مجموعة غير متجانسة من الاضطرابات في النطق، والقراءة، والكتابة، والمنطق أو القدرات الحسابية. وهي اضطرابات داخلية بالنسبة للشخص، ويفترض أنها تنتج عن مرض أو خلل وظيفي في الجهاز العصبي المركزي، مع أن صعوبة التعلم ترافق حالات أخرى (مثل الاضطرابات الحسية، والتخلف العقلي ،والاضطرابات الاجتماعية والعاطفية، والتدريس غير الكافي/ غير الملائم، والعوامل الوراثية، والعوامل النفسية)، (National Information Center for Children and Youth with Disabilities [NICHCY], 2003).

ويواجه هؤلاء الأطفال صعوبات في جوانب محدّدة من أدائهم الأكاديمي (Kavale & Forness, 2000) ، بالإضافة إلى الصعوبات الأكاديمية. وكما يظهر العديد منهم مشكلات سلوكية أو نقصاً في المهارات الاجتماعية (Gettinger & Koscik, 2001; Kavale & Forness, 1996)، ويتعرضون للرفض وعدم التقبل من نظرائهم العاديين (Kuhne & Wiener, 2000; Ochoa & Olivarez, 1995). ومثل هذه الأمور قد تؤثر سلبا في تشكيل مفهوم الذات لدى هؤلاء الطلبة الذين يعانون من صعوبات في التعلم (Johnson, 1995).

ومفهوم الذات عند روجرزRogers هو تصور كلي يتكون من إدراكات الفرد عن ذاته في مفردها، أو في علاقاتها بالأشخاص الآخرين والأشياء الموجودة في البيئة أي علاقتها بالحياة، إضافة إلى القيم والأحكام المتصلة بهذه الإدراكات (الشناوي، 1994).

* كلية التربية، جامعة اليرموك، إربد، الأردن.

ويرى براكن (Bracken, 1992) أن مفهوم الذات يجسّد خبرات الشخص وتقييماته لتفاعلاته مع الناس والبيئة من حوله، ويشمل أنماط التعزيز التي يحملها الشخص عن نفسه، وتاريخه من النّجاح والفشل. أما " الودي " (Allodi, 2000) فيرى أن مفهوم الذات يشير إلى إدراكات الفرد ومشاعره المتعلقة بهويته الخاصة التي تميزه عن غيره.

ويعرف تام وزملاؤه (Tam et al., 2003) مفهوم الذات بأنه إطار مرجعي لفكرة الفرد عن نفسه يتكون خلال تفاعل الفرد مع العالم المحيط به. وعرفه كيم وكاسير ولي (Kim, Kasser, & Lee, 2003) بأنه مجموعة الاعتقادات التي يحملها الأفراد حول أنفسهم.

وهنالك ثلاثة مظاهر معروفة لمفهوم الذات يحملها أي فرد عن نفسه، وهي كما يرى لورنس (Lawrence, 1996) :

1. صورة الذات *Self-image*: وتشير إلى ما عليه الشّخص فعليا، وهي أهم عناصر مفهوم الذات، ويطلق عليها الذات الحقيقية *Real Self*.
2. مفهوم الذات المثالي *Ideal self*: وتشير إلى الصورة التي يود الشّخص أن يكون عليها.
3. تقدير الذات *Self-esteem*: وتشير إلى مشاعر الشّخص حول الفرق بين ما هو عليه (صورة الذات)، وما يودّ أن يكون (الذات المثالية).

ويعد مفهوم الذّات بالإضافة إلى تقدير الذات من أكثر الأمور التي تؤثّر في إنجاز الطّلاب وتحصيلهم الأكاديمي في المدرسة (Grantham, & Ford, 2003). ومن المعروف أن مفهوم الذات الموجب الذي يحمله الفرد عن نفسه لا يؤثر في إنجازه الأكاديمي فحسب، و إنما يؤثر كذلك وبشكل واضح في تطوّر شخصيته على المدى البعيد (Harter, 1993). وتؤكد معظم الدراسات الحديثة أن الأفراد ذوي صعوبات التعلم يعانون من مستوى منخفض في مفهوم الذات. وقد بين الباحثون الذين يهتمون بدراسة مفهوم الذّات لدى الأطفال ذوي صعوبات التعلم أن فشل هؤلاء الأطفال الأكاديمي يؤثّر سلبا في مفهوم الذّات لديهم (Gans, Kenny & Ghany, 2003; Montgomery, 1994) ، فقد بين إلبوم و فاوجن (Elbaum & Vaughn, 2003) أن الخبرات السلبية التي يمر بها الأفراد ذوي صعوبات التعلم في المدرسة، والمتعلقة بالأداء الأكاديمي المنخفض، والقبول السلبي عند أقرانهم نتيجة هذا الأداء، يؤثر سلبا في مفهوم الذّات لديهم.

إن وسم الطفل بأنه من ذوي صعوبات التعلم، سوف يؤثر في تقديرات الآباء والمعلمين لمفهوم الذات عند هؤلاء الطلبة مما يجعلهم يقدرون أنفسهم بشكل منخفض مقارنة بأقرانهم العاديين (Montgomery, 1994). فقد أدرك " بندورا" مبكراً أن الحكم على الذات الذي يصدره الأشخاص المقربون من الفرد يؤثر بشكل مباشر في أفعاله وتصرفاته، وبالتالي على مفهوم الذات لديه (Pisecco et al., 2001). ولا شك أن ذلك يؤثر سلبا في طريقة تعامل الكبار مع هذه الفئة من الطلبة، التي تتأثر هي سلبيا بذلك، مما يؤثر في توافقها النفسي والاجتماعي والأكاديمي.

وقد أكد شابمان (Chapman, 1988) أن الأطفال ذوي صعوبات التعلم يدركون قدراتهم ومهاراتهم بشكل سلبي، وذلك بسبب المستوى المتدني لأدائهم على هذه المهارات والقدرات واعتقادهم أن النجاح والإنجاز في المجال الأكاديمي في المستقبل شيئان مستحيلان بالنسبة لهم، بالإضافة إلى الاستسلام السريع عندما يتعرضون للمهمّات الصّعبة.

وبالإضافة إلى ذلك يربط المربون والتربويون بين مفهوم الذات لدى الطالب وبين حالته التربوية والأكاديمية، فهم يفترضون أن الأطفال ذوي صعوبات التعلم عادة ما يمتلكون مفهوماً منخفضا للذات، بينما يمتلك الأطفال الموهوبون مفهوماً مرتفعا للذات (Prout, Marcal, & Marcal, 1992)، ويرى هيويس و بيكر (Hughes & Baker, 1990) أن مشاعر مفهوم الذات لدى ذوي صعوبات التعلم تكون منخفضة وضعيفة بشكل عام نتيجة لخبرة الإذلال ، والرفض، والفشل التي يمرون بها عموما.

ومن الأسباب التي تؤدي إلى مفهوم الذات المنخفض عند ذوي صعوبات التعلم يتمثل في حاجة هؤلاء الأفراد للدعم الأسري أكثر من الطّفل الطّبيعي، حتى يتحسن مستوى مفهوم الذات عندهم. لكن هذا الدعم لا يتوفر غالباً (Rowley, 1981). ومن أسباب ذلك أيضاً أن الطالب إذا بدأ بشكل فاشل داخل قاعة الدروس، فإن المعلّم يدركه على أنّه فاشل في كل شئ ويعامله على أنه فاشل، وهذا يعزّز مفهوم الذات السلبي لديه (Rowley, 1981)، فغالبا ما ينظر المعلمون إلى الأطفال ذوي صعوبات التعلم ويقدرون مفهوم الذات لديهم على أنه أقل مما هو لدى الطلبة العاديين، مما يؤدي إلى سيادة مشاعر التعاسة والسلبية لديهم مقارنة بأقرانهم العاديين (Bear, Minke & Manning, 2002).

وفي السياق نفسه يرى كافالي و فورنيس (Kavale & Forness, 2000) أن ذوي صعوبات التعلم عادة ما يحملون مشاعر مسكوت عنها تتضمن تقديرا كليا منخفضا للذات، ويعد تقدير الذات الكلي أهم مكونات مفهوم الذات، وهو اكثر من مجرد إفصاح موجز عن إدراك الفرد لذاته من خلال ميادين مختلفة من الكفاءة الاجتماعية والسلوكية والأكاديمية والجسمية (Bear, Minke & Manning, 2002).

ويرى كليفير وبير وجوفونين (Clever, Bear & Juvonen, 1992) أن من المتوقّع انتشار تقدير الذات الكلي المنخفض بين الطّلاب ذوي صعوبات التعلم، لأنه يستند أصلا على إدراكهم لأنفسهم بشكل غير مناسب في المجالات الأكاديمية ، والسلوكية، والاجتماعية؛ لأن لهذه المجالات قيمة عالية عند الأطفال كافة، بما في ذلك ذوي صعوبات التعلم. ويؤكد كلوموك و كوسدين (Kloomok & Cosden, 1994) أن تقدير الذات الكلي يمكن أن يساند ويُقوى بالدعم الاجتماعي الملائم والمتواصل الذي يقوم به الوالدان، والمعلمون، والأصدقاء، وزُمَلاء الدِّرَاسَة.

يتبين مما سبق أن مفهوم الذات السلبي الذي يحمله الطلبة ذوي صعوبات التعلم عن أنفسهم يؤثر كثيرا في سلوكهم وتصرفاتهم، فقد بين ليونج ولو (Leung & Lau, 1989) أنّ الأطفال الذين يملكون مفهوماً سلبياً تجاه مهاراتهم الأكاديمية يظهرون مستويات أعلى من السّلوك الجانح. ويرى " ليونج و لو" أن الأطفال الذين لديهم مفهوم ذات سلبي يلجأون إلى السلوكات الجانحة على أنها وسائل لتحسيّن صورة الذّات لديهم، وبشكل أكثر تحديدا، فانهما يريان أن انشغال الطلبة بمثل هذه السّلوكات يساعدهم على تحقيق التقبل لدى أقرانهم، وهذا يحسّن من صورة الذّات لديهم. وقد بين جونسون (Johnson, 1995) أن صعوبات التعلم تؤثّر في الصّحة العقلية، وفي النشاطات الاجتماعية للأطفال إضافة إلى أثرها في تقديرهم لذاتهم.

الدراسات السابقة: أجرى ساراكوجلو ومينـدين وويلتشيسكاي (Saracoglu, Minden & Wilchesky, 1989) دراسة على (34) طالبا من طلبة صعوبات التعلم و(31) طالبا عاديا، أشارت نتائجها إلى أن لدى طلبة صعوبات التعلم مستويات أقل وبشكل دال في مفهوم الذات والتوافق الأكاديمي مقارنة بالطلبة العاديين، وبالإضافة إلى ذلك أشارت النتائج إلى وجود علاقة دالة إيجابية بين مفهوم الذات والكفاءة الذاتية Self-efficacy.

وأجرى بريل وليشيم (Priel & Leshem, 1990) دراسة هدفت إلى التعرف على الفروق في إدراك مفهوم الذات بين طلبة صعوبات التعلم والطلبة العاديين، وقد تكونت عينة الدراسة من (44) طالبا من ذوي صعوبات التعلم و(36) طالبا عاديا. وأشارت النتائج إلى أن لدى الطلبة ذوي صعوبات التعلم مستوى أدنى في مجال القدرة المعرفية من الطلبة العاديين . وإضافة إلى ذلك أشارت النتائج إلى أن الإدراك الذاتي لتقبل الزملاء peer acceptance كان متشابها بين المجموعتين.

وأجرى جرولنيك وريان (Grolnick & Ryan, 1990) دراسة في نيويورك New York بهدف مقارنة مفهوم الذات بين مجموعتين من الطلبة (صعوبات التعلم، وطلبة عاديين) بواقع (37) طالبا لكل مجموعة. وأشارت النتائج إلى أن الطلبة ذوي صعوبات التعلم حصلوا على متوسطات أدنى وبشكل دال في القدرة المعرفية المدركة ذاتيا وفي مفهوم الذات الأكاديمي مقارنة مع بقية المجموعات.وبالإضافة إلى هذا أشارت النتائج إلى عدم وجود فروق دالة بين المجموعات في مفهوم الذات العام.

وأجرى رافيف وستون (Raviv & Stone, 1991) دراسة على عينة مكونة من (49) طالبا من ذوي صعوبات التعلم و(49) طالبا عاديا بهدف مقارنة صورة الذاتself-image لديهما. وأشارت النتائج أن الطلبة ذوي صعوبات التعلم أحرزوا متوسطات أدنى على أربعة أبعاد من أصل عشرة أبعاد على مقياس صورة الذات مقارنة بالطلبة العاديين. وأشارت النتائج كذلك إلى أن الطلبة الذين تم تشخيصهم مؤخرا على أنهم من ذوي صعوبات التعلم، أحرزوا متوسطات أعلى وبشكل دال على مقياس صورة الذات من الطلبة الذين شخصوا سابقا على أن لديهم صعوبات تعلم. وكشفت النتائج إلى أن آباء الطلبة ذوي صعوبات التعلم أدركوا أن لدى أطفالهم صورة أدنى للذات من أقرانهم العاديين.

وأجرى كاسي و ليفي وبراون، وبروكس-جين (Casey, Levy, Brown, Brooks-Gunn, 1992) دراسة على عينة مكونة من (39) طفلاً من ذوي صعوبات القراءة وآبائهم، وعينة مكونة من (28) طفلا لا يعانون من صعوبات القراءة، بهدف اختبار مفهوم الذات لدى العينتين.وقد كشفت النتائج عن أن الأطفال ذوي صعوبات التعلم قدروا أن مفهوم الذات لديهم أقل من تقديرهم لمفهوم الذات لدى الأطفال العاديين. وبالإضافة إلى ذلك قدر آباء الأطفال ذوي صعوبات القراءة مفهوم الذات لدى أبنائهم بشكل أقل وبشكل دال من تقديرهم لمفهوم الذات لدى الأطفال الآخرين.

كما أجرى جارفيس وجيستس (Jarvis & Justice, 1992) دراسة هدفت إلى مقارنة الحساسية الاجتماعية Social Sensitivity ومفهوم الذات بين طلبة صعوبات التعلم (15 طالبا)، والطلبة العاديين (15 طالبا). وتم تقييم أربعة أبعاد لمفهوم الذات (الدافعية Motivation، والتوجه نحو المهمة Task Orientation، والقدرة على حلّ المشكلات problem-solving ability، والعضوية في الصف Class membership). وقد أشارت النتائج إلى أن مستويات مفهوم الذات على الأبعاد الأربعة كانت أقل عند طلبة صعوبات التعلم مما هي عليه عند الطلبة العاديين.

وفي دراسة شابمان وبويرسما (Chapman & Boersma, 1992) التي أجريت في نيوزيلندا على (78) طالبا من ذوي صعوبات التعلم، و(71) طالبا من ذوي التحصيل المتوسط، تمت مقارنة مفهوم الذات بين المجموعتين. وقد بينت النتائج أن طلبة صعوبات التعلم حصلوا على متوسطات أدنى على مقياس مفهوم الذات من ذوي التحصيل المتوسط.

وأجرى كوليمان ومتشام ومينيت (Coleman, McHam & Minnett, 1992) دراسة هدفت إلى التعرف على الفروق في مفهوم الذات والشعور بالوحدة النفسية بين الطلبة منخفضي التحصيل وطلبة صعوبات التعلم، وتكونت عينة الدراسة من (85) طفلا يعانون من صعوبات التعلم (54 من الذكور، و من 31 الإناث)، وأشارت النتائج إلى عدم وجود فروق دالة بين المجموعتين على مقياس مفهوم الذات، وأن أطفال صعوبات التعلم كانوا أكثر شعوراً بالوحدة مقارنة بالأطفال منخفضي التحصيل.

وفي الدراسة التي أجراها موفات (Moffatt, 1993) على (50) طالبا نصفهم من طلبة صعوبات التعلم والنصف الآخر من الطلبة العاديين، تم اختبار مفهوم الذات لدى المجموعتين. وأشارت النّتائج إلى أن طلبة صعوبات التعلم حصلوا على نتائج أدنى في مفهوم الذات من الطلبة العاديين. وبالإضافة إلى ذلك بينت النتائج وجود فروق دالة في مستوى مفهوم الذات بين الذكور والإناث ولصالح الذكور. لكن النتائج لم تظهر وجود علاقة بين العمر والحالة الاقتصادية والاجتماعية وبين مفهوم الذات.

وقد أجرى كوليمان ومينيت (Coleman & Minnett, 1993) دراسة في الولايات المتحدة كان من ضمن أهدافها التعرف على الفروق في مفهوم الذات بين الطلبة العاديين والطلبة ذوي صعوبات التعلم. وقد أشارت النّتائج إلى أن الطلبة العاديين أحرزوا متوسطات أعلى من الطلبة ذوي صعوبات التعلم على مقياس مفهوم الذات الأكاديمي. وأن الطلبة ذوي صعوبات التعلم أحرزوا متوسطات أعلى وبشكل دال على مقياس مفهوم الذات الاجتماعي مقارنة بالطلبة العاديين. وأن المعلمين قدروا أن إدراك الذات لدى الأطفال العاديين أعلى مما هو عليه عند الأطفال ذوي صعوبات التعلم.

وقد أجرى سميث وناجل (Smith & Nagle, 1995) دراسة في الولايات المتحدة الأمريكية على عينة مكونة من (59) طالبا من ذوي صعوبات التعلم و(57) طالبا عاديا، بهدف التحقق من الفرضية التي ترى أنّ الأطفال ذوي صعوبات التعلم يدركون أنفسهم على أنهم أقل كفاءة من الأطفال الآخرين من حيث مستوى الذّكاء، والمهارات الأكاديمية، والسلوك، والتقبل الاجتماعي. وأشارت النتائج إلى عدم صحة الفرضية السابقة إذ لم يكن هنالك فروق بين المجموعتين في إدراكهم لمفهوم ذواتهم.

وهناك دراسة قام بها فاوجن وإلبوم وشوم (Vaughn, Elbaum & Schumm, 1996) وأجريت في ولاية ميامي الأمريكية على (16) طالبا من ذوي صعوبات تعلم، و(27) طالبا ذوي التحصيل المنخفض، و(21) طالبا من متوسطي ومرتفعي التحصيل. وقد أظهرت النتائج عدم وجود فروق دالة في تقدير الذات الكلي بين المجموعات الثلاث، لكنها أشارت إلى أن طلبة صعوبات التعلم أحرزوا نتائج أقل وبشكل دال في مفهوم الذات الأكاديمي مقارنة مع باقي المجموعات.

وقد أجرى هيلمس (Helms, 1996) دراسة في جزيرة رود Rhode Island على (249) طالبا من طلبة الصفوف الرابع وحتى الثاني عشر، منهم (135) طالبا من ذوي الصعوبات العاطفية Emotional disabilities و (114) طالبا من ذوي صعوبات التعلم. وقد بينت النتائج أن الطلبة العاديين أحرزوا متوسطات أعلى وبشكل دال في الإجهاد الأكاديمي ومفهوم الذات الأكاديمي، مقارنة بالطلبة ذوي صعوبات التعلم وذوي الصعوبات العاطفية.

وأجرى سيمور (Seymour, 1998) دراسة حول مفهوم الذات الحالي والمستقبلي لدى ثلاث مجموعات من المراهقين: مجموعة ذوي صعوبات التعلم يدرسون في مدارس خاصة بهم، وطلبة ذوي صعوبات التعلم يدرسون في مدارس حكومية، وطلبة عاديين يدرسون في مدارس عامة، وقد أشارت النتائج إلى أن مفهوم الذات الأكاديمي لدى الطلبة ذوي صعوبات التعلم الذين يدرسون في مدارس حكومية كان أكثر سلبية من المجموعتين الأخريين، وكشفت عن وجود علاقة دالة بين مفهوم الذات الحالي وبين مفهوم الذات المستقبلي لدى الطلبة العاديين. وبالإضافة إلى ذلك أظهرت النتائج عدم وجود فروق دالة بين المجموعات في تقدير الذات العام، وفي مفهوم الذات في الميادين غير الأكاديمية.

أما الدراسة التي أجراها ميلزير وروديتي وهوسير وبيرلمان (Meltzer, Roditi, Houser & Perlman, 1998) في ولاية ماساشوسيتس Massachusetts الأمريكية على (663) طالبا من ذوي صعوبات التعلم و(57) معلماً، فقد هدفت إلى التعرف على مفهوم الذّات العامّ، ومفهوم الذّات الأكاديمي لدى هؤلاء الطلبة. وقد أشارت النتائج إلى أن مفهوم الذات عند الطلبة ذوي صعوبات التعلم كان أقل وبشكل دال من مفهوم الذّات عند الطلبة متوسطي التحصيل وفي كل المجالات. وعلاوة على ذلك أظهرت النتائج وجود فروق دالة بين تَقييم الطّلاب ذوي صعوبات التعلم لمفهوم ذواتهم وبين تقييم معلميهم لهم. لكنها أشارت في الوقت نفسه إلى عدم وجود فروق دالة بين الجنسين في مفهوم الذات الأكاديمي ومفهوم الذات العام.

وقام هوسلي وهوبير وجروبير (Hosley, Hopper & Gruber, 1998) بدراسة حول مفهوم الذات في الولايات المتحدة على (28) طالبا من ذوي صعوبات التعلم، منهم (11) ذكورا و(16) إناثا تراوحت أعمارهم بين (11-14) عاماً. وقد أشارت النتائج إلى أن العينة أحرزت متوسطات عالية نسبياً في مجال تقدير الذات الكلية Global Self-worth. لكنها أحرزت متوسطات أدنى من المجموعة الضابطة وبشكل دال على المقياس الثانوي للكفاءة الدّراسية والتّصرفات السلوكية. وبالإضافة إلى ذلك بينت النتائج أن الذكور أحرزوا متوسطات أعلى من الإناث وبشكل دال في مجال المهارة الآلية، ومجال القدرة الحركية في اختبار مفهوم الذات.

وأجرى كرابتري (Crabtree, 2000) دراسة في المملكة المتحدة هدفت إلى مقارنة مفهوم الذات لدى ثلاث عينات من الطلبة: طلبة صعوبات التعلم يدرسون في مدارس خاصة بهم **(ن= 111)**، وطلبة صعوبات تعلم يدرسون في مدارس عامة ويتلقون دعما تربويا خاصا **(ن= 69)**، وطلبة عاديين **(ن= 334)**. وأظهرت النتائج أن طلبة صعوبات التعلم الذين يدرسون في المدارس العامة أظهروا مستويات أدنى في مفهوم الذات فيما يتعلق بالقدرة الثّقافية العامّة والقدرة الرياضية مقارنة مع المجموعتين الأخريين.

كما أجرى إلبوم (Elbaum, 2002) تحليلا لنتائج (40) دراسة تناولت مفهوم الذات لدى ذوي صعوبات التعلم ، وأشارت نتائج التحليلات إلى أن ذوي صعوبات التعلم الذين يدرسون في المدارس العادية أظهروا نتائج أدنى في مفهوم الذات من الطلبة ذوي صعوبات التعلم، الذين يدرسون في مدارس خاصة بهم.

وأجرى بير ومينك ومانينج (Bear, Minke, & Manning, 2002) تحليلا لنتائج (61) دراسة أجريت على ذوي صعوبات التعلم، إذ أشارت نتائج التحليل إلى أن طلبة صعوبات التعلم يدركون مفهوم الذات الأكاديمي لديهم بشكل أكثر سلبية من الطلبة العاديين.

وأجريت دراسة في كندا قام بها بيريس (Pires, 2003) بهدف اختبار العلاقة بين مفهوم الذات الاجتماعية، والشعور بالوحدة، وتقدير الذات لدى عينة مكونة من (232) طالبا منهم (117) طالبا من ذوي صعوبات التعلم. وقد أشارت النتائج إلى عدم وجود فروق

دالـة فـي مـستوى تقـدير الـذات ومفهـوم الـذات الاجتمـاعي بـين المجموعتين، وبالإضافة إلى ذلك فإنها كشفت عن وجود علاقة دالة سلبية بين الشعور بالوحدة، وتقدير الذات، ومفهوم الذات.

وأجرى مانسيل (Mansell, 2004) دراسة كان من ضمن أهدافها مقارنـة مفهـوم الـذات لـدى الطلبـة ذوي صـعوبات الـتعلم اللفظيـة والطلبة العاديين. وقد أشارت النتائج إلى أن الطلبة الذين لديهم صعوبات التعلم اللفظية حصلوا على متوسطات أعلى وبشكل دال على مقياس مفهوم الذات في مجالي السعادة والرضا عن الذات مقارنة بالطلبة العاديين.

يلاحظ من الدراسات السابقة أنها تناولت متغيرات مختلفة في علاقتها بمفهوم الذات مثل: المستوى الدراسي للطالب والجنس، وركز بعضها على مقارنة مفهوم الذات بين الطلبة ذوي صعوبات التعلم والطلبة العاديين، وقد جاءت هذه الدراسات متغايرة في نتائجها. وعلاوة على ذلك يظهر أن معظم هذه الدراسات أجريت في بيئات أجنبية، مما يعطي دافعا لإجراء دراسة مماثلة على طلبة صعوبات التعلم في البيئة الأردنية تتناول هذه المتغيرات ومتغيرات أخرى، وهو ما حاولت هذه الدراسة القيام به.

مشكلة الدراسة وأهدافها: يعد المفهوم الذي يحمله الطالب عن نفسه من أهم الأمور التي تؤثر في تحصيله الأكاديمي بشكل خاص، ووضعه الدراسي بشكل عام، ويعد طلبة صعوبات التعلم من اكثر فئات الطلبة تأثرا بهذا الوضع، مما يترك أثرا سلبيا على شخصياتهم وعلى توافقهم وتكيفهم داخل المدرسة. لذا جاءت هذه الدراسة لتحقيق الهدفين التاليين:

- التعرف على مستوى مفهوم الذات لدى ذوي صعوبات التعلم ومقارنته مع مفهوم الذات لدى الطلبة العاديين.
- الكشف عما إذا كان مفهوم الذات لدى الطلبة ذوي صعوبات التعلم يختلف باختلاف جنس الطالب أو مستواه الدراسي.

أسئلة الدراسة

1. ما مستوى مفهوم الذات لدى طلبة صعوبات التعلم في محافظة إربد؟
2. هل هنالك فروق ذات دلالة إحصائية في مفهوم الذات بين طلبة المرحلة الأساسية تعزى لاختلاف فئة الطلبة (عاديين، ذوي صعوبات تعلم)، أو الجنس ،أو المستوى الدراسي والتفاعل بينهما؟

أهمية الدراسة: تكمن أهمية الدراسة الحالية في سعيها إلى التعرف على مستوى مفهوم الذات لدى فئة هامة من الطلبة، وهم طلبة صعوبات التعلم بهدف تدعيم الجوانب الإيجابية في مفهوم الذات لديهم، والتعرف على الجوانب السلبية في مفهوم الذات، وذلك بهدف وضع البرامج التربوية والوقائية والإرشادية في محاولة لتحسينه، مما يكون له أثر أكبر في التوافق الأكاديمي والشخصي لهؤلاء الطلبة.

التعريفات الإجرائية

مفهوم الذات: مجموعة الاعتقادات التي يحملها الطلبة حول أنفسهم والمقاسة من خلال أداء الطالب على أداة الدراسة.

صعوبات التعلم: مصطلح عام يشير إلى مجموعة متباينة من الاضطرابات التي تظهر من خلال صعوبات واضحة في اكتساب قدرات الاستماع واستخدامها، والكلام، والقراءة، والكتابة، والاستدلال، أو القدرات الرياضية.

محددات الدراسة: تتحدد نتائج هذه الدراسة بعينة الدراسة ومدى تمثيلها لمجتمع الطلبة ذوي صعوبات التعلم، و بمدى صدق الأداة المستخدمة فيها وثباتها.

مجتمع الدراسة وعينتها: تكون مجتمع الدراسة من طلبة المرحلة الأساسية الدنيا جميعهم (الصف الأول حتى الصف السادس) في محافظة إربد في الفصل الدراسي الثاني من العام الدراسي (2004/2003). في حين تكونت عينة الدراسة من (202) من الطالبة والطالبات، منهم (119) من الذكور، و(83) من الإناث، وتم اختيار مدارسهم بالطريقة القصدية المتيسرة. والجدول رقم (1) يبين توزيع أفراد عينة الدراسة حسب متغيراتها.

جدول (1): توزيع أفراد عينة الدراسة حسب متغيرات الفئة والجنس و المستوى الدراسي

المتغير	الفئة	العدد	النسبة
الجنس	ذكر	119	58.91
	أنثى	83	41.09
فئة الطلبة	عاديون	111	54.95
	ذوو صعوبات تعلم	91	45.05
المستوى	أول-ثالث	104	51.49
	رابع-سادس	98	48.51
	المجموع	202	100.0

أداة الدراسة: قام الباحثان ببناء مقياس لمفهوم الذات يتناسب وعينة الدراسة بعد الاطلاع على الأدب النظري المتعلق بموضوع الدراسة، والاطلاع على عدد من مقاييس مفهوم الذات وهي: استبيان مفهوم الذات لتام وزملائه (Tam et al., 2003)، واستبيان مفهوم الذات لروسيل (Russell, 1999)، ومقياس بيرس- هاريس لمفهوم الذات عند الأطفال (Piers-Harris Children's Self-Concept Scale) (Piers, 1994)، ومقياس مفهوم الذات عند الطلبة (Gresham, Elliott & Evans-Fernandez, 1993)، ومقياس مفهوم الذات متعدد الأبعاد لبراكين (MSCS) (Bracken, 1992)، ومقياس مفهوم الذات للمعوقين حركيا للمومني والصمادي (1995). وقد تكون المقياس بصورته النهائية من جزئين رئيسيين هما:

الجزء الأول: ويتضمن معلومات عامة عن المستجيب.

الجزء الثاني: يتضمن فقرات المقياس التي بلغ عددها (51) فقرة موزعة إلى خمسة أبعاد هي:

أولا: مفهوم الذات العائلي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (1-11).

ثانيا: مفهوم الذات الاجتماعي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (12-22).

ثالثا: مفهوم الذات الجسمي وبلغ عدد فقراته (6) فقرات وهي الفقرات من (23-28).

رابعا: مفهوم الذات الشخصي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (29- 39).

خامسا: مفهوم الذات الأكاديمي وبلغ عدد فقراته (12) فقرة، وهي الفقرات من(40-51).

صدق المقياس: قام الباحثان بحساب إجراءات الصدق لمقياس الدراسة، بأن تم عرضها على (15) محكما في التربية الخاصة، والقياس والتقويم، وعدد من معلمي صعوبات التعلم، إذ طلب إليهم إبداء الرأي في فقرات المقياس من حيث مدى وضوح اللغة، ومدى ارتباط الفقرة بالمقياس وبالمجال، إضافة إلى أية تعديلات يرونها مناسبة. وقد تم تعديل ما أجمع عليه أكثر من (20%) من المحكمين.

ثبات المقياس: بالنسبة لثبات المقياس فقد تم التأكد منه بتوزيعه على عينة استطلاعية من طلبة المرحلة الأساسية، بلغ عددهم (35) طالباً وطالبةً من خارج عينة الدراسة (23 ذكور، 12 إناث)، وطلب إليهم الاستجابة على فقرات الأداة. وبعد ذلك حسب معامل الاتساق الداخلي لاستجاباتهم باستخدام معادلة كرونباخ ألفا الذي بلغت قيمته (0.84)، وهو معامل ثبات مقبول لأغراض الدراسة الحالية.

تصحيح المقياس: أعطيت الاستجابة **نعم** على المقياس الدرجة (2) والاستجابة **لا** الدرجة (1)، وبناء على ذلك تم تقسيم الاستجابات إلى ثلاث فئات هي:

1. مفهوم ذاتٍ منخفض، وهي الفئة التي انحصرت متوسطاتها الحسابية بين (1–1.33).
2. مفهوم ذاتٍ متوسطٍ، و تضم الفئة التي انحصرت متوسطاتها الحسابية بين (1.34-1.66).
3. مفهوم ذاتٍ عالٍ، وشملت الفئة التي انحصرت متوسطاتها الحسابية بين (1.67-2).

إجراءات الدراسة

قام الباحثان ببناء استبانة الدراسة والتأكد من صدقها وثباتها، ومن ثم تم توزيعها على أفراد العينة ، بعد أن تم تحديد الأماكن التي يتواجد فيها ذوو صعوبات التعلم والأفراد العاديين في مديرية تربية إربد الثانية، وكان الباحثان يوضحان لأفراد الدراسة الهدف من الدراسة وكيفية الإجابة على فقرات المقياس، ويقومان بتوضيح بعض الفقرات التي كان يسأل عنها المستجيب، وخاصة الطلبة الصغار، ثم جمعت الاستبانات وفرغت البيانات وحللت باستخدام برنامج *SPSS*.

متغيرات الدراسة

المتغيرات المستقلة: اشتملت الدراسة على ثلاثة متغيرات مستقلة وهي:

1- الجنس: وله مستويان (ذكور، إناث).

2- المستوى الدراسي: وله مستويان: (الصفوف من أول-ثالث، والصفوف من رابع –سادس).

3- فئة الطلبة: وله مستويان (مستوى الطلبة العاديين، ومستوى الطلبة ذوي صعوبات التعلم).

المتغير التابع: مفهوم الذات

نتائج الدراسة ومناقشتها

للإجابة عن السؤال الأول من أسئلة الدراسة وهو "ما مستوى مفهوم الذات لدى طلبة صعوبات التعلم في محافظة إربد؟"، استخرج الباحثان المتوسطات الحسابية والانحرافات المعيارية الموضحة في الجدول رقم (2).

جدول (2): المتوسطات الحسابية والانحرافات المعيارية لاستجابات أفراد العينة على فقرات مقياس مفهوم الذات لدى طلبة صعوبات التعلم مرتبة تنازلياً

الرتبة	الرقم	الفقـــرة	المتوسط الحسابي	الانحراف المعياري
.1	10	أنا شخص مهم بالنسبة لعائلتي	1.6524	0..4954
.2	1	أنا أحبّ عائلتي.	1.6226	0.4258
.3	24	أنا شخص قوي.	1.6078	0.5217
.4	29	أنا راض عن مظهري الخارجي	1.5849	0.3658
.5	6	أنا محبوب من عائلتي	1.549	0.3257
.6	12	أعتقد أن الناس الآخرين يحبون أن يكونوا معي	1.5472	0.4527
.7	36	أنا راض عن سلوكي الأخلاقي	1.5472	0.3257
.8	4	أنا عضو مهم في عائلتي	1.5283	0.5127
.9	2	أنا فخور بعائلتي	1.4875	0.4235
.10	8	لا تفرق عائلتي في المعاملة بيني وبين أخوتي	1.4578	0.4157
.11	20	نادراً ما أتعرض للنقد من الآخرين	1.4325	0.4875
.12	21	أحب الجلوس مع الناس	1.4021	0.5672
.13	27	أمتلك وزنا مناسبا	1.3801	0.3657
.14	25	أمتلك جسما سليما من الناحية الصحية.	1.3798	0.4587
.15	28	أعتني بجسمي جيدا.	1.3784	0.4512
.16	35	أنا شخص هادئ ومتمهل	1.3641	0.3214
.17	32	أنا أحترم نفسي	1.3594	0.3587
.18	30	أنا شخص جذاب	1.3454	0.3681
.19	44	أنا مهم بالنسبة لزملائي داخل الصف	1.3354	0.4125
.20	45	أنا يمكن أن أتغلّب على كل التحديات في دراستي.	1.3298	0.2354
.21	38	أنا احب نفسي كما هي عليه	1.3254	0.345
.22	31	أنا واثق من نفسي.	1.3254	0.4781
.23	26	أمتلك طولا مناسبا	1.3199	0.5147
.24	33	أنا فصيح اللسان	1.3178	0.3475
.25	34	أنا شخص مهذب وصادق	1.3145	0.1247
.26	37	أنا إنسان سعيد	1.3012	0.5217
.27	14	أنسجم بشكل جيّد مع الناس الآخرين	1.2984	0.4817
.28	16	أنا راض عن الطّريقة التي أعامل بها الأفراد الآخرين	1.2847	0.3571
.29	39	أنا شخص مرح وبشوش	1.2689	0.4571

الرتبة	الرقم	الفقـــرة	المتوسط الحسابي	الانحراف المعياري
.30	17	أعتقد أن الناس الآخرين يفكّرون بي إيجابيا	1.2678	0.3681
.31	11	أتصرف بطريقة مقبولة في البيت	1.2578	0.4681
.32	41	أنا راض عن مستواي الدراسي	1.2354	0.5471
.33	22	أتمتع بشهرة بين الناس	1.2345	0.3917
.34	18	يجد الناس سهولة في التعامل معي	1.2339	0.3417
.35	23	أنا أمتلك مواهب جيدة	1.2234	0.5471
.36	9	أشعر بالانسجام والتوافق مع أعضاء عائلتي	1.2187	0.4812
.37	15	لا يفرق أقراني بالمعاملة بيني وبين الآخرين.	1.2143	0.4111
.38	7	تساعدني عائلتي دائماً في أية مشكلة تواجهني	1.2025	0.3147
.39	3	أنا عضو في عائلة سعيدة	1.1985	0.5127
.40	13	أجد سهولة في التحدث مع الأشخاص الغرباء	1.1957	0.4147
.41	5	أنا رَاض عن علاقتي بعائلتي	1.1954	0.4581
.42	48	أشارك كثيرا داخل غرفة الصف	1.1875	0.3258
.43	40	أشعر أنني إنسان ذكي	1.1867	0.2147
.44	50	أنا قادر على الحصول على علامات جيدة	1.1758	0.6211
.45	46	لدي زملاء كثيرون داخل المدرسة	1.1674	0.4758
.46	43	يمكن أن أساعد زملائي في دراستهم.	1.1587	0.2147
.47	49	أواظب على دروسي حتى أنجز دراستي بنجاح	1.1547	0.3687
.48	19	أجيب بسهولة عندما يسألني شخص لا أعرفه	1.1475	0.3147
.49	42	أستطيع أن أحل كل واجباتي المدرسية	1.1243	0.4114
.50	47	استوعب جيدا ما يشرحه المعلم	1.1128	0.3514
.51	51	أحب الذهاب إلى المدرسة	1.1124	0.2451
		الكلي	1.3187	0.1748

يتبين من الجدول السابق أن المتوسط الكلي لمفهوم الذات لدى الطلبة ذوي صعوبات التعلم بلغ (1.32)، بانحراف معياري (0.1748)، وبالرجوع إلى المعايير التي اتبعها الباحثان لتصنيف مفهوم الذات، نجد أن مفهوم الذات لدى الطلبة ذوي صعوبات التعلم كان منخفضا، وقد اتفقت هذه الدراسة في نتيجتها مع نتائج دراسة كاسي وآخرون (Casey et. Al., 1992) ودراسة ميلزير وروديتي وهوسير وبيرلمان (Meltzer, Roditi, Houser & Perlman, 1998).

ويمكن تفسير هذه النتيجة انطلاقا من التحصيل المنخفض لهذه الفئة في المجال الأكاديمي، المتمثل في أن الفشل في الجانب الأكاديمي يؤثر سلبيا في مفهوم الذات الكلي عند طلبة صعوبات التعلم، ويؤثر أيضا في توافقهم وتكيفهم داخل المدرسة. وهذا كله ينعكس سلبيا على مفهوم الذات لديهم. كما يتأثر مفهوم الذات بالخبرات السلبية الأخرى التي يمر بها طلبة صعوبات التعلم في المدرسة مثل عدم تقبل زملائهم لهم داخل غرفة الصف، إذ عادة ما ينظر إليهم زملاؤهم نظرة سلبية ويحاولون تجنب التعامل معهم نتيجة أدائهم الأكاديمي المنخفض. وبالإضافة إلى ذلك فأن هذه الفئة كثيرا ما تتعرض للنقد اللاذع من الأسرة والمجتمع، اللذين عادة ما يحكمان عليهم من خلال التحصيل الأكاديمي، إذ كثيرا ما يوسمون بألقاب سيئة، وهذا كله يؤثر سلبا في مفهوم الذات لديهم، ويساهم في جعله منخفضا.

يبين الجدول رقم (2) أداء طلبة صعوبات التعلم على فقرات مقياس مفهوم الذات مرتبة تنازليا حسب المتوسطات الحسابية، ويلاحظ أن الفقرة التي حصلت على أعلى المتوسطات هي "أنا شخص مهم بالنسبة لعائلتي" إذ بلغ متوسطها الحسابي (1.6524) وانحرافها المعياري (0..4954)، تلتها الفقرة "أنا أحبّ عائلتي" إذ بلغ متوسطها الحسابي (1.6226) بانحراف معياري (0.4258)، ثم الفقرة "أنا شخص قوي" وحصلت على متوسط حسابي مقداره (1.6078) وانحراف معياري (0.5217). وجاءت الفقرة "أنا راض عن مظهري الخارجي" في المرتبة الرابعة بمتوسط حسابي بلغ (1.5849) وانحراف معياري (0.3658)، تلتها الفقرة "أنا محبوب من عائلتي" وكان متوسطها الحسابي (1.549) وانحرافها المعياري (0.3257).

يلاحظ من الفقرات الخمس السابقة أنها تتعلق بعائلة الفرد ذوي صعوبات التعلم أو بشخصيته. فمن الطبيعي أن يجد الطالب ذو صعوبات التعلم نوعا من الحنان من أفراد أسرته، وخاصة أن مثل هذا الحنان والعطف يفتقده داخل أسوار المدرسة، مما يجعله يشعر أنه مهم بالنسبة لعائلته مقارنة مع وضعه في المدرسة. بالإضافة إلى ذلك فأن هذا الفرد قد يحاول أن يعوض عن أدائه الأكاديمي المنخفض بمحاولة إعطاء فكرة عن نفسه بأنه جذاب وأنيق، وأنه شخص قوي البنية من الناحية الجسمية.

وللإجابة عن سؤال الدراسة الثاني وهو "هل هنالك فروق ذات دلالة إحصائية في مفهوم الذات بين طلبة المرحلة الأساسية تعزى لاختلاف فئات الطلبة (عاديين، صعوبات تعلم)، أو جنسهم، أو مستواهم الدراسي"، تم أولا حساب المتوسطات الحسابية والانحرافات المعيارية فكانت كما في الجدول رقم (3).

جدول (3): المتوسطات الحسابية والانحرافات المعيارية لمفهوم الذات لدى الطلبة موزعة حسب متغيرات الدراسة

	الجنس		فئة الطالب		المستوى الدراسي	
	ذكور	إناث	عادي	صعوبات	3-1	6-4
العدد	119	83	111	91	104	98
المتوسط الحسابي	1.3758	1.3730	1.4253	1.3187	1.4182	1.3326
الانحراف المعياري	0.1791	0.1854	0.1712	0.1748	0.1560	0.1957

يوضح الجدول رقم (3) المتوسطات الحسابية والانحرافات المعيارية موزعة حسب متغيرات الدراسة الثلاث (الجنس، فئة الطلبة، والمستوى الدراسي)، ويلاحظ من الجدول وجود فروق ظاهرية في متوسطات مفهوم الذات لدى طلبة المرحلة الأساسية، ولمعرفة فيما إذا كانت هذه الفروق ذات دلالة إحصائية عند (α = 0.05)، فقد تم إجراء تحليل التباين الثلاثي لأثر متغيرات الجنس، وفئة الطلبة، والمستوى الدراسي على مفهوم الذات لديهم، والجدول رقم (4) يوضح نتائج التحليل:

جدول (4): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي على المقياس الكلي للأداة

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
فئة الطلبة	1	0.536293	0.536293	18.4819	0.001
الجنس	1	0.073354	0.073354	2.5280	0.113
المستوى الدراسي	1	0.190220	0.190220	4.1453	0.043
الخطأ	197	5.716396	0.029017		
الكلي	201	6.607481			

يتبين من بيانات الجدول رقم (4) أن هنالك أثرا له دلالة إحصائية على مستوى مفهوم الذات لدى طلبة المرحلة الأساسية تعزى لاختلاف فئة الطلبة (عاديين، طلبة ذوي صعوبات تعلم)، حيث بلغت قيمة ف (18.4819) وهي دالة إحصائيا عند مستوى الدلالة (α = 0.001). ويتبين من المتوسطات الحسابية والانحرافات المعيارية الواردة في الجدول رقم (3) أن هذه النتيجة كانت لصالح الطلبة العاديين، إذ بلغ متوسط مفهوم الذات لديهم (1.4253) بانحراف معياري مقداره (0.1712)، بينما بلغ المتوسط الحسابي لمفهوم الذات لدى طلبة صعوبات التعلم (1.3187) بانحراف معياري مقداره (0.1712). وقد اتفقت الدراسة الحالية في هذه النتيجة مع نتائج دراسات (Saracoglu, Minden & Wilchesky, 1989; Raviv & Stone, 1991; Casey et. Al., 1992; Jarvis & Justice, 1992; Chapman & Boersma, 1992; Moffatt, 1993; Coleman & Minnett, 1993; Smith & Nagle, 1995; Crabtree, 2000) ، إذ أشارت نتائجها جميعا إلى أن الطلبة العاديين حصلوا على متوسطات أعلى وبشكل دال في مفهوم الذات، مقارنة بالطلبة ذوي صعوبات التعلم، لكن نتائج الدراسة الحالية اختلفت عن نتائج دراسات أخرى مثل دراسات (Crabtree, 2000; Coleman, McHam & Minnett, 1992; Coleman, McHam & Minnett, 1992; Vaughn, Elbaum & Schumm, 1996) ، التي أشارت نتائجها إلى عدم وجود فروق دالة إحصائيا في مفهوم الذات بين الطلبة العاديين والطلبة ذوي صعوبات التعلم.

ويفسر الباحثان هذه النتيجة بكون طلبة صعوبات التعلم يتأثرون سلبيا أكثر من الطلبة العاديين نتيجة أدائهم الأكاديمي المنخفض، لأن هذا الأثر السلبي يعتمد أصلا على إدراكهم غير المناسب لأنفسهم في المجالات الأكاديمية، مما يؤثر سلبا على مفهوم الذات لديهم،على النقيض من الطلبة ذوي التحصيل العادي أو المرتفع الذين قد يؤثر تحصيلهم المرتفع إيجابياً في مفهوم الذات لديهم. يضاف إلى ذلك أن المعلّم عادة ما يدرك أن الطالب الذي يمتلك صعوبات تعلم أنه فاشل في الوضع الدراسي بشكل خاص، وفي الحياة اليومية بشكل عام؛ فقد بينت الدراسات أن المعلمين يعتقدون أن إدراك الذات لدى الأطفال العاديين يكون أعلى مما هو عليه عند الأطفال ذوي صعوبات التعلم (Rowley, 1981; Coleman & Minnett, 1993; Bear, Minke & Manning, 2002). وإن نظرة المعلم السلبية هذه إلى الطلبة ذوي صعوبات التعلم تؤثر سلبا في مفهوم الذات لديهم، لاسيما أن المعلم يكون قدوة مهمة عند الطالب في المرحلة الأساسية وأن القبول السلبي لطلبة صعوبات التعلم عند أقرانهم يؤثر هو الآخر سلباً في مفهوم الذات لديهم.

وبالنسبة لأثر متغير جنس الطالب في مفهوم الذات الكلي لديه فيلاحظ من الجدول رقم (4) عدم وجود أثر ذي دلالة إحصائية لمتغير الجنس في مفهوم الذات لدى طلبة المرحلة الأساسية. وقد اتفقت نتيجة الدراسة الحالية مع نتيجة دراسة (Meltzer, et. al., 1998)، واختلفت مع نتيجة دراسة (Moffatt, 1993) ، ودراسة (Hosley, et al.,1998) التي أشارت نتائجهما إلى وجود فروق دالة في مستوى مفهوم الذات بين الذكور والإناث ولصالح الذكور، وقد يعود ذلك إلى أن مفهوم الذات لدى الطلبة ذوي صعوبات التعلم واحد لا يتأثر بجنس الطالب.

أما المستوى الدراسي فيلاحظ من نتائج تحليل التباين الثلاثي الواردة في الجدول رقم (4) وجود أثر دال إحصائيا للمستوى الدراسي للطالب على مفهوم الذات لديه، إذ بلغت قيمة **ف**= 4.1453 ، وهي دالة إحصائيا عند مستوى (α=0.043). ويلاحظ من المتوسطات الحسابية الواردة في الجدول رقم (3) أن هذه النتيجة كانت لصالح الطلبة الصغار، إذ بلغ المتوسط الحسابي لمفهوم الذات لديهم (1.4182)، والانحراف المعياري (0.1560)، بينما بلغ متوسط مفهوم الذات لدى الطلبة الأكبر سنا (1.3326) والانحراف المعياري (0.1957).

ويرى الباحثان في تفسيرهما لهذه النتيجة أن مفهوم الذات لدى الفرد يزداد وضوحا مع تقدمه في العمر. فمفهوم الذات في بداية المدرسة عادة ما يكون غير واضح لدى الطلبة. وبالإضافة إلى ذلك فأن التأخر الدراسي يبرز بشكل أوضح لدى الطلبة مع تقدمهم في العمر، وبالتالي يكون قد تم وسمهم بأنهم طلبة ذوو صعوبات التعلم، مما يؤثر سلبا في مفهوم الذات لديهم، وجعل متوسط مفهوم الذات الكلي لدى طلبة المرحلة الأساسية من (4-6) يبدو منخفضا مقارنة مع أقرانهم الأقل سنا (1-3).

وللتعرف على الفروق المحتملة في مفهوم الذات بين طلبة المرحلة الأساسية تبعا لاختلاف فئات الطلبة، أو جنسهم، أو مستواهم الدراسي على مجالات المقياس ، فقد تم حساب المتوسطات الحسابية والانحرافات المعيارية لمتغيرات الدراسة على مجالات المقياس الخمسة، إذ يوضح الجدول رقم (5) ذلك:

جدول (5): المتوسطات الحسابية والانحرافات المعيارية لمتغيرات فئات الطلبة والجنس والمستوى التعليمي على مجالات المقياس الخمسة

المتغيرات	المجال	المجال الأول		المجال الثاني		المجال الثالث		المجال الرابع		المجال الخامس	
		م	ع	م	ع	م	ع	م	ع	م	ع
الجنس	ذكر	1.375	0.108	1.388	0.118	1.367	0.115	1.395	0.090	1.364	0.136
	أنثى	1.374	0.110	1.356	0.115	1.384	0.094	1.346	0.146	1.389	0.128
فئة الطلبة	عادي	1.400	0.102	1.408	0.115	1.392	0.111	1.386	0.119	1.422	0.096
	صعوبات	1.354	0.110	1.334	0.108	1.360	0.102	1.360	0.117	1.315	0.148
المستوى الدراسي	3-1	1.378	0.123	1.381	0.130	1.367	0.113	1.389	0.087	1.402	0.106
	6-4	1.371	0.092	1.367	0.102	1.382	0.101	1.359	0.144	1.344	0.151

بالنظر إلى نتائج المتوسطات الحسابية والانحرافات المعيارية لمتغيرات الدراسة الثلاثة على مجالات مقياس مفهوم الذات الخمسة الواردة في الجدول رقم (5)، يتبين وجود فروق ظاهرية في هذه المتوسطات. وللكشف عما إذا كانت هذه الفروق الظاهرية ذات دلالة إحصائية عند مستوى (α=0.05)، فقد أجرى الباحثان تحليل التباين الثلاثي لكل مجال من مجالات المقياس الخمسة، فكانت النتائج كما هي موضحة بالجداول ذوات الأرقام (6، 7، 8، 9، 10).

جدول (6): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الأول (مفهوم الذات العائلي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.003295	0.003295	0.287	0.592
فئة الطلبة	1	0.106639	0.106639	9.310	0.002
الجنس	1	0.000654	0.000654	0.057	0.811
الخطأ	198	2.267839	0.011454		
الكلي	201	2.376398			

يتبين من الجدول رقم (6) عدم وجود فروق ذات دلالة إحصائية في مفهوم الذات العائلي بين طلبة المرحلة الأساسية الدنيا، تعزى إلى اختلاف مستوى الطلبة الدراسي أو جنسهم. لكن الجدول يظهر وجود فروق دالة إحصائيا (**ف**= 9.310، α=0.002) في مستوى مفهوم الذات العائلي لدى الطلبة، تعزى لاختلاف فئتهم (عاديون، صعوبات تعلم)، وقد كانت هذه الفروق لصالح الطلبة العاديين، إذ بلغ متوسطهم الحسابي على هذا المجال (1.400)، بانحراف معياري بلغ (0.102)، بينما كان متوسط الطلبة ذوي صعوبات التعلم (1.354)، والانحراف المعياري (0.110).

ويمكن تفسير هذه النتيجة أن الأسر في المجتمع الأردني عادة ما تقدم الدعم على اختلاف أنواعه من مادي وعاطفي لأبنائها تبعا لتحصيلهم الأكاديمي في المقام الأول، إذ أن للتحصيل الأكاديمي قيمة اجتماعية كبيرة داخل الأسرة.

وبالنسبة لأثر متغيرات الجنس وفئة الطلبة والمستوى الدراسي على مجال المقياس الثاني (مفهوم الذات الاجتماعي) فيوضحها الجدول رقم (7).

جدول (7): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الثاني (مفهوم الذات الاجتماعي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.006749	0.006749	0.552	0.458
فئة الطلبة	1	0.292129	0.292129	23.912	0.001
الجنس	1	0.062059	0.062059	1.4231	0.0871
الخطأ	198	2.418865	0.012216		
الكلي	201	2.766098			

يتضح من الجدول رقم (7) عدم وجود فروق دالة إحصائيا عند مستوى (= 0.05) في مستوى مفهوم الذات لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف جنس الطلبة أو مستواهم الدراسي، بينما تشير نتائج هذا الجدول إلى وجود فروق ذات دلالة إحصائية في مستوى مفهوم الذات لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف فئة الطلبة (عاديون، ذوي صعوبات تعلم)،إذ بلغت قيمة ف (23.912) وهي دالة إحصائيا عند مستوى (α=0.001). وبالنظر إلى المتوسطات الحسابية الواردة في الجدول رقم (5) يتبين أن هذه الفروق كانت لصالح الطلبة العاديين ، إذ بلغ متوسطهم الحسابي على هذا البعد (1.408) بانحراف معياري بلغ (0.115)، بينما بلغ المتوسط الحسابي لطلبة صعوبات التعلم على هذا البعد (1.334) والانحراف المعياري (0.108). وقد اختلفت الدراسة الحالية في هذه النتيجة مع نتائج دراسة (Pires, 2003)، التي أشارت إلى عدم وجود فروق دالة بين طلبة صعوبات التعلم والطلبة العاديين في مفهوم الذات الاجتماعي.

إن للبيئة الاجتماعية التي يعيش فيها الفرد أثراً في الصورة التي يكونها عن نفسه، فعادة ما يكون مفهوم الذات الاجتماعي عند الأفراد انعكاساً للطريقة التي يدركهم بها الآخرون ، وأن الطلبة العاديين يتمتعون بشهرة بين أفراد مجتمعهم أكثر من الطلبة ذوي صعوبات التعلم، فعلى النقيض من طلبة صعوبات التعلم، فإن الطلبة العاديين يجدون معاملة أكثر إيجابية من الناس الذين يتعاملون معهم، مما يكون لديهم اعتقاداً أن الناس الآخرين يحبون التعامل معهم، أما طلبة صعوبات التعلم فإن شعورهم يكون مغايرا لشعور الطلبة العاديين نتيجة تعرضهم للنقد من الآخرين.

وللتعرف على الفروق الممكنة في مفهوم الذات لدى الطلبة تبعاً لاختلاف الجنس والفئة والمستوى الدراسي على المجال الثالث

(مفهوم الذات الجسمي)، فقد تم استخدام تحليل التباين الثلاثي فكانت النتائج كما في الجدول رقم (8).

جدول (8): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الثالث (مفهوم الذات الجسمي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.009727	0.009727	0.862	0.354
فئة الطلبة	1	0.057068	0.057068	2.380	0.124
الجنس	1	0.016072	0.016072	1.425	0.233
الخطأ	198	2.232104	0.011273		
الكلي	201	2.313032			

يتضح من نتائج الجدول رقم (8) عدم وجود فروق دالة إحصائيا عند ($\alpha = 0.05$) في مفهوم الذات الاجتماعي لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف فئة الطلبة، أو مستواهم الدراسي، أو جنسهم.

وللكشف عن إمكانية وجود فروق دالة إحصائيا في مفهوم الذات الشخصي تعزى لمتغيرات الدراسة، فقد أجرى تحليل التباين الثلاثي على هذا المجال، فكانت النتائج كما في الجدول (9).

جدول (9): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الرابع (مفهوم الذات الشخصي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.022002	0.022002	1.651	0.200
فئة الطلبة	1	0.041471	0.041471	3.112	0.079
الجنس	1	0.106808	0.106808	8.016	0.005
الخطأ	198	2.638049	0.013323		
مجموع التباين	201	2.820261			

يتبين من نتائج تحليل التباين الثلاثي في الجدول رقم (9) المتعلقة بمجال الأداة الرابع (مفهوم الذات الشخصي)، عدم وجود فروق دالة في مفهوم الذات الشخصي لدى الطلبة، تعزى لاختلاف مستواهم الدراسي (**ف**= 1.651، $\alpha = 0.200$)، بينما تبين وجود فرق دالة على المجال نفسه تعزى لاختلاف الجنس (**ف**= 8.016، $\alpha = 0.005$)، وبالعودة إلى المتوسطات الحسابية الواردة في الجدول رقم (5) يلاحظ أن هذه النتيجة كانت لصالح الذكور إذ جاء المتوسط الحسابي(=1.395)، والانحراف المعياري (=0.090)، بينما كان المتوسط الحسابي للإناث (1.360) والانحراف المعياري (0.146).

ولتحديد الفروق الممكنة في مفهوم الذات الأكاديمي فقد أجري تحليل التباين الثلاثي فكانت النتائج كما في الجدول (10).

جدول (10): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الخامس (مفهوم الذات الأكاديمي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.085752	0.085752	5.879	0.016
فئة الطلبة	1	0.435332	0.435332	29.847	0.0001
الجنس	1	0.017783	0.017783	1.219	0.270
الخطأ	198	2.887831	0.014585		
الكلي	201	3.556884			

يتضح من الجدول رقم (10) عدم وجود فروق دالة إحصائيا في مفهوم الذات الأكاديمي لدى الطلبة تعزى لاختلاف جنس الطالب، بينما تبين وجود فروق ذات دلالة في مستوى مفهوم الذات الأكاديمي لدى الطلبة تعزى لاختلاف فئة الطلبة (**ف**= 29.847، $\alpha = 0.0001$)، ولصالح الطلبة العاديين ، إذ بلغ متوسطهم الحسابي على هذا المجال (1.422) والانحراف المعياري (0.096)، بينما بلغ متوسط طلبة صعوبات التعلم على المجال نفسه (1.315) والانحراف المعياري(0.148). وقد اتفقت نتيجة الدراسة الحالية مع نتائج دراسات (Priel & Leshem, 1990; Grolnick & Ryan, 1990; Coleman & Minnett, 1993; Vaughn, et (al., 1996; Bear et al., 2002). أما بالنسبة لمتغير المستوى الدراسي فقد أشارت النتائج إلى وجود فروق دالة في مستوى مفهوم الذات الأكاديمي للطلبة، تعزى لاختلاف مستواهم الدراسي (**ف**= 5.879، $\alpha = 0.016$) ولصالح الطلبة الأصغر سنا.

ويمكن تفسير هذه النتيجة على أساس أن الطلبة العاديين يكونون أكثر رضا عن مستواهم الدراسي، وأكثر استيعابا لما يشرحه المعلم، وأكثر قدرة على حل الواجبات المدرسية والحصول على علامات جيدة في المواد المختلفة. لكن طلبة صعوبات التعلم عادة ما يعاملون من معلميهم أقرانهم معاملة أكثر سلبية مما يعامل به الطلبة العاديين، ولا شك أن هذه النشاطات تشكل مفهوم الذات الأكاديمي لدى الطلبة ، إذ إنها تجعله يبدو أكثر إيجابية لدى الطلبة العاديين، وأكثر سلبية لدى طلبة صعوبات التعلم.

أما بالنسبة لحصول الطلبة الأصغر سنا على متوسطات أعلى من الطلبة الأكبر سنا على مجال مفهوم الذات الأكاديمي، فربما يتمثل في أن التأخر الدراسي لدى طلبة صعوبات التعلم يكون قد أصبح أكثر وضوحا مع تقدمهم في المستوى الدراسي، إذ يصل معظمهم إلى هذه المرحلة وقد وسم بأنه متأخر دراسيا، وأن مفهوم الذات في بداية المدرسة لا يكون قد اتضحت معالمه بعد، ولا يزال في طور التشكيل.

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Title: For Which Students with Learning Disabilities Are Self-Concept Interventions Effective? , By: Elbaum, Batya; Vaughn, Sharon, Journal of Learning Disabilities, 36 (2): 8-10.

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المجلة الأردنية في العلوم التربوية، مجلد 1، عدد 2، 2005، 123-134

دراسة مقارنه بين مفهوم الذات لدى طلبة ذوي صعوبات التعلم والطلبة العاديين في محافظة إربد بالأردن

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تاريخ تسلم البحث 2004/6/30 تاريخ قبوله 2005/1/6

ملخص: هدفت هذه الدراسة إلى التعرف على مستوى مفهوم الذات لدى طلبة ذوي صعوبات التعلم والعاديين في المرحلة الأساسية في محافظة إربد بالأردن، ولتحقيق ذلك طورت أداة لقياس مفهوم الذات لدى الطلبة، تتوافر فيها شروط الصدق والثبات المناسبة، ومن ثم توزيعها على عينة مكونة من (202) من الطلبة والطالبات (119 من الذكور، و83 من الإناث)، منهم (111) طالبا عاديا، و(91) طالبا من طلبة ذوي صعوبات التعلم خلال الفصل الثاني للعام الدراسي 2004/2003م في محافظة إربد بالأردن. كشفت نتائج الدراسة أن مستوى مفهوم الذات لدى طلبة ذوي صعوبات التعلم كان منخفضا، وبينت أيضا النتائج أن طلبة ذوي صعوبات التعلم حصلوا على متوسطات أدنى على مقياس مفهوم الذات وبشكل دال مقارنة مع الطلبة العاديين. كذلك أظهرت الدراسة إلى عدم وجود فروق دالة في مستوى مفهوم الذات لدى الطلبة تعزى لاختلاف الجنس.
(الكلمات المفتاحية: مفهوم الذات، صعوبات التعلم).

A Comparative Study of Self-concept among Normal Students and Learning Disability Students in Irbid Governorate, Jordan

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***Abstract**: The purpose of this study was to investigate the level of self-concept of normal students and learning disability students in the early elementary stage in Irbid governorate, Jordan. To achieve this purpose, a questionnaire was developed which demonstrated adequate reliability and validity. A sample of (202) student, (119) male and (83) female of normal students and learning disability completed the questionnaire in Irbid governorate during the second semester of 2003-2004. The Results revealed that the level of self-concept among students with learning disability was low; it was lower than that of normal students. The results also revealed that there were no significant differences due to student gender.(**Keywords**: Self-councept, Learning disability).*

الخلفية النظرية: تعد صعوبات التعلم Learning disabilities من الموضوعات الحديثة التي شهدت نموا متسارعا، واهتماما متزايدا في مجال التربية الخاصة والإرشاد النفسي، وهي من أكثر المشكلات التي تؤرق التربويين والمرشدين وعلماء النفس والتربية الخاصة والآباء في العصر الحالي. وتشير التقديرات والإحصائيات إلى أن ما نسبته (2-10%) من أفراد أي مجتمع يعانون من صعوبات التعلم (American Psychiatric Association, 1994; Silver, 1991).

وتشير الدراسات الحديثة إلى أن الأثر السلبي لصعوبات التعلم لا يقتصر على الأداء الأكاديمي داخل المدرسة، و إنما يؤثر في شتى مناحي حياة الفرد، إذ يؤثر في علاقاته مع الآخرين، وعلاقاته داخل أسرته، وفي تفاعلاته الاجتماعية (Silver, 1986) .

وتعرف اللجنة المشتركة لصعوبات التعلم في الولايات المتحدة صعوبة التعلم بأنها " مصطلح وراثي يشير إلى مجموعة غير متجانسة من الاضطرابات في النطق، والقراءة، والكتابة، والمنطق أو القدرات الحسابية. وهي اضطرابات داخلية بالنسبة للشخص، ويفترض أنها تنتج عن مرض أو خلل وظيفي في الجهاز العصبي المركزي، مع أن صعوبة التعلم ترافق حالات أخرى (مثل الاضطرابات الحسية، والتخلف العقلي ،والاضطرابات الاجتماعية والعاطفية، والتدريس غير الكافي/ غير الملائم، والعوامل الوراثية، والعوامل النفسية)، (National Information Center for Children and Youth with Disabilities [NICHCY], 2003).

ويواجه هؤلاء الأطفال صعوبات في جوانب محدّدة من أدائهم الأكاديمي (Kavale & Forness, 2000) ، بالإضافة إلى الصعوبات الأكاديمية. وكما يظهر العديد منهم مشكلات سلوكية أو نقصاً في المهارات الاجتماعية (Gettinger & Koscik, 2001; Kavale & Forness, 1996)، ويتعرضون للرفض وعدم التقبل من نظرائهم العاديين (Kuhne & Wiener, 2000; Ochoa & Olivarez, 1995). ومثل هذه الأمور قد تؤثر سلبا في تشكيل مفهوم الذات لدى هؤلاء الطلبة الذين يعانون من صعوبات في التعلم (Johnson, 1995).

ومفهوم الذات عند روجرزRogers هو تصور كلي يتكون من إدراكات الفرد عن ذاته في مفردها، أو في علاقاتها بالأشخاص الآخرين والأشياء الموجودة في البيئة أي علاقتها بالحياة، إضافة إلى القيم والأحكام المتصلة بهذه الإدراكات (الشناوي، 1994).

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ويرى براكن (Bracken, 1992) أن مفهوم الذات يجسّد خبرات الشخص وتقييماته لتفاعلاته مع الناس والبيئة من حوله، ويشمل أنماط التعزيز التي يحملها الشخص عن نفسه، وتاريخه من النّجاح والفشل. أما " الودي " (Allodi, 2000) فيرى أن مفهوم الذات يشير إلى إدراكات الفرد ومشاعره المتعلقة بهويته الخاصة التي تميزه عن غيره.

ويعرف تام وزملاؤه (Tam et al., 2003) مفهوم الذات بأنه إطار مرجعي لفكرة الفرد عن نفسه يتكون خلال تفاعل الفرد مع العالم المحيط به. وعرفه كيم وكاسير ولي (Kim, Kasser, & Lee, 2003) بأنه مجموعة الاعتقادات التي يحملها الأفراد حول أنفسهم.

وهنالك ثلاثة مظاهر معروفة لمفهوم الذات يحملها أي فرد عن نفسه، وهي كما يرى لورنس (Lawrence, 1996) :

1. صورة الذات *Self-image*: وتشير إلى ما عليه الشّخص فعليا، وهي أهم عناصر مفهوم الذات، ويطلق عليها الذات الحقيقية *Real Self*.
2. مفهوم الذات المثالي *Ideal self*: وتشير إلى الصورة التي يود الشّخص أن يكون عليها.
3. تقدير الذات *Self-esteem*: وتشير إلى مشاعر الشّخص حول الفرق بين ما هو عليه (صورة الذات)، وما يودّ أن يكون (الذات المثالية).

ويعد مفهوم الذّات بالإضافة إلى تقدير الذات من أكثر الأمور التي تؤثّر في إنجاز الطّلاب وتحصيلهم الأكاديمي في المدرسة (Grantham, & Ford, 2003). ومن المعروف أن مفهوم الذات الموجب الذي يحمله الفرد عن نفسه لا يؤثر في إنجازه الأكاديمي فحسب، و إنما يؤثر كذلك وبشكل واضح في تطوّر شخصيته على المدى البعيد (Harter, 1993). وتؤكد معظم الدراسات الحديثة أن الأفراد ذوي صعوبات التعلم يعانون من مستوى منخفض في مفهوم الذات. وقد بين الباحثون الذين يهتمون بدراسة مفهوم الذّات لدى الأطفال ذوي صعوبات التعلم أن فشل هؤلاء الأطفال الأكاديمي يؤثّر سلبا في مفهوم الذّات لديهم (Gans, Kenny & Ghany, 2003; Montgomery, 1994) ، فقد بين إلبوم و فاوجن (Elbaum & Vaughn, 2003) أن الخبرات السلبية التي يمر بها الأفراد ذوي صعوبات التعلم في المدرسة، والمتعلقة بالأداء الأكاديمي المنخفض، والقبول السلبي عند أقرانهم نتيجة هذا الأداء، يؤثر سلبا في مفهوم الذّات لديهم.

إن وسم الطفل بأنه من ذوي صعوبات التعلم، سوف يؤثر في تقديرات الآباء والمعلمين لمفهوم الذات عند هؤلاء الطلبة مما يجعلهم يقدرون أنفسهم بشكل منخفض مقارنة بأقرانهم العاديين (Montgomery, 1994). فقد أدرك " بندورا" مبكراً أن الحكم على الذات الذي يصدره الأشخاص المقربون من الفرد يؤثر بشكل مباشر في أفعاله وتصرفاته، وبالتالي على مفهوم الذات لديه (Pisecco et al., 2001). ولا شك أن ذلك يؤثر سلبا في طريقة تعامل الكبار مع هذه الفئة من الطلبة، التي تتأثر هي سلبيا بذلك، مما يؤثر في توافقها النفسي والاجتماعي والأكاديمي.

وقد أكد شابمان (Chapman, 1988) أن الأطفال ذوي صعوبات التعلم يدركون قدراتهم ومهاراتهم بشكل سلبي، وذلك بسبب المستوى المتدني لأدائهم على هذه المهارات والقدرات واعتقادهم أن النجاح والإنجاز في المجال الأكاديمي في المستقبل شيئان مستحيلان بالنسبة لهم، بالإضافة إلى الاستسلام السريع عندما يتعرضون للمهمّات الصّعبة.

وبالإضافة إلى ذلك يربط المربون والتربويون بين مفهوم الذات لدى الطالب وبين حالته التربوية والأكاديمية، فهم يفترضون أن الأطفال ذوي صعوبات التعلم عادة ما يمتلكون مفهوماً منخفضا للذات، بينما يمتلك الأطفال الموهوبون مفهوماً مرتفعا للذات (Prout, Marcal, & Marcal, 1992)، ويرى هيويس و بيكر (Hughes & Baker, 1990) أن مشاعر مفهوم الذات لدى ذوي صعوبات التعلم تكون منخفضة وضعيفة بشكل عام نتيجة لخبرة الإذلال ، والرفض، والفشل التي يمرون بها عموما.

ومن الأسباب التي تؤدي إلى مفهوم الذات المنخفض عند ذوي صعوبات التعلم يتمثل في حاجة هؤلاء الأفراد للدعم الأسري أكثر من الطّفل الطّبيعي، حتى يتحسن مستوى مفهوم الذات عندهم. لكن هذا الدعم لا يتوفر غالباً (Rowley, 1981). ومن أسباب ذلك أيضاً أن الطالب إذا بدأ بشكل فاشل داخل قاعة الدروس، فإن المعلّم يدركه على أنّه فاشل في كل شئ ويعامله على أنه فاشل، وهذا يعزّز مفهوم الذات السلبي لديه (Rowley, 1981)، فغالبا ما ينظر المعلمون إلى الأطفال ذوي صعوبات التعلم ويقدرون مفهوم الذات لديهم على أنه أقل مما هو لدى الطلبة العاديين، مما يؤدي إلى سيادة مشاعر التعاسة والسلبية لديهم مقارنة بأقرانهم العاديين (Bear, Minke & Manning, 2002).

وفي السياق نفسه يرى كافالي و فورنيس (Kavale & Forness, 2000) أن ذوي صعوبات التعلم عادة ما يحملون مشاعر مسكوت عنها تتضمن تقديرا كليا منخفضا للذات، ويعد تقدير الذات الكلي أهم مكونات مفهوم الذات، وهو اكثر من مجرد إفصاح موجز عن إدراك الفرد لذاته من خلال ميادين مختلفة من الكفاءة الاجتماعية والسلوكية والأكاديمية والجسمية (Bear, Minke & Manning, 2002).

ويرى كليفير وبير وجوفونين (Clever, Bear & Juvonen, 1992) أن من المتوقّع انتشار تقدير الذات الكلي المنخفض بين الطّلاب ذوي صعوبات التعلم، لأنه يستند أصلا على إدراكهم لأنفسهم بشكل غير مناسب في المجالات الأكاديمية ، والسلوكية، والاجتماعية؛ لأن لهذه المجالات قيمة عالية عند الأطفال كافة، بما في ذلك ذوي صعوبات التعلم. ويؤكد كلوموك و كوسدين (Kloomok & Cosden, 1994) أن تقدير الذات الكلي يمكن أن يساند ويُقوى بالدعم الاجتماعي الملائم والمتواصل الذي يقوم به الوالدان، والمعلمون، والأصدقاء، وزُمَلاء الدِّرَاسَة.

يتبين مما سبق أن مفهوم الذات السلبي الذي يحمله الطلبة ذوي صعوبات التعلم عن أنفسهم يؤثر كثيرا في سلوكهم وتصرفاتهم، فقد بين ليونج ولو (Leung & Lau, 1989) أنّ الأطفال الذين يملكون مفهوماً سلبياً تجاه مهاراتهم الأكاديمية يظهرون مستويات أعلى من السّلوك الجانح. ويرى " ليونج و لو" أن الأطفال الذين لديهم مفهوم ذات سلبي يلجأون إلى السلوكات الجانحة على أنها وسائل لتحسيّن صورة الذّات لديهم، وبشكل أكثر تحديدا، فانهما يريان أن انشغال الطلبة بمثل هذه السّلوكات يساعدهم على تحقيق التقبل لدى أقرانهم، وهذا يحسّن من صورة الذّات لديهم. وقد بين جونسون (Johnson, 1995) أن صعوبات التعلم تؤثّر في الصّحة العقلية، وفي النشاطات الاجتماعية للأطفال إضافة إلى أثرها في تقديرهم لذاتهم.

الدراسات السابقة: أجرى ساراكوجلو ومينـدين وويلتشيسكاي (Saracoglu, Minden & Wilchesky, 1989) دراسة على (34) طالبا من طلبة صعوبات التعلم و(31) طالبا عاديا، أشارت نتائجها إلى أن لدى طلبة صعوبات التعلم مستويات أقل وبشكل دال في مفهوم الذات والتوافق الأكاديمي مقارنة بالطلبة العاديين، وبالإضافة إلى ذلك أشارت النتائج إلى وجود علاقة دالة إيجابية بين مفهوم الذات والكفاءة الذاتية Self-efficacy.

وأجرى بريل وليشيم (Priel & Leshem, 1990) دراسة هدفت إلى التعرف على الفروق في إدراك مفهوم الذات بين طلبة صعوبات التعلم والطلبة العاديين، وقد تكونت عينة الدراسة من (44) طالبا من ذوي صعوبات التعلم و(36) طالبا عاديا. وأشارت النتائج إلى أن لدى الطلبة ذوي صعوبات التعلم مستوى أدنى في مجال القدرة المعرفية من الطلبة العاديين . وإضافة إلى ذلك أشارت النتائج إلى أن الإدراك الذاتي لتقبل الزملاء peer acceptance كان متشابها بين المجموعتين.

وأجرى جرولنيك وريان (Grolnick & Ryan, 1990) دراسة في نيويورك New York بهدف مقارنة مفهوم الذات بين مجموعتين من الطلبة (صعوبات التعلم، وطلبة عاديين) بواقع (37) طالبا لكل مجموعة. وأشارت النتائج إلى أن الطلبة ذوي صعوبات التعلم حصلوا على متوسطات أدنى وبشكل دال في القدرة المعرفية المدركة ذاتيا وفي مفهوم الذات الأكاديمي مقارنة مع بقية المجموعات.وبالإضافة إلى هذا أشارت النتائج إلى عدم وجود فروق دالة بين المجموعات في مفهوم الذات العام.

وأجرى رافيف وستون (Raviv & Stone, 1991) دراسة على عينة مكونة من (49) طالبا من ذوي صعوبات التعلم و(49) طالبا عاديا بهدف مقارنة صورة الذاتself-image لديهما. وأشارت النتائج أن الطلبة ذوي صعوبات التعلم أحرزوا متوسطات أدنى على أربعة أبعاد من أصل عشرة أبعاد على مقياس صورة الذات مقارنة بالطلبة العاديين. وأشارت النتائج كذلك إلى أن الطلبة الذين تم تشخيصهم مؤخرا على أنهم من ذوي صعوبات التعلم، أحرزوا متوسطات أعلى وبشكل دال على مقياس صورة الذات من الطلبة الذين شخصوا سابقا على أن لديهم صعوبات تعلم. وكشفت النتائج إلى أن آباء الطلبة ذوي صعوبات التعلم أدركوا أن لدى أطفالهم صورة أدنى للذات من أقرانهم العاديين.

وأجرى كاسي و ليفي وبراون، وبروكس-جين (Casey, Levy, Brown, Brooks-Gunn, 1992) دراسة على عينة مكونة من (39) طفلاً من ذوي صعوبات القراءة وآبائهم، وعينة مكونة من (28) طفلا لا يعانون من صعوبات القراءة، بهدف اختبار مفهوم الذات لدى العينتين.وقد كشفت النتائج عن أن الأطفال ذوي صعوبات التعلم قدروا أن مفهوم الذات لديهم أقل من تقديرهم لمفهوم الذات لدى الأطفال العاديين. وبالإضافة إلى ذلك قدر آباء الأطفال ذوي صعوبات القراءة مفهوم الذات لدى أبنائهم بشكل أقل وبشكل دال من تقديرهم لمفهوم الذات لدى الأطفال الآخرين.

كما أجرى جارفيس وجيستس (Jarvis & Justice, 1992) دراسة هدفت إلى مقارنة الحساسية الاجتماعية Social Sensitivity ومفهوم الذات بين طلبة صعوبات التعلم (15 طالبا)، والطلبة العاديين (15 طالبا). وتم تقييم أربعة أبعاد لمفهوم الذات (الدافعية Motivation، والتوجه نحو المهمة Task Orientation، والقدرة على حلّ المشكلات problem-solving ability، والعضوية في الصف Class membership). وقد أشارت النتائج إلى أن مستويات مفهوم الذات على الأبعاد الأربعة كانت أقل عند طلبة صعوبات التعلم مما هي عليه عند الطلبة العاديين.

وفي دراسة شابمان وبويرسما (Chapman & Boersma, 1992) التي أجريت في نيوزيلندا على (78) طالبا من ذوي صعوبات التعلم، و(71) طالبا من ذوي التحصيل المتوسط، تمت مقارنة مفهوم الذات بين المجموعتين. وقد بينت النتائج أن طلبة صعوبات التعلم حصلوا على متوسطات أدنى على مقياس مفهوم الذات من ذوي التحصيل المتوسط.

وأجرى كوليمان ومتشام ومينيت (Coleman, McHam & Minnett, 1992) دراسة هدفت إلى التعرف على الفروق في مفهوم الذات والشعور بالوحدة النفسية بين الطلبة منخفضي التحصيل وطلبة صعوبات التعلم، وتكونت عينة الدراسة من (85) طفلا يعانون من صعوبات التعلم (54 من الذكور، و من 31 الإناث)، وأشارت النتائج إلى عدم وجود فروق دالة بين المجموعتين على مقياس مفهوم الذات، وأن أطفال صعوبات التعلم كانوا أكثر شعوراً بالوحدة مقارنة بالأطفال منخفضي التحصيل.

وفي الدراسة التي أجراها موفات (Moffatt, 1993) على (50) طالبا نصفهم من طلبة صعوبات التعلم والنصف الآخر من الطلبة العاديين، تم اختبار مفهوم الذات لدى المجموعتين. وأشارت النّتائج إلى أن طلبة صعوبات التعلم حصلوا على نتائج أدنى في مفهوم الذات من الطلبة العاديين. وبالإضافة إلى ذلك بينت النتائج وجود فروق دالة في مستوى مفهوم الذات بين الذكور والإناث ولصالح الذكور. لكن النتائج لم تظهر وجود علاقة بين العمر والحالة الاقتصادية والاجتماعية وبين مفهوم الذات.

وقد أجرى كوليمان ومينيت (Coleman & Minnett, 1993) دراسة في الولايات المتحدة كان من ضمن أهدافها التعرف على الفروق في مفهوم الذات بين الطلبة العاديين والطلبة ذوي صعوبات التعلم. وقد أشارت النّتائج إلى أن الطلبة العاديين أحرزوا متوسطات أعلى من الطلبة ذوي صعوبات التعلم على مقياس مفهوم الذات الأكاديمي. وأن الطلبة ذوي صعوبات التعلم أحرزوا متوسطات أعلى وبشكل دال على مقياس مفهوم الذات الاجتماعي مقارنة بالطلبة العاديين. وأن المعلمين قدروا أن إدراك الذات لدى الأطفال العاديين أعلى مما هو عليه عند الأطفال ذوي صعوبات التعلم.

وقد أجرى سميث وناجل (Smith & Nagle, 1995) دراسة في الولايات المتحدة الأمريكية على عينة مكونة من (59) طالبا من ذوي صعوبات التعلم و(57) طالبا عاديا، بهدف التحقق من الفرضية التي ترى أنّ الأطفال ذوي صعوبات التعلم يدركون أنفسهم على أنهم أقل كفاءة من الأطفال الآخرين من حيث مستوى الذّكاء، والمهارات الأكاديمية، والسلوك، والتقبل الاجتماعي. وأشارت النتائج إلى عدم صحة الفرضية السابقة إذ لم يكن هنالك فروق بين المجموعتين في إدراكهم لمفهوم ذواتهم.

وهناك دراسة قام بها فاوجن وإلبوم وشوم (Vaughn, Elbaum & Schumm, 1996) وأجريت في ولاية ميامي الأمريكية على (16) طالبا من ذوي صعوبات تعلم، و(27) طالبا ذوي التحصيل المنخفض، و(21) طالبا من متوسطي ومرتفعي التحصيل. وقد أظهرت النتائج عدم وجود فروق دالة في تقدير الذات الكلي بين المجموعات الثلاث، لكنها أشارت إلى أن طلبة صعوبات التعلم أحرزوا نتائج أقل وبشكل دال في مفهوم الذات الأكاديمي مقارنة مع باقي المجموعات.

وقد أجرى هيلمس (Helms, 1996) دراسة في جزيرة رود Rhode Island على (249) طالبا من طلبة الصفوف الرابع وحتى الثاني عشر، منهم (135) طالبا من ذوي الصعوبات العاطفية Emotional disabilities و (114) طالبا من ذوي صعوبات التعلم. وقد بينت النتائج أن الطلبة العاديين أحرزوا متوسطات أعلى وبشكل دال في الإجهاد الأكاديمي ومفهوم الذات الأكاديمي، مقارنة بالطلبة ذوي صعوبات التعلم وذوي الصعوبات العاطفية.

وأجرى سيمور (Seymour, 1998) دراسة حول مفهوم الذات الحالي والمستقبلي لدى ثلاث مجموعات من المراهقين: مجموعة ذوي صعوبات التعلم يدرسون في مدارس خاصة بهم، وطلبة ذوي صعوبات التعلم يدرسون في مدارس حكومية، وطلبة عاديين يدرسون في مدارس عامة، وقد أشارت النتائج إلى أن مفهوم الذات الأكاديمي لدى الطلبة ذوي صعوبات التعلم الذين يدرسون في مدارس حكومية كان أكثر سلبية من المجموعتين الأخريين، وكشفت عن وجود علاقة دالة بين مفهوم الذات الحالي وبين مفهوم الذات المستقبلي لدى الطلبة العاديين. وبالإضافة إلى ذلك أظهرت النتائج عدم وجود فروق دالة بين المجموعات في تقدير الذات العام، وفي مفهوم الذات في الميادين غير الأكاديمية.

أما الدراسة التي أجراها ميلزير وروديتي وهوسير وبيرلمان (Meltzer, Roditi, Houser & Perlman, 1998) في ولاية ماساشوسيتس Massachusetts الأمريكية على (663) طالبا من ذوي صعوبات التعلم و(57) معلماً، فقد هدفت إلى التعرف على مفهوم الذّات العامّ، ومفهوم الذّات الأكاديمي لدى هؤلاء الطلبة. وقد أشارت النتائج إلى أن مفهوم الذات عند الطلبة ذوي صعوبات التعلم كان أقل وبشكل دال من مفهوم الذّات عند الطلبة متوسطي التحصيل وفي كل المجالات. وعلاوة على ذلك أظهرت النتائج وجود فروق دالة بين تَقييم الطّلاب ذوي صعوبات التعلم لمفهوم ذواتهم وبين تقييم معلميهم لهم. لكنها أشارت في الوقت نفسه إلى عدم وجود فروق دالة بين الجنسين في مفهوم الذات الأكاديمي ومفهوم الذات العام.

وقام هوسلي وهوبير وجروبير (Hosley, Hopper & Gruber, 1998) بدراسة حول مفهوم الذات في الولايات المتحدة على (28) طالبا من ذوي صعوبات التعلم، منهم (11) ذكورا و(16) إناثا تراوحت أعمارهم بين (11-14) عاماً. وقد أشارت النتائج إلى أن العينة أحرزت متوسطات عالية نسبياً في مجال تقدير الذات الكلية Global Self-worth. لكنها أحرزت متوسطات أدنى من المجموعة الضابطة وبشكل دال على المقياس الثانوي للكفاءة الدّراسية والتّصرفات السلوكية. وبالإضافة إلى ذلك بينت النتائج أن الذكور أحرزوا متوسطات أعلى من الإناث وبشكل دال في مجال المهارة الآلية، ومجال القدرة الحركية في اختبار مفهوم الذات.

وأجرى كرابتري (Crabtree, 2000) دراسة في المملكة المتحدة هدفت إلى مقارنة مفهوم الذات لدى ثلاث عينات من الطلبة: طلبة صعوبات التعلم يدرسون في مدارس خاصة بهم **(ن= 111)**، وطلبة صعوبات تعلم يدرسون في مدارس عامة ويتلقون دعما تربويا خاصا **(ن= 69)**، وطلبة عاديين **(ن= 334)**. وأظهرت النتائج أن طلبة صعوبات التعلم الذين يدرسون في المدارس العامة أظهروا مستويات أدنى في مفهوم الذات فيما يتعلق بالقدرة الثّقافية العامّة والقدرة الرياضية مقارنة مع المجموعتين الأخريين.

كما أجرى إلبوم (Elbaum, 2002) تحليلا لنتائج (40) دراسة تناولت مفهوم الذات لدى ذوي صعوبات التعلم ، وأشارت نتائج التحليلات إلى أن ذوي صعوبات التعلم الذين يدرسون في المدارس العادية أظهروا نتائج أدنى في مفهوم الذات من الطلبة ذوي صعوبات التعلم، الذين يدرسون في مدارس خاصة بهم.

وأجرى بير ومينك ومانينج (Bear, Minke, & Manning, 2002) تحليلا لنتائج (61) دراسة أجريت على ذوي صعوبات التعلم، إذ أشارت نتائج التحليل إلى أن طلبة صعوبات التعلم يدركون مفهوم الذات الأكاديمي لديهم بشكل أكثر سلبية من الطلبة العاديين.

وأجريت دراسة في كندا قام بها بيريس (Pires, 2003) بهدف اختبار العلاقة بين مفهوم الذات الاجتماعية، والشعور بالوحدة، وتقدير الذات لدى عينة مكونة من (232) طالبا منهم (117) طالبا من ذوي صعوبات التعلم. وقد أشارت النتائج إلى عدم وجود فروق

دالـة فـي مـستوى تقـدير الـذات ومفهـوم الـذات الاجتمـاعي بـين المجموعتين، وبالإضافة إلى ذلك فإنها كشفت عن وجود علاقة دالة سلبية بين الشعور بالوحدة، وتقدير الذات، ومفهوم الذات.

وأجرى مانسيل (Mansell, 2004) دراسة كان من ضمن أهدافها مقارنـة مفهـوم الـذات لـدى الطلبـة ذوي صـعوبات الـتعلم اللفظيـة والطلبة العاديين. وقد أشارت النتائج إلى أن الطلبة الذين لديهم صعوبات التعلم اللفظية حصلوا على متوسطات أعلى وبشكل دال على مقياس مفهوم الذات في مجالي السعادة والرضا عن الذات مقارنة بالطلبة العاديين.

يلاحظ من الدراسات السابقة أنها تناولت متغيرات مختلفة في علاقتها بمفهوم الذات مثل: المستوى الدراسي للطالب والجنس، وركز بعضها على مقارنة مفهوم الذات بين الطلبة ذوي صعوبات التعلم والطلبة العاديين، وقد جاءت هذه الدراسات متغايرة في نتائجها. وعلاوة على ذلك يظهر أن معظم هذه الدراسات أجريت في بيئات أجنبية، مما يعطي دافعا لإجراء دراسة مماثلة على طلبة صعوبات التعلم في البيئة الأردنية تتناول هذه المتغيرات ومتغيرات أخرى، وهو ما حاولت هذه الدراسة القيام به.

مشكلة الدراسة وأهدافها: يعد المفهوم الذي يحمله الطالب عن نفسه من أهم الأمور التي تؤثر في تحصيله الأكاديمي بشكل خاص، ووضعه الدراسي بشكل عام، ويعد طلبة صعوبات التعلم من اكثر فئات الطلبة تأثرا بهذا الوضع، مما يترك أثرا سلبيا على شخصياتهم وعلى توافقهم وتكيفهم داخل المدرسة. لذا جاءت هذه الدراسة لتحقيق الهدفين التاليين:

- التعرف على مستوى مفهوم الذات لدى ذوي صعوبات التعلم ومقارنته مع مفهوم الذات لدى الطلبة العاديين.
- الكشف عما إذا كان مفهوم الذات لدى الطلبة ذوي صعوبات التعلم يختلف باختلاف جنس الطالب أو مستواه الدراسي.

أسئلة الدراسة

1. ما مستوى مفهوم الذات لدى طلبة صعوبات التعلم في محافظة إربد؟
2. هل هنالك فروق ذات دلالة إحصائية في مفهوم الذات بين طلبة المرحلة الأساسية تعزى لاختلاف فئة الطلبة (عاديين، ذوي صعوبات تعلم)، أو الجنس ،أو المستوى الدراسي والتفاعل بينهما؟

أهمية الدراسة: تكمن أهمية الدراسة الحالية في سعيها إلى التعرف على مستوى مفهوم الذات لدى فئة هامة من الطلبة، وهم طلبة صعوبات التعلم بهدف تدعيم الجوانب الإيجابية في مفهوم الذات لديهم، والتعرف على الجوانب السلبية في مفهوم الذات، وذلك بهدف وضع البرامج التربوية والوقائية والإرشادية في محاولة لتحسينه، مما يكون له أثر أكبر في التوافق الأكاديمي والشخصي لهؤلاء الطلبة.

التعريفات الإجرائية

مفهوم الذات: مجموعة الاعتقادات التي يحملها الطلبة حول أنفسهم والمقاسة من خلال أداء الطالب على أداة الدراسة.

صعوبات التعلم: مصطلح عام يشير إلى مجموعة متباينة من الاضطرابات التي تظهر من خلال صعوبات واضحة في اكتساب قدرات الاستماع واستخدامها، والكلام، والقراءة، والكتابة، والاستدلال، أو القدرات الرياضية.

محددات الدراسة: تتحدد نتائج هذه الدراسة بعينة الدراسة ومدى تمثيلها لمجتمع الطلبة ذوي صعوبات التعلم، و بمدى صدق الأداة المستخدمة فيها وثباتها.

مجتمع الدراسة وعينتها: تكون مجتمع الدراسة من طلبة المرحلة الأساسية الدنيا جميعهم (الصف الأول حتى الصف السادس) في محافظة إربد في الفصل الدراسي الثاني من العام الدراسي (2004/2003). في حين تكونت عينة الدراسة من (202) من الطالبة والطالبات، منهم (119) من الذكور، و(83) من الإناث، وتم اختيار مدارسهم بالطريقة القصدية المتيسرة. والجدول رقم (1) يبين توزيع أفراد عينة الدراسة حسب متغيراتها.

جدول (1): توزيع أفراد عينة الدراسة حسب متغيرات الفئة والجنس و المستوى الدراسي

المتغير	الفئة	العدد	النسبة
الجنس	ذكر	119	58.91
	أنثى	83	41.09
فئة الطلبة	عاديون	111	54.95
	ذوو صعوبات تعلم	91	45.05
المستوى	أول-ثالث	104	51.49
	رابع-سادس	98	48.51
	المجموع	202	100.0

أداة الدراسة: قام الباحثان ببناء مقياس لمفهوم الذات يتناسب وعينة الدراسة بعد الاطلاع على الأدب النظري المتعلق بموضوع الدراسة، والاطلاع على عدد من مقاييس مفهوم الذات وهي: استبيان مفهوم الذات لتام وزملائه (Tam et al., 2003)، واستبيان مفهوم الذات لروسيل (Russell, 1999)، ومقياس بيرس- هاريس لمفهوم الذات عند الأطفال (Piers-Harris Children's Self-Concept Scale) (Piers, 1994)، ومقياس مفهوم الذات عند الطلبة (Gresham, Elliott & Evans-Fernandez, 1993)، ومقياس مفهوم الذات متعدد الأبعاد لبراكين (MSCS) (Bracken, 1992)، ومقياس مفهوم الذات للمعوقين حركيا للمومني والصمادي (1995). وقد تكون المقياس بصورته النهائية من جزئين رئيسيين هما:

الجزء الأول: ويتضمن معلومات عامة عن المستجيب.

الجزء الثاني: يتضمن فقرات المقياس التي بلغ عددها (51) فقرة موزعة إلى خمسة أبعاد هي:

أولا: مفهوم الذات العائلي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (1-11).

ثانيا: مفهوم الذات الاجتماعي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (12-22).

ثالثا: مفهوم الذات الجسمي وبلغ عدد فقراته (6) فقرات وهي الفقرات من (23-28).

رابعا: مفهوم الذات الشخصي وبلغ عدد فقراته (11) فقرة، وهي الفقرات من (29- 39).

خامسا: مفهوم الذات الأكاديمي وبلغ عدد فقراته (12) فقرة، وهي الفقرات من(40-51).

صدق المقياس: قام الباحثان بحساب إجراءات الصدق لمقياس الدراسة، بأن تم عرضها على (15) محكما في التربية الخاصة، والقياس والتقويم، وعدد من معلمي صعوبات التعلم، إذ طلب إليهم إبداء الرأي في فقرات المقياس من حيث مدى وضوح اللغة، ومدى ارتباط الفقرة بالمقياس وبالمجال، إضافة إلى أية تعديلات يرونها مناسبة. وقد تم تعديل ما أجمع عليه أكثر من (20%) من المحكمين.

ثبات المقياس: بالنسبة لثبات المقياس فقد تم التأكد منه بتوزيعه على عينة استطلاعية من طلبة المرحلة الأساسية، بلغ عددهم (35) طالباً وطالبةً من خارج عينة الدراسة (23 ذكور، 12 إناث)، وطلب إليهم الاستجابة على فقرات الأداة. وبعد ذلك حسب معامل الاتساق الداخلي لاستجاباتهم باستخدام معادلة كرونباخ ألفا الذي بلغت قيمته (0.84)، وهو معامل ثبات مقبول لأغراض الدراسة الحالية.

تصحيح المقياس: أعطيت الاستجابة **نعم** على المقياس الدرجة (2) والاستجابة **لا** الدرجة (1)، وبناء على ذلك تم تقسيم الاستجابات إلى ثلاث فئات هي:

1. مفهوم ذاتٍ منخفض، وهي الفئة التي انحصرت متوسطاتها الحسابية بين (1–1.33).
2. مفهوم ذاتٍ متوسطٍ، و تضم الفئة التي انحصرت متوسطاتها الحسابية بين (1.34-1.66).
3. مفهوم ذاتٍ عالٍ، وشملت الفئة التي انحصرت متوسطاتها الحسابية بين (1.67-2).

إجراءات الدراسة

قام الباحثان ببناء استبانة الدراسة والتأكد من صدقها وثباتها، ومن ثم تم توزيعها على أفراد العينة ، بعد أن تم تحديد الأماكن التي يتواجد فيها ذوو صعوبات التعلم والأفراد العاديين في مديرية تربية إربد الثانية، وكان الباحثان يوضحان لأفراد الدراسة الهدف من الدراسة وكيفية الإجابة على فقرات المقياس، ويقومان بتوضيح بعض الفقرات التي كان يسأل عنها المستجيب، وخاصة الطلبة الصغار، ثم جمعت الاستبانات وفرغت البيانات وحللت باستخدام برنامج *SPSS*.

متغيرات الدراسة

المتغيرات المستقلة: اشتملت الدراسة على ثلاثة متغيرات مستقلة وهي:

1- الجنس: وله مستويان (ذكور، إناث).

2- المستوى الدراسي: وله مستويان: (الصفوف من أول-ثالث، والصفوف من رابع –سادس).

3- فئة الطلبة: وله مستويان (مستوى الطلبة العاديين، ومستوى الطلبة ذوي صعوبات التعلم).

المتغير التابع: مفهوم الذات

نتائج الدراسة ومناقشتها

للإجابة عن السؤال الأول من أسئلة الدراسة وهو "ما مستوى مفهوم الذات لدى طلبة صعوبات التعلم في محافظة إربد؟"، استخرج الباحثان المتوسطات الحسابية والانحرافات المعيارية الموضحة في الجدول رقم (2).

جدول (2): المتوسطات الحسابية والانحرافات المعيارية لاستجابات أفراد العينة على فقرات مقياس مفهوم الذات لدى طلبة صعوبات التعلم مرتبة تنازلياً

الرتبة	الرقم	الفقـــرة	المتوسط الحسابي	الانحراف المعياري
.1	10	أنا شخص مهم بالنسبة لعائلتي	1.6524	0..4954
.2	1	أنا أحبّ عائلتي.	1.6226	0.4258
.3	24	أنا شخص قوي.	1.6078	0.5217
.4	29	أنا راض عن مظهري الخارجي	1.5849	0.3658
.5	6	أنا محبوب من عائلتي	1.549	0.3257
.6	12	أعتقد أن الناس الآخرين يحبون أن يكونوا معي	1.5472	0.4527
.7	36	أنا راض عن سلوكي الأخلاقي	1.5472	0.3257
.8	4	أنا عضو مهم في عائلتي	1.5283	0.5127
.9	2	أنا فخور بعائلتي	1.4875	0.4235
.10	8	لا تفرق عائلتي في المعاملة بيني وبين أخوتي	1.4578	0.4157
.11	20	نادراً ما أتعرض للنقد من الآخرين	1.4325	0.4875
.12	21	أحب الجلوس مع الناس	1.4021	0.5672
.13	27	أمتلك وزنا مناسبا	1.3801	0.3657
.14	25	أمتلك جسما سليما من الناحية الصحية.	1.3798	0.4587
.15	28	أعتني بجسمي جيدا.	1.3784	0.4512
.16	35	أنا شخص هادئ ومتمهل	1.3641	0.3214
.17	32	أنا أحترم نفسي	1.3594	0.3587
.18	30	أنا شخص جذاب	1.3454	0.3681
.19	44	أنا مهم بالنسبة لزملائي داخل الصف	1.3354	0.4125
.20	45	أنا يمكن أن أتغلّب على كل التحديات في دراستي.	1.3298	0.2354
.21	38	أنا احب نفسي كما هي عليه	1.3254	0.345
.22	31	أنا واثق من نفسي.	1.3254	0.4781
.23	26	أمتلك طولا مناسبا	1.3199	0.5147
.24	33	أنا فصيح اللسان	1.3178	0.3475
.25	34	أنا شخص مهذب وصادق	1.3145	0.1247
.26	37	أنا إنسان سعيد	1.3012	0.5217
.27	14	أنسجم بشكل جيّد مع الناس الآخرين	1.2984	0.4817
.28	16	أنا راض عن الطّريقة التي أعامل بها الأفراد الآخرين	1.2847	0.3571
.29	39	أنا شخص مرح وبشوش	1.2689	0.4571

الرتبة	الرقم	الفقـــرة	المتوسط الحسابي	الانحراف المعياري
.30	17	أعتقد أن الناس الآخرين يفكّرون بي إيجابيا	1.2678	0.3681
.31	11	أتصرف بطريقة مقبولة في البيت	1.2578	0.4681
.32	41	أنا راض عن مستواي الدراسي	1.2354	0.5471
.33	22	أتمتع بشهرة بين الناس	1.2345	0.3917
.34	18	يجد الناس سهولة في التعامل معي	1.2339	0.3417
.35	23	أنا أمتلك مواهب جيدة	1.2234	0.5471
.36	9	أشعر بالانسجام والتوافق مع أعضاء عائلتي	1.2187	0.4812
.37	15	لا يفرق أقراني بالمعاملة بيني وبين الآخرين.	1.2143	0.4111
.38	7	تساعدني عائلتي دائماً في أية مشكلة تواجهني	1.2025	0.3147
.39	3	أنا عضو في عائلة سعيدة	1.1985	0.5127
.40	13	أجد سهولة في التحدث مع الأشخاص الغرباء	1.1957	0.4147
.41	5	أنا رَاض عن علاقتي بعائلتي	1.1954	0.4581
.42	48	أشارك كثيرا داخل غرفة الصف	1.1875	0.3258
.43	40	أشعر أنني إنسان ذكي	1.1867	0.2147
.44	50	أنا قادر على الحصول على علامات جيدة	1.1758	0.6211
.45	46	لدي زملاء كثيرون داخل المدرسة	1.1674	0.4758
.46	43	يمكن أن أساعد زملائي في دراستهم.	1.1587	0.2147
.47	49	أواظب على دروسي حتى أنجز دراستي بنجاح	1.1547	0.3687
.48	19	أجيب بسهولة عندما يسألني شخص لا أعرفه	1.1475	0.3147
.49	42	أستطيع أن أحل كل واجباتي المدرسية	1.1243	0.4114
.50	47	استوعب جيدا ما يشرحه المعلم	1.1128	0.3514
.51	51	أحب الذهاب إلى المدرسة	1.1124	0.2451
		الكلي	1.3187	0.1748

يتبين من الجدول السابق أن المتوسط الكلي لمفهوم الذات لدى الطلبة ذوي صعوبات التعلم بلغ (1.32)، بانحراف معياري (0.1748)، وبالرجوع إلى المعايير التي اتبعها الباحثان لتصنيف مفهوم الذات، نجد أن مفهوم الذات لدى الطلبة ذوي صعوبات التعلم كان منخفضا، وقد اتفقت هذه الدراسة في نتيجتها مع نتائج دراسة كاسي وآخرون (Casey et. Al., 1992) ودراسة ميلزير وروديتي وهوسير وبيرلمان (Meltzer, Roditi, Houser & Perlman, 1998).

ويمكن تفسير هذه النتيجة انطلاقا من التحصيل المنخفض لهذه الفئة في المجال الأكاديمي، المتمثل في أن الفشل في الجانب الأكاديمي يؤثر سلبيا في مفهوم الذات الكلي عند طلبة صعوبات التعلم، ويؤثر أيضا في توافقهم وتكيفهم داخل المدرسة. وهذا كله ينعكس سلبيا على مفهوم الذات لديهم. كما يتأثر مفهوم الذات بالخبرات السلبية الأخرى التي يمر بها طلبة صعوبات التعلم في المدرسة مثل عدم تقبل زملائهم لهم داخل غرفة الصف، إذ عادة ما ينظر إليهم زملاؤهم نظرة سلبية ويحاولون تجنب التعامل معهم نتيجة أدائهم الأكاديمي المنخفض. وبالإضافة إلى ذلك فأن هذه الفئة كثيرا ما تتعرض للنقد اللاذع من الأسرة والمجتمع، اللذين عادة ما يحكمان عليهم من خلال التحصيل الأكاديمي، إذ كثيرا ما يوسمون بألقاب سيئة، وهذا كله يؤثر سلبا في مفهوم الذات لديهم، ويساهم في جعله منخفضا.

يبين الجدول رقم (2) أداء طلبة صعوبات التعلم على فقرات مقياس مفهوم الذات مرتبة تنازليا حسب المتوسطات الحسابية، ويلاحظ أن الفقرة التي حصلت على أعلى المتوسطات هي "أنا شخص مهم بالنسبة لعائلتي" إذ بلغ متوسطها الحسابي (1.6524) وانحرافها المعياري (0..4954)، تلتها الفقرة "أنا أحبّ عائلتي" إذ بلغ متوسطها الحسابي (1.6226) بانحراف معياري (0.4258)، ثم الفقرة "أنا شخص قوي" وحصلت على متوسط حسابي مقداره (1.6078) وانحراف معياري (0.5217). وجاءت الفقرة "أنا راض عن مظهري الخارجي" في المرتبة الرابعة بمتوسط حسابي بلغ (1.5849) وانحراف معياري (0.3658)، تلتها الفقرة "أنا محبوب من عائلتي" وكان متوسطها الحسابي (1.549) وانحرافها المعياري (0.3257).

يلاحظ من الفقرات الخمس السابقة أنها تتعلق بعائلة الفرد ذوي صعوبات التعلم أو بشخصيته. فمن الطبيعي أن يجد الطالب ذو صعوبات التعلم نوعا من الحنان من أفراد أسرته، وخاصة أن مثل هذا الحنان والعطف يفتقده داخل أسوار المدرسة، مما يجعله يشعر أنه مهم بالنسبة لعائلته مقارنة مع وضعه في المدرسة. بالإضافة إلى ذلك فأن هذا الفرد قد يحاول أن يعوض عن أدائه الأكاديمي المنخفض بمحاولة إعطاء فكرة عن نفسه بأنه جذاب وأنيق، وأنه شخص قوي البنية من الناحية الجسمية.

وللإجابة عن سؤال الدراسة الثاني وهو "هل هنالك فروق ذات دلالة إحصائية في مفهوم الذات بين طلبة المرحلة الأساسية تعزى لاختلاف فئات الطلبة (عاديين، صعوبات تعلم)، أو جنسهم، أو مستواهم الدراسي"، تم أولا حساب المتوسطات الحسابية والانحرافات المعيارية فكانت كما في الجدول رقم (3).

جدول (3): المتوسطات الحسابية والانحرافات المعيارية لمفهوم الذات لدى الطلبة موزعة حسب متغيرات الدراسة

	الجنس		فئة الطالب		المستوى الدراسي	
	ذكور	إناث	عادي	صعوبات	3-1	6-4
العدد	119	83	111	91	104	98
المتوسط الحسابي	1.3758	1.3730	1.4253	1.3187	1.4182	1.3326
الانحراف المعياري	0.1791	0.1854	0.1712	0.1748	0.1560	0.1957

يوضح الجدول رقم (3) المتوسطات الحسابية والانحرافات المعيارية موزعة حسب متغيرات الدراسة الثلاث (الجنس، فئة الطلبة، والمستوى الدراسي)، ويلاحظ من الجدول وجود فروق ظاهرية في متوسطات مفهوم الذات لدى طلبة المرحلة الأساسية، ولمعرفة فيما إذا كانت هذه الفروق ذات دلالة إحصائية عند (α = 0.05)، فقد تم إجراء تحليل التباين الثلاثي لأثر متغيرات الجنس، وفئة الطلبة، والمستوى الدراسي على مفهوم الذات لديهم، والجدول رقم (4) يوضح نتائج التحليل:

جدول (4): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي على المقياس الكلي للأداة

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
فئة الطلبة	1	0.536293	0.536293	18.4819	0.001
الجنس	1	0.073354	0.073354	2.5280	0.113
المستوى الدراسي	1	0.190220	0.190220	4.1453	0.043
الخطأ	197	5.716396	0.029017		
الكلي	201	6.607481			

يتبين من بيانات الجدول رقم (4) أن هنالك أثرا له دلالة إحصائية على مستوى مفهوم الذات لدى طلبة المرحلة الأساسية تعزى لاختلاف فئة الطلبة (عاديين، طلبة ذوي صعوبات تعلم)، حيث بلغت قيمة ف (18.4819) وهي دالة إحصائيا عند مستوى الدلالة (α = 0.001). ويتبين من المتوسطات الحسابية والانحرافات المعيارية الواردة في الجدول رقم (3) أن هذه النتيجة كانت لصالح الطلبة العاديين، إذ بلغ متوسط مفهوم الذات لديهم (1.4253) بانحراف معياري مقداره (0.1712)، بينما بلغ المتوسط الحسابي لمفهوم الذات لدى طلبة صعوبات التعلم (1.3187) بانحراف معياري مقداره (0.1712). وقد اتفقت الدراسة الحالية في هذه النتيجة مع نتائج دراسات (Saracoglu, Minden & Wilchesky, 1989; Raviv & Stone, 1991; Casey et. Al., 1992; Jarvis & Justice, 1992; Chapman & Boersma, 1992; Moffatt, 1993; Coleman & Minnett, 1993; Smith & Nagle, 1995; Crabtree, 2000) ، إذ أشارت نتائجها جميعا إلى أن الطلبة العاديين حصلوا على متوسطات أعلى وبشكل دال في مفهوم الذات، مقارنة بالطلبة ذوي صعوبات التعلم، لكن نتائج الدراسة الحالية اختلفت عن نتائج دراسات أخرى مثل دراسات (Crabtree, 2000; Coleman, McHam & Minnett, 1992; Coleman, McHam & Minnett, 1992; Vaughn, Elbaum & Schumm, 1996) ، التي أشارت نتائجها إلى عدم وجود فروق دالة إحصائيا في مفهوم الذات بين الطلبة العاديين والطلبة ذوي صعوبات التعلم.

ويفسر الباحثان هذه النتيجة بكون طلبة صعوبات التعلم يتأثرون سلبيا أكثر من الطلبة العاديين نتيجة أدائهم الأكاديمي المنخفض، لأن هذا الأثر السلبي يعتمد أصلا على إدراكهم غير المناسب لأنفسهم في المجالات الأكاديمية، مما يؤثر سلبا على مفهوم الذات لديهم،على النقيض من الطلبة ذوي التحصيل العادي أو المرتفع الذين قد يؤثر تحصيلهم المرتفع إيجابياً في مفهوم الذات لديهم. يضاف إلى ذلك أن المعلّم عادة ما يدرك أن الطالب الذي يمتلك صعوبات تعلم أنه فاشل في الوضع الدراسي بشكل خاص، وفي الحياة اليومية بشكل عام؛ فقد بينت الدراسات أن المعلمين يعتقدون أن إدراك الذات لدى الأطفال العاديين يكون أعلى مما هو عليه عند الأطفال ذوي صعوبات التعلم (Rowley, 1981; Coleman & Minnett, 1993; Bear, Minke & Manning, 2002). وإن نظرة المعلم السلبية هذه إلى الطلبة ذوي صعوبات التعلم تؤثر سلبا في مفهوم الذات لديهم، لاسيما أن المعلم يكون قدوة مهمة عند الطالب في المرحلة الأساسية وأن القبول السلبي لطلبة صعوبات التعلم عند أقرانهم يؤثر هو الآخر سلباً في مفهوم الذات لديهم.

وبالنسبة لأثر متغير جنس الطالب في مفهوم الذات الكلي لديه فيلاحظ من الجدول رقم (4) عدم وجود أثر ذي دلالة إحصائية لمتغير الجنس في مفهوم الذات لدى طلبة المرحلة الأساسية. وقد اتفقت نتيجة الدراسة الحالية مع نتيجة دراسة (Meltzer, et. al., 1998)، واختلفت مع نتيجة دراسة (Moffatt, 1993) ، ودراسة (Hosley, et al.,1998) التي أشارت نتائجهما إلى وجود فروق دالة في مستوى مفهوم الذات بين الذكور والإناث ولصالح الذكور، وقد يعود ذلك إلى أن مفهوم الذات لدى الطلبة ذوي صعوبات التعلم واحد لا يتأثر بجنس الطالب.

أما المستوى الدراسي فيلاحظ من نتائج تحليل التباين الثلاثي الواردة في الجدول رقم (4) وجود أثر دال إحصائيا للمستوى الدراسي للطالب على مفهوم الذات لديه، إذ بلغت قيمة **ف**= 4.1453 ، وهي دالة إحصائيا عند مستوى (α=0.043). ويلاحظ من المتوسطات الحسابية الواردة في الجدول رقم (3) أن هذه النتيجة كانت لصالح الطلبة الصغار، إذ بلغ المتوسط الحسابي لمفهوم الذات لديهم (1.4182)، والانحراف المعياري (0.1560)، بينما بلغ متوسط مفهوم الذات لدى الطلبة الأكبر سنا (1.3326) والانحراف المعياري (0.1957).

ويرى الباحثان في تفسيرهما لهذه النتيجة أن مفهوم الذات لدى الفرد يزداد وضوحا مع تقدمه في العمر. فمفهوم الذات في بداية المدرسة عادة ما يكون غير واضح لدى الطلبة. وبالإضافة إلى ذلك فأن التأخر الدراسي يبرز بشكل أوضح لدى الطلبة مع تقدمهم في العمر، وبالتالي يكون قد تم وسمهم بأنهم طلبة ذوو صعوبات التعلم، مما يؤثر سلبا في مفهوم الذات لديهم، وجعل متوسط مفهوم الذات الكلي لدى طلبة المرحلة الأساسية من (4-6) يبدو منخفضا مقارنة مع أقرانهم الأقل سنا (1-3).

وللتعرف على الفروق المحتملة في مفهوم الذات بين طلبة المرحلة الأساسية تبعا لاختلاف فئات الطلبة، أو جنسهم، أو مستواهم الدراسي على مجالات المقياس ، فقد تم حساب المتوسطات الحسابية والانحرافات المعيارية لمتغيرات الدراسة على مجالات المقياس الخمسة، إذ يوضح الجدول رقم (5) ذلك:

جدول (5): المتوسطات الحسابية والانحرافات المعيارية لمتغيرات فئات الطلبة والجنس والمستوى التعليمي على مجالات المقياس الخمسة

المتغيرات	المجال	المجال الأول		المجال الثاني		المجال الثالث		المجال الرابع		المجال الخامس	
		م	ع	م	ع	م	ع	م	ع	م	ع
الجنس	ذكر	1.375	0.108	1.388	0.118	1.367	0.115	1.395	0.090	1.364	0.136
	أنثى	1.374	0.110	1.356	0.115	1.384	0.094	1.346	0.146	1.389	0.128
فئة الطلبة	عادي	1.400	0.102	1.408	0.115	1.392	0.111	1.386	0.119	1.422	0.096
	صعوبات	1.354	0.110	1.334	0.108	1.360	0.102	1.360	0.117	1.315	0.148
المستوى الدراسي	3-1	1.378	0.123	1.381	0.130	1.367	0.113	1.389	0.087	1.402	0.106
	6-4	1.371	0.092	1.367	0.102	1.382	0.101	1.359	0.144	1.344	0.151

بالنظر إلى نتائج المتوسطات الحسابية والانحرافات المعيارية لمتغيرات الدراسة الثلاثة على مجالات مقياس مفهوم الذات الخمسة الواردة في الجدول رقم (5)، يتبين وجود فروق ظاهرية في هذه المتوسطات. وللكشف عما إذا كانت هذه الفروق الظاهرية ذات دلالة إحصائية عند مستوى (α=0.05)، فقد أجرى الباحثان تحليل التباين الثلاثي لكل مجال من مجالات المقياس الخمسة، فكانت النتائج كما هي موضحة بالجداول ذوات الأرقام (6، 7، 8، 9، 10).

جدول (6): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الأول (مفهوم الذات العائلي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.003295	0.003295	0.287	0.592
فئة الطلبة	1	0.106639	0.106639	9.310	0.002
الجنس	1	0.000654	0.000654	0.057	0.811
الخطأ	198	2.267839	0.011454		
الكلي	201	2.376398			

يتبين من الجدول رقم (6) عدم وجود فروق ذات دلالة إحصائية في مفهوم الذات العائلي بين طلبة المرحلة الأساسية الدنيا، تعزى إلى اختلاف مستوى الطلبة الدراسي أو جنسهم. لكن الجدول يظهر وجود فروق دالة إحصائيا (**ف**= 9.310، α=0.002) في مستوى مفهوم الذات العائلي لدى الطلبة، تعزى لاختلاف فئتهم (عاديون، صعوبات تعلم)، وقد كانت هذه الفروق لصالح الطلبة العاديين، إذ بلغ متوسطهم الحسابي على هذا المجال (1.400)، بانحراف معياري بلغ (0.102)، بينما كان متوسط الطلبة ذوي صعوبات التعلم (1.354)، والانحراف المعياري (0.110).

ويمكن تفسير هذه النتيجة أن الأسر في المجتمع الأردني عادة ما تقدم الدعم على اختلاف أنواعه من مادي وعاطفي لأبنائها تبعا لتحصيلهم الأكاديمي في المقام الأول، إذ أن للتحصيل الأكاديمي قيمة اجتماعية كبيرة داخل الأسرة.

وبالنسبة لأثر متغيرات الجنس وفئة الطلبة والمستوى الدراسي على مجال المقياس الثاني (مفهوم الذات الاجتماعي) فيوضحها الجدول رقم (7).

جدول (7): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الثاني (مفهوم الذات الاجتماعي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.006749	0.006749	0.552	0.458
فئة الطلبة	1	0.292129	0.292129	23.912	0.001
الجنس	1	0.062059	0.062059	1.4231	0.0871
الخطأ	198	2.418865	0.012216		
الكلي	201	2.766098			

يتضح من الجدول رقم (7) عدم وجود فروق دالة إحصائيا عند مستوى (= 0.05) في مستوى مفهوم الذات لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف جنس الطلبة أو مستواهم الدراسي، بينما تشير نتائج هذا الجدول إلى وجود فروق ذات دلالة إحصائية في مستوى مفهوم الذات لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف فئة الطلبة (عاديون، ذوي صعوبات تعلم)،إذ بلغت قيمة ف (23.912) وهي دالة إحصائيا عند مستوى (α=0.001). وبالنظر إلى المتوسطات الحسابية الواردة في الجدول رقم (5) يتبين أن هذه الفروق كانت لصالح الطلبة العاديين ، إذ بلغ متوسطهم الحسابي على هذا البعد (1.408) بانحراف معياري بلغ (0.115)، بينما بلغ المتوسط الحسابي لطلبة صعوبات التعلم على هذا البعد (1.334) والانحراف المعياري (0.108). وقد اختلفت الدراسة الحالية في هذه النتيجة مع نتائج دراسة (Pires, 2003)، التي أشارت إلى عدم وجود فروق دالة بين طلبة صعوبات التعلم والطلبة العاديين في مفهوم الذات الاجتماعي.

إن للبيئة الاجتماعية التي يعيش فيها الفرد أثراً في الصورة التي يكونها عن نفسه، فعادة ما يكون مفهوم الذات الاجتماعي عند الأفراد انعكاساً للطريقة التي يدركهم بها الآخرون ، وأن الطلبة العاديين يتمتعون بشهرة بين أفراد مجتمعهم أكثر من الطلبة ذوي صعوبات التعلم، فعلى النقيض من طلبة صعوبات التعلم، فإن الطلبة العاديين يجدون معاملة أكثر إيجابية من الناس الذين يتعاملون معهم، مما يكون لديهم اعتقاداً أن الناس الآخرين يحبون التعامل معهم، أما طلبة صعوبات التعلم فإن شعورهم يكون مغايرا لشعور الطلبة العاديين نتيجة تعرضهم للنقد من الآخرين.

وللتعرف على الفروق الممكنة في مفهوم الذات لدى الطلبة تبعاً لاختلاف الجنس والفئة والمستوى الدراسي على المجال الثالث

(مفهوم الذات الجسمي)، فقد تم استخدام تحليل التباين الثلاثي فكانت النتائج كما في الجدول رقم (8).

جدول (8): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الثالث (مفهوم الذات الجسمي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.009727	0.009727	0.862	0.354
فئة الطلبة	1	0.057068	0.057068	2.380	0.124
الجنس	1	0.016072	0.016072	1.425	0.233
الخطأ	198	2.232104	0.011273		
الكلي	201	2.313032			

يتضح من نتائج الجدول رقم (8) عدم وجود فروق دالة إحصائيا عند ($\alpha = 0.05$) في مفهوم الذات الاجتماعي لدى طلبة المرحلة الأساسية الدنيا، تعزى لاختلاف فئة الطلبة، أو مستواهم الدراسي، أو جنسهم.

وللكشف عن إمكانية وجود فروق دالة إحصائيا في مفهوم الذات الشخصي تعزى لمتغيرات الدراسة، فقد أجرى تحليل التباين الثلاثي على هذا المجال، فكانت النتائج كما في الجدول (9).

جدول (9): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الرابع (مفهوم الذات الشخصي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.022002	0.022002	1.651	0.200
فئة الطلبة	1	0.041471	0.041471	3.112	0.079
الجنس	1	0.106808	0.106808	8.016	0.005
الخطأ	198	2.638049	0.013323		
مجموع التباين	201	2.820261			

يتبين من نتائج تحليل التباين الثلاثي في الجدول رقم (9) المتعلقة بمجال الأداة الرابع (مفهوم الذات الشخصي)، عدم وجود فروق دالة في مفهوم الذات الشخصي لدى الطلبة، تعزى لاختلاف مستواهم الدراسي (**ف**= 1.651، $\alpha = 0.200$)، بينما تبين وجود فرق دالة على المجال نفسه تعزى لاختلاف الجنس (**ف**= 8.016، $\alpha = 0.005$)، وبالعودة إلى المتوسطات الحسابية الواردة في الجدول رقم (5) يلاحظ أن هذه النتيجة كانت لصالح الذكور إذ جاء المتوسط الحسابي(=1.395)، والانحراف المعياري (=0.090)، بينما كان المتوسط الحسابي للإناث (1.360) والانحراف المعياري (0.146).

ولتحديد الفروق الممكنة في مفهوم الذات الأكاديمي فقد أجري تحليل التباين الثلاثي فكانت النتائج كما في الجدول (10).

جدول (10): تحليل التباين الثلاثي لأثر متغيرات فئات الطلبة والجنس والمستوى الدراسي والتفاعل بينها على مجال الأداة الخامس (مفهوم الذات الأكاديمي)

مصدر التباين	درجات الحرية	مجموع المربعات	متوسط المربعات	قيمة ف	مستوى الدلالة
المستوى الدراسي	1	0.085752	0.085752	5.879	0.016
فئة الطلبة	1	0.435332	0.435332	29.847	0.0001
الجنس	1	0.017783	0.017783	1.219	0.270
الخطأ	198	2.887831	0.014585		
الكلي	201	3.556884			

يتضح من الجدول رقم (10) عدم وجود فروق دالة إحصائيا في مفهوم الذات الأكاديمي لدى الطلبة تعزى لاختلاف جنس الطالب، بينما تبين وجود فروق ذات دلالة في مستوى مفهوم الذات الأكاديمي لدى الطلبة تعزى لاختلاف فئة الطلبة (**ف**= 29.847، $\alpha = 0.0001$)، ولصالح الطلبة العاديين ، إذ بلغ متوسطهم الحسابي على هذا المجال (1.422) والانحراف المعياري (0.096)، بينما بلغ متوسط طلبة صعوبات التعلم على المجال نفسه (1.315) والانحراف المعياري(0.148). وقد اتفقت نتيجة الدراسة الحالية مع نتائج دراسات (Priel & Leshem, 1990; Grolnick & Ryan, 1990; Coleman & Minnett, 1993; Vaughn, et (al., 1996; Bear et al., 2002). أما بالنسبة لمتغير المستوى الدراسي فقد أشارت النتائج إلى وجود فروق دالة في مستوى مفهوم الذات الأكاديمي للطلبة، تعزى لاختلاف مستواهم الدراسي (**ف**= 5.879، $\alpha = 0.016$) ولصالح الطلبة الأصغر سنا.

ويمكن تفسير هذه النتيجة على أساس أن الطلبة العاديين يكونون أكثر رضا عن مستواهم الدراسي، وأكثر استيعابا لما يشرحه المعلم، وأكثر قدرة على حل الواجبات المدرسية والحصول على علامات جيدة في المواد المختلفة. لكن طلبة صعوبات التعلم عادة ما يعاملون من معلميهم أقرانهم معاملة أكثر سلبية مما يعامل به الطلبة العاديين، ولا شك أن هذه النشاطات تشكل مفهوم الذات الأكاديمي لدى الطلبة ، إذ إنها تجعله يبدو أكثر إيجابية لدى الطلبة العاديين، وأكثر سلبية لدى طلبة صعوبات التعلم.

أما بالنسبة لحصول الطلبة الأصغر سنا على متوسطات أعلى من الطلبة الأكبر سنا على مجال مفهوم الذات الأكاديمي، فربما يتمثل في أن التأخر الدراسي لدى طلبة صعوبات التعلم يكون قد أصبح أكثر وضوحا مع تقدمهم في المستوى الدراسي، إذ يصل معظمهم إلى هذه المرحلة وقد وسم بأنه متأخر دراسيا، وأن مفهوم الذات في بداية المدرسة لا يكون قد اتضحت معالمه بعد، ولا يزال في طور التشكيل.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 135-142

Some Variables Predicting Learners' Attitudes toward Web-based Instruction

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Received Date: Nov. 2, 2004 **Accepted Date: May 5 , 2005**

Abstract: *As more and more institutions of higher education plan to integrate web-based instruction into their settings, a need exists to understand and predict learners' attitudes toward this new form of learning. By being able to predict learners' attitudes, instructors and decision-makers can improve and enhance students' learning experience. The purpose of this study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction. The study surveyed 440 students who were enrolled in the web-based course "Accounting Principles (1)" offered by the Department of Accounting at the Hashemite University. Students were taught in a flexible (mixed) mode of instruction. Data about the four possible predictors and the dependent variable, learners' attitudes toward web-based instruction, was collected. Multiple regression analysis using the stepwise approach was utilized to analyze the data. The findings of the study indicated that learners' prior experience with the Internet and their frequency of accessing the web-based course may act as predictors of their attitudes toward web-based instruction. More precisely, the study showed that approximately 11% of learners' attitudes was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course. This study has identified important predictors that may prove to valuable to future researchers and instructors who are involved in the future of web-based instruction. (**Keywords**: Web-based instruction; Electronic learning; Online instruction; Internet-based instruction)*

بعض المتغيرات التي تتنبأ باتجاهات الطلبة نحو التعليم المبني على شبكة المعلومات

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ملخص: مع زيادة عدد مؤسسات التعليم العالي التي تسعى لإدخال التعليم بوساطة شبكة المعلومات ضمن سياساتها التعليمية تظهر الحاجه إلى دراسة وفهم العوامل المؤثرة على اتجاهات الطلبة نحو إستخدام هذه التكنولوجيا الحديثة . إن لمثل هذه الدراسات الاثر على متخذي القرارات وأعضاء هيئة التدريس بما يخدم هذه التجربة. إن الغاية من هذه الدراسة هو تحديد إلى أي مدى تؤثر عوامل العمر، والجنس ، والخبرة السابقه في إستخدام شبكة المعلومات وعدد مرات الدخول لموقع المادة التعليمية الإلكتروني على اتجاهات المتعلمين نحو التعليم الإلكتروني، لقد شملت هذه الدراسة 440 طالباً ممن سجلوا مادة مبادىء محاسبة (1) في الجامعة الهاشمية . وقد تم تدريس هؤلاء الطلبة بإستخدام اسلوب التعليم المختلط بين التعليم التقليدي والتعليم الإلكتروني ، وتم جمع البيانات اللازمة حول متغيرات الدراسة واستخدم اسلوب تحليل الإنحدار المتدرج لتحليل هذه البيانات وكذلك لإختبار فرضيات الدراسة. لقد جاءت نتائج الدراسة لتظهر ان خبرة الطالب السابقة في استخدام شبكة المعلومات وعدد مرات دخوله للموقع الإلكتروني يمكن إستخدامها كمتغيرات للتنبؤ بإتجاه الطلبة نحو التعليم الإلكتروني، حيث اشارت النتائج إلى أن11% من التغير في إتجاهات الطلبة نحو التعليم الإلكتروني يعود إلى عاملي الخبرة السابقة في إستخدام الشبكة وعدد مرات دخول الطالب للموقع الإلكتروني، وأن معرفة هذه العوامل يخدم الباحثين والمدرسين في هذا المجال. (***الكلمات المفتاحية***: *التعليم المبني على شبكة المعلومات، التعليم الالكتروني، التعليم بالإنترنت*)

Introduction: Within the past few years, colleges and universities have introduced and incorporated a number of e-learning technologies to face the increasing number of students and to enhance student-learning experiences. Symonds (2003) noted that undergraduate enrolment in the US is up 8% since 1999, yet there are widespread instances of reductions in government spending. Although tuition fees have risen steadily as a response to this situation, a long-term solution is still needed to be sought. It appears that significantly different organizational forms are needed to accommodate the joint pressures of growing demand, rising tuition, and limited public funding within the university system.

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A review of the evolution of online and distance education in higher education might indicate how traditional universities' organizational structures will witness changes in the future in response to these environmental pressures. These changes indicate a major, underlying shift in the way in which university education will be conducted in the future and provide additional evidence of the effectiveness of online instruction. Unfortunately, this is the case in many countries over the world, including Jordan.

The increase in the number of students in Jordanian public universities from 30,000 students in 1985 to more than 120,000 students in 2003 has been coupled with an increase in the government spending for those universities of no more than 50% (Burke and Al-Waked, 1997). It is obvious that universities are facing raised ground and in some cases decreased government funding. Besides, moving toward online education

usually leads to an enhancement in learners' experiences. Therefore, the need to move to online instruction has inevitably become crucial in the Jordanian system for higher education.

To ensure a proper integration and implementation of online instruction, a deep analysis of the new learning environment has to exist. According to Shih (2000), it is always important to understand how a new form of learning can affect the learning process, especially when it is used by different types of learners. Furthermore, it is of an importance to identify the learning factors that influence the success of learners in the new form of learning (Shih, 2000). For this purpose, this study proposes an e-learning model, measures learners' attitudes toward that model, and tests four possible factors (age, gender, prior experience with the Internet, and frequency of accessing the web-based course) that could be used to predict learners' attitudes toward the proposed model. According to Dutton, Dutton, and Perry (2002), older students prefer online or web-based courses. Therefore, age was included in the study. Gender was investigated because Marcinkiewicz's (1993) review of research suggests that gender differences are related to attitudes and that females have more negative attitudes toward computers and view them as less useful. As for prior experience, research has documented the relationship between experience and user acceptance of technology in general (Koohang, 1989). In fact, Busch (1995) concluded that "the most important predictor of computer attitudes is previous computer experience" (p. 154). Wegner, Holloway, and Garton (1999) find that students who perceive that the Internet-based course is information-rich and adequate to the instructional task at hand make greater use of the learning environment. And since students who access the Internet-based course more frequently may make greater use of the learning environment, their attitudes toward the online course may differ from those who access the course less frequently. Therefore, frequency of accessing the web-based course was included in the study as a possible predictor. Consequently, an in-depth investigation of these predictors may affect the effectiveness of online instruction, and the results of such investigation can form a basis on which education policy-makers can advise.

Statement of the Problem: As mentioned earlier, the rapid increase in the number of students, coupled with a decreased government funding, has created a challenging problem for educational institutions around the world, including Jordan. In an attempt to solve this problem, these institutions started to explore new ways for the delivery of instruction.

According to Rosenberg (2000), web-based instruction has the potential of allowing students to access up-to-date information anywhere anytime, promoting active and independent learning, and supporting communication between experts and novices. Besides, an estimated 80% of the cost of facilities, faculty and administrators could be eliminated by offering web-based courses (Leonard, 1997). Therefore, many educational institutions, including the Hashemite University, have already initiated the process of integrating web-based instruction into its settings. However, in order for this process to be successful, a continuing body of research that analyzes the different aspects of this new form of instruction has to exist. This study sheds light on the aspect of learners' attitudes toward web-based instruction. More specifically, the study attempts to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

Objectives of the Study: The main objective of the study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

Importance of the Study: This study came to test four possible factors that can be helpful in predicting learners' attitudes toward web-based instruction. The results of the study contribute substantially, we believe, to integrating web-based instruction into the settings of educational institutions in Jordan. More specifically, administrators and decision-makers will find this study of a value in determining some factors that can affect the attitudes of learners participating in web-based instruction toward this newly implemented form of instruction in Jordan.

In addition, the information provided by this study may encourage students and faculty members who have not experienced web-based instruction to participate in web-based courses.

Delimitations and Limitations: The delimitations and limitations of this study included the following:

1. The target population of the study was limited to students enrolled in the "Accounting Principles (1)" course offered by the Department of Accounting at the Hashemite University in the first semester of the academic year 2003-2004.
2. This study was delimited to the use of a survey instrument as the primary method of gathering data.
3. The design of this study was survey research.

Definition of Terms

The following defined terms are required for the purpose of this study:

Attitude: is a learned predisposition to respond in a consistent manner to a given object or situation (Fishbein and Ajzen, 1975).

Web-based instruction: is a method of providing a learning environment that is mediated and supported by the attributes and resources of the Internet. It is an increasingly popular method for delivering university courses (Brooks, Nolan, and Gallagher, 2001).

Literature Review: E-learning literature mainly concentrates on the benefits of using online instruction, and many previous studies addressed e-learning outcomes along with student satisfaction perceptions using instructors' self-report surveys (Arbaugh and

Duray, 2002). Studies have also used instructor surveys to generate findings on online learning methods (Perreault, Waldman, Alexander, and Zhao, 2002; Vrasidas, 2002; Lynch and Murranka, 2002; Drago, Peltier, and Sorensen, 2002). For example, McDonald (2002) emphasized that there are many benefits to using online distance learning environments: online education is available "anyplace, anytime" for global communities of learners based on shared interests. She claimed that "online education with its group-based instruction and Computer Mediated Communication (CMC) provides an opportunity for new development and understanding in teaching and learning" (p.11). McDonald also concluded that CMC encourages collaborative learning by not providing cues regarding appearance, race, gender, education, or social status bestowing a sort of anonymity to participants.

A study conducted by Devlin and James (2003) in Australia concluded that the impact of multimedia and educational technology could provide some indication of improved student learning. Investigating the impact of randomly generated open access tests, Thelwell (2000) found evidence of improved student motivation and modified student study behavior through increased revision.

In view of the previously-mentioned studies, we can conclude that the use of online instruction has many promising benefits for education. However, we may wonder whether achieving such benefits is in someway linked with students' demographic variables (e.g. age, gender, etc.) or experiences with the Internet.

Many studies investigated the relationship between students' attitudes toward using online instruction and some demographic variables like age, gender, number of times logged into web-based courses and users' experience in using the Internet. Age and gender differences have been reported in the literature as affecting perceptions in general (Hackett, Mirvis, and Sales, 1991). Consequently, gender was included as a matter of understanding if differences of perceptions toward using online instruction occurred between male and female respondents. Experience with the Internet was included because research has documented the relationship between experience and user acceptance of technology in general. The more experience a user has with technology the more he or she tends to accept it (Koohang, 1989). Therefore, user's acceptance may in turn promote learning. The number of times logged into web-based courses is also expected to affect user's acceptance of technology (Yang and Chai, 2000).

Jiang and Shrader (2001) conducted an exploratory study to investigate several factors that might contribute to students' academic achievement and satisfaction with an online environment provided by Western Governors University. These factors are pre-assessment results, interaction with the mentor, number of online courses taken and demographic profile (e.g., age, gender, current position, etc.). Participants in this study were 120 students enrolled in a Master's program. They learned via direct interaction with online course materials and with the mentor using e-mail, listservs and threaded discussions. The researchers developed a questionnaire to reveal students' perceptions of the program and used the results of pre-assessment and raw count of students' messages. Using correlation analysis and multiple regression analysis, the researchers found that students' overall satisfaction was high, with a mean score of 3.18 on the four-point rating scale. They felt most satisfied with the flexibility of time and place provided by the online course. They also found that the demographic variables did not bear any significant relationship with satisfaction and academic progress. Another interesting result of Jiang and Shrader's study was that the more the students communicated with the web-based course, the more motivated they were and the more academic help they obtained from their web-based course. Consequently, these students progressed faster and were more satisfied with online learning.

Similar results were found by a study conducted by Koohang and Durante in 2003. Their study tested learners' perceptions toward Web-based distance learning and gave attention to the variables of age, gender, and experience with the Internet to find whether these variables are significant factors in learners' perceptions toward Web-based learning. They found that age and gender were not significant factors, but there was a significant difference among the levels of learners' experience with the Internet and their perceptions toward the Web-based learning activities.

Emphasizing the same results he and his partner found before, Koohang (2004) conducted another study that investigated users' perceptions toward e-learning. In addition to the variables of age, gender and prior experience with the Internet, his study gave attention to the amount of time the e-learner spent on the e-learning courseware to do his/her assignments. Although the study found no significant difference for age and gender, it indicated that learners' prior experience with the Internet and the amount of time learners spent on e-learning activities were significant factors. In other words, Koohang's study showed that students with more prior experience with the Internet had significantly higher positive perceptions toward e-learning. Likewise, students who spent more time on e-learning to complete their assignments indicated significantly higher positive perceptions toward the e-learning usability.

As for the frequency of accessing the web-based course, it is found that students with better attendance (number of times logged into the site) and reading depth (number of time browsing the material) in courses had better achievement (Lin and Chen, 2000). However, the study of Yang and Chai (2000) showed no obvious effect on achievement from students' learning activities such as times of log in or participation in discussions. Instead, the study showed that the only noticeable effect of these learning activities was on whether students felt e-learning was helpful.

In summary, we can say that the use of web-based instruction has many promising benefits for education. Analyzing and understanding learners' attitudes toward web-based instruction is helpful in the proper implementation and design of web-based courses. In the literature, it has been shown that it is of an importance to identify factors that influence learners' success in web-based instruction. Studies have examined a number of these factors, like prior experience with the Internet, interaction with mentor, number of online courses taken, frequency of accessing the web-based course, and several demographic variables. However, there is a great need to test some of these factors in the Jordanian environment for web-based instruction. Therefore, this study came to test four possible factors that can be helpful in predicting learners' attitudes toward web-based instruction. We believe that the results of the study will contribute substantially to integrating web-based instruction into the settings of educational institutions in Jordan.

Methodology

The Web-based Course

The web-based course that was the concern of this study was the Accounting Principles (1) course offered by the Department of Accounting at the Hashemite University in the first semester of the academic year 2003-2004. The Hashemite University is considered one of Jordanian's largest providers of higher-level education. Until the end of the Academic year 2002-2003, it is the only public university accredited for online teaching by the Ministry of Higher Education and Research in Jordan. Many other universities are moving toward getting such a credit. Although it's newly established, the Hashemite University was the first university in Jordan that started the process of planning and integrating e-learning into its courses.

All six sections of the Accounting principles (1) course were taught in a flexible (mixed) mode by two instructors who completed a workshop on developing web-based courses during the summer of the year 2003. The two instructors worked together on developing a web-based version of the Accounting Principles (1) course using Blackboard Learning and Community Portal System™, an authoring environment, which utilizes asynchronous (Bulletin, e-mail) and synchronous (Chat) communication tools.

Face-to-face lectures of three class hours per week were supplemented by a variety of web-based materials including an extensive collection of interactive, collaborative practice materials, an extensive set of PowerPoint slides available as a supplement to the textbook, and extensive files of repeatable practice quizzes. Online communication was set up to support the assessments: These consisted of a portfolio, which followed the development process of the web-based materials and led to the web-based course as a final product. As part of the development cycle, students were asked to get feedback from fellow students or external sources by using e-mail and chat rooms. The chat rooms were also available for other forms of discussion e.g. for advice and help.

The Instrument: The main goal of this study was to test four possible predictors of learners' attitudes toward web-based instruction. To achieve this goal, an instrument was designed to collect information about the four possible predictors (age, gender, prior experience in using the Internet, and frequency of accessing the web-based course) and the predicted or dependent variable (learners' attitudes toward web-based instruction).

Section one of the instrument was designed to gather information regarding gender, age, prior experience with the Internet, and frequency of accessing the web-based course. See Table 1.

Table 1: Section (1) of the Instrument

SECTION (1):
Please respond to the following items by circling the appropriate number

1. **Gender?**
   (1) Male (2) Female
2. **Age?**
   (1) Less than 20 years (2) From 20 to 22 years
   (3) From 23 to 25 years (4) Greater than 25 years
3. **Prior experience with the Internet?**
   (1) From 1 to 2 years (2) From 3 to 5 years (3) Over 5 years
4. **Frequency of accessing the Web-based course?**
   (1) Never (2) Seldom (3) Once a week
   (4) Once every two days (5) Once a day (6) More than once a day

Section two, the attitudes scale, was built to measure learners' attitudes toward web-based instruction in light of their experience with the web-based course. Students were asked to rate their agreement with eleven items on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The statements for the items were worded positively so that a higher score indicates more favorable attitudes toward web-based instruction. A list of these items is shown in Table 2.

Table 2: Section (2) of the Instrument

SECTION (2): The Attitudes Scale
Using the following scale, please indicate your agreement with each of the items that follow by circling the number that best indicate your attitude toward web-based instruction.
Scale:
5=Strongly Agree, 4=Agree, 3=Not Sure, 2=Disagree, 1=Strongly Disagree

1. Encourages me to learn more	5	4	3	2	1
2. Improves my discussion skills.	5	4	3	2	1
3. Makes me feel more involved in the class.	5	4	3	2	1
4. Makes me realize the importance of the studying materials.	5	4	3	2	1
5. Encourages me to take courses taught in a similar way.	5	4	3	2	1
6. Makes me feel more prepared for the examinations.	5	4	3	2	1
7. Stimulates my interest in what I learn.	5	4	3	2	1
8. Encourages me to ask more questions.	5	4	3	2	1
9. Provides me with a new positive learning experience.	5	4	3	2	1
10. Enhances my ability to understand & evaluate viewpoints.	5	4	3	2	1
11. Makes me feel more responsible for studying.	5	4	3	2	1

The instrument underwent two phases of validity verification. The first phase involved sending all survey items to a panel of four instructional technologists from four Jordanian universities to rate each item for clarity and usefulness in measuring learners' attitudes toward web-based instruction. Members of the panel were asked to make appropriate changes to the survey items. After making necessary changes, the survey was ready for the second phase of validity verification. Three weeks prior to the end of the first semester of the academic year 2003-2004, the second phase began by administering the survey to a randomly selected sample of 25 students who were enrolled in the "Accounting Principles (1)" web-based course. These students, who were later excluded from the sample of the study, were asked to rate the survey items for clarity of expression. Based on students' responses and comments, a final version of the survey was prepared.

Two weeks prior to the end of the first semester of the academic year 2003-2004, the internal consistency of the instrument was determined using 40 subjects (21 males and 19 females) who were taking the "Accounting Principles (1)" web-based course. The sample used to determine the internal consistency was independent of the sample of respondents used in the study itself. The calculated coefficient alpha reliability for the attitudes scale was .87, which suggests that this instrument is suitable to measure learners' attitudes toward the web-based course.

Subjects and Procedure: The population of this study consisted of all the undergraduate students who enrolled in the web-based course "Accounting Principles (1)" during the first semester of the academic year 2003-2004. The sample of the study was the whole population, which was 510 students. Among these, 65 students were excluded because they were used in establishing the validity and reliability for the instrument, and another 5 students were excluded because their responses were not consistent. A description of the rest of the students (440) regarding gender, age, prior experience with the Internet, and frequency of accessing the web-based course is presented in table 3.

Of the 440 students who participated in the study, 225 were males (51.1 percent of total sample) and 215 (48.9 percent of total sample) were females. Initially, students' ages varied in four categories: 319 students (72.5 percent) who were less than 20; 111 students (25.2 percent) who were between the ages of 20-22; 8 students (1.8 percent) who were between the ages of 23-25; and only 2 students (0.5 percent) who were over 25. To get more stable results, the last three categories of age have been merged into one category that contained 121 students (27.5 percent) who were 20 years of age and older. Students' prior experience with the Internet varied in three categories: 256 students (58.2 percent) with 1-2 years of experience; 127 students (28.9 percent) with 3-5 years of experience; and 57 students (13 percent) with over 5 years of experience. Finally, students' frequency of accessing the web-based course varied in six categories: 1 student (0.2 percent) who never accessed the web-based course; 31 students (7.1 percent) who were rarely accessing the course; 82 students (18.6 percent) who were accessing the course once a week; 186 students (42.3 percent) who were accessing the course once every two days; 121 students (27.5 percent) who were accessing the course once a day; and 19 students (4.3 percent) who were accessing the course more than once a day. Similar to what we did to the age categories, the first two categories of frequency of accessing the web-based course ("Never" and "Seldom") have been merged into one category that included 32 students (7.3 percent) who rarely or never accessed the web-based course, see Table 3.

Table 3: Frequency and Percentage of Students by Levels of Independent Variables (Possible Predictors)

Independent Variable (IV)	Levels of IV	N	Percentage
Gender			
	Male	225	51.1
	Female	215	48.9
	Total	440	100
Age			
	Less than 20 years	319	72.5
	20 years and above	121	27.5
	Total	440	100
Prior Experience with the Internet			
	From 1 to 2 years	256	58.2
	From 3 to 5 years	127	28.9
	Over 5 years	57	13.0
	Total	440	100
Frequency of Accessing the Web-based Course			
	Seldom or Never	32	7.3
	Once a week	82	18.6
	Once every two days	186	42.3
	Once a day	121	27.5
	More than once a day	19	4.3
	Total	440	100

To gather information regarding the predicted variable and its possible predictors, the previously-mentioned instrument was handed to students during the last week of the semester.

Research Question: The central problem was the prediction of learners' attitudes toward web-based instruction. A distinguished feature of this study was the combining of multiple variables as possible predictors of learners' attitudes toward web-based instruction. The research question for this study was the following:

Can age, gender, prior experience with the Internet, and frequency of accessing the web-based course predict learners' attitudes toward web-based instruction?

Data Analysis: For the purpose of predicting learners' attitudes toward web-based instruction from the four

possible predictors (age, gender, prior experience with the Internet, and frequency of accessing the web-based course), multiple regression analysis was used to analyze the data using the stepwise approach. The stepwise approach was utilized to determine what proportion of the learners' attitudes variance was accounted for by the significant predictor(s). Descriptive analyses were also used to provide information regarding means and standard deviations of different variables. The SPSS statistical package was utilized to compute all statistics reported in the following section.

Results and Discussion

Descriptive Analysis: Table 4 shows the descriptive analysis for the eleven items of the attitudes scale. As mentioned before, these items measure the predicted (dependent) variable, learners' attitudes toward web-based instruction. The data shown in table 4 revealed an overall mean score of 4.02; indicating high learners' attitudes toward web-based instruction.

Table 4: Means and Standard Deviations for Items of the Attitudes Scale

	N	Mean	SD
Item #1 Encourages me to learn more	440	4.09	1.175
Item #2 Improves my discussion skills	440	4.09	1.175
Item #3 Makes me feel more involved with the class	440	4.38	1.124
Item #4 Makes me realize the importance of the studying materials	440	3.75	1.161
Item #5 Encourages me to take courses taught in a similar way	440	3.99	1.138
Item #6 Makes me feel more prepared for the examinations	440	3.47	1.213
Item #7 Stimulates my interest in what I learn	440	3.58	1.397
Item #8 Encourages me to ask more questions	440	4.16	1.267
Item #9 Provides me with a new positive learning experience	440	4.59	1.095
Item #10 Enhances my ability to understand & evaluate viewpoints	440	3.87	1.153
Item #11 Makes me feel more responsible for studying	440	4.21	1.104
Average	440	4.02	1.062

As shown in Table 4, items 1, 2, 3, 8, 9 and 11 were perceived by students as the most advantageous items for using web-based instruction. Based on the same table, it is interesting to notice that all items have mean points above 3.47, which gives a positive indicator about learners' satisfaction with web-based instruction.

Table 5 displays the means and standard deviations of learners' attitudes at different levels of the independent variables. Based on the table, males and females tend to have the same level of attitudes toward web-based instruction.

The two categories of age seem to have close levels of attitudes toward web-based instruction. Regarding prior experience with the Internet, we can notice that as we move from a category with less experience to a category with higher experience, attitudes toward web-based instruction tend to increase accordingly. The same can be said about the categories of the frequency of accessing the web-based course variable.

Table 5: Means and Standard Deviations of Learners' Attitudes by Levels of Independent Variables (Possible Predictors)

Independent Variable (IV)	Levels of IV	N	Mean	SD
Gender				
	Male	225	4.02	1.054
	Female	215	4.01	1.071
	Total	440	4.02	1.062
Age				
	Less than 20 years	319	4.03	1.063
	20 years and above	121	3.99	1.061
	Total	440	4.02	1.062
Prior Experience with the Internet				
	From 1 to 2 years	256	3.93	1.059
	From 3 to 5 years	127	4.07	1.065
	Over 5 years	57	4.31	1.072
	Total	440	4.02	1.062
Frequency of Accessing the Web-based Course				
	Seldom or Never	32	3.11	1.061
	Once a week	82	3.77	1.075
	Once every two days	186	4.13	1.056
	Once a day	121	4.23	1.062
	More than once a day	19	4.33	1.072
	Total	440	4.02	1.062

Correlation Analysis: Correlation coefficients were computed among the five variables used in the study. Using Bonferroni approach to control for Type I error across the 10 correlations, a p-value of less than .005 (.05/10=.005) was required for significance. The results of the correlational analyses are presented in table 6. The first row lists the correlation coefficients between the possible predictors and the predicted (dependent) variable, learners' attitudes toward web-based instruction. It is interesting to note that the correlations between each of gender, and age, and the predicted variable are negative, relatively small, and statistically not significant. However, the correlations between the other two predictors (prior experience with the Internet and frequency of accessing the web-based course) and the predicted variable are positive, relatively close to medium, and statistically significant. In fact, the strongest correlation existed between frequency of accessing the web-based course and the predicted variable (r=.279). The second strongest correlation was between the predicted variable and prior experience with the Internet (r=.223). Among the predicted variables, the table reveals a positive, close to medium, and statistically significant correlation, $r(438)=.214$, $p<.001$, between gender and prior experience with the Internet. The correlation between prior experience with

the Internet and frequency of accessing the web-based course is not significant, r(438)=.108, p=.063. Similarly, the rest of the correlations among predictors have proved to be non-significant.

Table 6: Correlations among the Five Variables Used in the Study

Variables	1	2	3	4	5
1. Learners' Attitudes toward Web-based Instruction	1.000	-.006	-.055	**.223***	**.279***
2. Gender		1.000	.139	**.214***	.074
3. Age			1.000	.059	-.084
4. Prior Experience with the Internet				1.000	.108
5. Frequency of Accessing the Web-based Course					1.000

* p<.005

Multiple Regression Analysis—Stepwise Approach

Table 7 shows the results of the stepwise regression analysis using four variables as predictors. Step one of the analysis revealed that prior experience with the Internet is a significant predictor of learners' attitudes toward web-based instruction, R^2=.05, adjusted R^2=.048, F(1,438)=23.01, p<.001. This result is supported by the close to moderate correlation between the two variables (r=.223). Approximately 5% of the variance of the learners' attitudes variable was accounted for by its linear relationship with learners' prior experience with the Internet.

Step two of the stepwise regression analysis indicated that the frequency of accessing the web-based course variable did add significantly to the prediction of learners' attitudes toward web-based instruction R^2 change=.066, F(1,437)=32.359, p<.001.

Table 7: Results of Stepwise Regression Analysis Using Four Variables as Predictors

Step	Variable	R	R Square	Adjusted R Square	R Square Change	F Change	Sig. F Change
1	Prior Experience	.223	.050	.048	.050	23.011	.001
2	Prior Experience & Frequency of Access	.340	.115	.111	.066	32.359	.001

Variable	Weight (B)	T	P-value
(intercept)	2.85	30.62	0.001
Prior Experience	0.06	2.83	0.001
Frequency of Access	0.21	14.03	0.001

The same step also showed that the linear combination of the two variables (prior experience with the Internet and frequency of accessing the web-based course) was significantly related to the learners' attitudes variable, R^2=.115, adjusted R^2=.111, F(2,437)=28.509, p<.001. This means that almost 11% of the variance of the learners' attitudes variable was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course. And since the correlation between prior experience with the Internet and frequency of accessing the web-based course is not significant, r(438)=.108, p=.063, the frequency of accessing the web-based course variable accounts for almost 6% (11%-5%) of the variance of the learners' attitudes variable.

As explained above, the previous stepwise multiple regression procedure resulted in a mathematical model that explained 11% of the variance of learners' attitudes toward web-based instruction. The prediction equation for this model is as follows:

Attitudes = 2.85 + 0.06 (Prior Experience) + 0.21 (Frequency of Access)

Note that the relationship between attitudes and prior experience runs in a positive direction, meaning that learners with more prior experience with the Internet are more likely to have higher attitudes toward web-based instruction. In this study, students with over 5 years of experience with the Internet, although constituting 13% of the sample, had the highest level of attitudes toward web-based instruction. A similar relationship exists between attitudes and frequency of access. Learners who access the web-based course more frequently are more likely to have higher attitudes toward web-based instruction. In our study, students who reported that they were accessing the web-based course more than once a day had the highest level of attitudes toward web-based instruction. The lowest level of attitudes existed among students who never accessed the web-based course.

In summary, the above equation suggests that from learners' perception, promoting web-based instruction can be achieved through:

1. Increasing learners' prior experience with the Internet. This can be done by having students take prerequisite introductory courses that focus on Internet basic skills, like navigating the Internet, searching the Internet for specific information, using email to exchange information, downloading information from the Internet, and designing web pages. Although this study did not examine the type of prior experience with the Internet, we believe that it is worthy of investigation and is recommended for future study.
2. Increasing learners' frequency of accessing the web-based course. This can be done by increasing students' interaction with the web-based course through, for example, online discussion-boards, online quizzes and tests, online assignments, email and messages, online announcements, online projects, and others.

Conclusion: As more and more institutions of higher education plan to integrate web-based instruction into their settings, it is imperative to understand and predict learners' attitudes toward this new form of learning. By being able to predict learners' attitudes, instructors and decision-makers can improve and enhance students' learning experience.

The purpose of this study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

The findings of this study revealed that age and gender have no significant relationships with students' attitudes toward web-based instruction. In this regard, the study

goes in line with the findings of other studies (Jiang & Shrader, 2001; Koohand & Durante, 2003; Koohang, 2004).

Emphasizing the results of the work done by Koohang (2004), this study showed that learners' prior experience with the Internet and their frequency of accessing the web-based course may act as predictors of their attitudes toward web-based instruction. More precisely, the study showed that approximately 11% of the variance of learners' attitudes was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 143-148

Effects of Using Computer Games as an Instructional Tool on Third Grade Students' Acquisition of Higher Order Thinking Skills

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Received Date: Aug. 22, 2004 **Accepted Date: April 3, 2005**

Abstract: *The purpose of this study is to investigate the effect of computer games as an instructional tool on third grade students' acquisition of higher order thinking skills. Three instructional computer games that cover the content of three lessons in Arabic, Mathematics and Science textbooks were used. Thirty-two students served as the experimental group and were taught via computer games, and 31 students served as the control group and were taught the same content without using computer games. Subjects were all chosen from a public school in Irbid in the northern part of Jordan. The target higher order thinking skills were analysis, synthesis, and evaluation, assessed by an achievement test designed for this purpose. The results of the study revealed significant differences among students in the acquisition of the three levels of higher order thinking skills in favor of the experimental group, indicating a significant effect of computer games on acquiring higher order thinking skills. (**keywords**: Computer assisted instruction, computer games, thinking skills).*

أثر استخدام ألعاب الحاسوب كونها وسيلة تعليمية في اكتساب طلبة الصف الثالث الأساسي لمهارات التفكير العليا

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ملخص: هدفت هذه الدراسة إلى الكشف عن أثر العاب الحاسوب كونها وسيلة تعليمية في اكتساب طلبة الصف الثالث الأساسي لعمليات التفكير العليا، وتم استخدام ثلاث العاب تعليمية تغطي محتوى ثلاثة دروس من كتب اللغة العربية والرياضيات والعلوم للصف الثالث الأساسي. وقد تكونت عينة الدراسة من 32 طالباً مثلوا العينة التجريبية التي درست المحتوى باستخدام العاب الحاسوب كونها وسيلة تعليمية، و31 طالبا درسوا المحتوى نفسه باستخدام الوسائل الاعتيادية، وقد تم اختيار أفراد الدراسة جميعهم من إحدى المدارس الحكومية في مدينة إربد في الأردن. وتحددت مهارات التفكير العليا بمهارات التحليل والتركيب والتقويم، وتم تقييمها باستخدام اختبار تحصيلي صمم لهذا الغرض، وقد أظهرت نتائج الدراسة وجود فروق دالة إحصائياً بين أفراد عينة الدراسة في اكتساب مهارات التفكير العليا وعلى مستويات التفكير الثلاثة ولصالح أفراد المجموعة التجريبية. (**الكلمات المفتاحية**: التعليم بالحاسوب، ألعاب الحاسوب، مهارات التفكير).

Playing games is one of the most common activities used in elementary schools. They play an important role in the psychological, social and intellectual development of children. Playing is a voluntary activity that is intrinsically motivating. Therefore, teachers use it as one technique that increases activity and makes learning a pleasant experience, affording joy, fun and humor (Rieber, 1996). Indubitably, these attributes closely match those of modern educational theories (Behavioral theory and Cognitive theory) where learning should be a self-motivating and rewarding activity.

Because of the development in utilizing computers in all aspects of life, the nature of games children play has changed dramatically. Playing games has switched from traditional instructional practices to a technology-based learning environment. This transition has attracted a great deal of interest especially after the widespread of computers (Bright & Harvey, 1984). Computers have spread through schools, homes and society. They have taken over children's minds and the way they view the world. Studies revealed that the most popular home activity preschool children enjoy is playing computer games (Mumtaz, 2001). It has been argued that the computer age has replaced book-based learning and a recent survey found that 15-year-old boys spent less than two hours a week reading books for pleasure, compared with 11 hours a week watching television and nine hours playing computer games (Kerawalla & Crook, 2002).

Studies all over the world confirm that games are the most common application of computers especially among children. A study in the UK carried out by Livingstone and Bovill (1999) examined computer use both at home and at school for children aged 6-17 years and found out that most home computer activity (77%) centers on games. Worldwide, another piece of research conducted by Setzer & Duckett (1994) revealed that over 10.5 Billion US Dollars were spent worldwide on electronic games for home use in 1993.

Because of the popularity of electronic games, educators began considering their applications to classrooms. Educators discovered that electronic games can fit into the educational environment in a variety of ways,

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ranging from creating total-learning systems to serving as components in more traditional learning environment (Al Mubireek, 2003).

Many people consider games just as a means of entertainment and not as part of the educational software, thus having little connection with the schools' agendas. Some researchers went on to say that the prolonged and excessive use of electronic games contribute to an obsessive, addictive behavior, dehumanization of the player, desensitizing of feelings, health problems and development of anti-social behavior as well as other disorders (Setzer & Duckett, 1994). Most researchers, however, confirm that the advantages of computer games overweight their disadvantages. According to Tzeng (1999), children may obtain many benefits when playing games. Games typically elicit complete mental involvement from participants, have concrete goals and rules that help focus attention and direct action, require a high degree of player interaction, provide immediate feedback, incorporate variable levels of challenge to keep players involved as their skills increase, enhance recall and transfer of knowledge, and evoke mental imagery that facilitates the retention of educational materials embedded in the game (Quinn, 1997). Klein and Frettag (1991) noted that the essential elements of computer games such as 3D sound, graphics, and story telling, provide a powerful sense of interactivity and control, while immersing the user with the information or content of the game.

Researchers in technology-based learning environment have found that playing computer games contributes to the enhancement of thinking skills. Games could significantly facilitate children's cognitive processes such as making inferences and logical thinking skills. The researchers assert that incorporating games into an instructional design improves students` skills in practical reasoning, making inferences and engaging in inductive reasoning (Pillay, Brownlee, and Wills, 1999). Moreover, computer games enhance higher order thinking skills through the combination of visual and interactive learning experience that includes sounds, pleasant signs, applause, and other forms (Pogrow, 1994; Arnas, 2002). They often include problems that develop critical thinking defined as the analysis and evaluation of information in order to determine logical steps that lead to concrete conclusions (Doolittle, 1995). Visualisation, which is an important element of computer games, is a key cognitive strategy that plays an important role in discovery and problem solving (Betz, 1995-1996). In addition, many of the problems presented in games require students to form mental representations and manipulations of objects or elements (Amory, Naicker, Uincent, and Adams, 1999).

Studies of expert and novice computer games players (Pillay et al, 1999) suggest that in moving from a novice to an expert player, cognitive processes may be enhanced. The studies revelead that expert players highly organised knowledge structures. Since the recreational computer games players would need a highly organised knowledge structure in their internal representations, these would help them efficiently deploy knowledge and make meaningful inferences when confronted with situations. These studies suggest that experts have efficient cuing and linking mechanisms in their knowledge stuctures. Playing recreational computer games involves encoding explicit information presented in the game and consructing internal representation. Initially, novice players would be reliant on surface features in their knowledge construction that, over time, would presumably become organized knowledge structures when prompted with certain games situations.

It is undeniable that playing games requires skills children need in order to simultaneously and selectively attend to a number of different pieces of information displayed on the screen (Fromme, 2003). Often this takes place under specific time constrains that restrict the extent of exploration one can afford (Amory, et al, 1999). In addition, when a student plays recreational games, it is necessary for him to use a mixture of his own idea and technical concepts in the simulation which makes him navigate through the given information and make connections between information from different scenes. Such a process requires maintaining temporal information in memory as one moves between screens (Gokhale,2002).

Playing computer games requires many skills such as processing information explicitly in graphics in addition to skills of processing complex mental representations such as those found in most problem-solving tasks. Studies conducted by Pillay, Brownlee, and Wills (1999) indicated that while playing computer games, players practiced complex cognitive processes such as interpreting explicit and implicit information, inductive reasoning, metacognitive analysis, and problem solving. All of these cognitive processes suggest that playing computer games can benefit the development of thinking skills that could not necessarily be encouraged easily through other media. The British Communications and Technology Agency (BECTA,2001) funded a pilot study in computer games in education. One of the conclusions of the study was that students can receive immediate feedback on their actions and decisions as well as invite exploration and experimentation through games.

The need to prepare students for the Information Age is a recurring theme in the Educational Reform Movement. The arrival of the Information Age has made the acquisition of higher-order thinking skills among learners crucial, and developing these skills has become a national goal in many countries. Many researchers (e.g, Pogrow, 1994; Scott, Cole, Engel, 1992) argue that for students to be competitive in years to come, teachers need to be able to provide them with cognitive strategies that will enable them to think critically, make decisions, and solve problems.

Educators believe that knowledge of the basics is no longer sufficient in the ever-changing society; therefore, thinking skills have become at the top of their agendas. Harris (1999) states that generations of the information age must learn not only how to access information, but more importantly how to manage, analyze, critique, cross-reference, and transform it into usable knowledge. These high level skills of thinking are best acquired when learners construct knowledge rather than passively ingest information (Hopson, 1998)

The above review of literature suggests that computer games can play an effective role in enhancing thinking skills if incorporated into the instructional practices. Not only can computer games enhance basic skills of thinking, but also they can enhance higher order levels of thinking, which this study examines.

Through reviewing the literature, the researcher has not encountered any empirical study addressing this issue in the Jordanian setup in spite of the ongoing efforts that the Jordanian government has put to utilize computer in education and, in spite of the educational policies in Jordan that tend to make the development of higher order thinking skills among its main priorities.

Higher-order thinking essentially means thinking that takes place in the higher-levels of the hierarchy of cognitive processing. Bloom's Taxonomy is the most widely accepted hierarchical arrangement of this sort in education and it can be viewed as a continuum of thinking skills starting with knowledge-level thinking and moving eventually to an evaluation-level of thinking.

Research Question: This study addressed the following research question:

Does using computer games as an instuctional tool contribute to the development of higher order thinking skills among third grade students in Jordan?

Significance of the study: This study will enrich the limited research on the use of computer in the elementary stage in general and the use of computer games in particular to enhance the development of the students' higher order thinking skills. What makes this study more important is the popularity of computer games among children and the high probability of utilizing them for the benefit of school-age children. It will ultimately provide data that may be used to make the use of computers in the elementary school more effective. The results of the study will also be useful for educators who are formulating technology plans in Jordan and in other Arab countries as well.

Operational Definitions of Terms: In this study, key terms are defined as follows:

Higher order thinking skills: They are the cognitive skills that allow student to answer questions that require him/her to function at the levels of Analysis, Synthesis, and Evaluation according to Bloom's Taxonomy of the cognitive domain. The questions were derived from the content of three lessons in the third grade' textbooks of math, science, and Arabic language in Jordan.

Analysis: It is the ability of the third grade student to answer questions in math, science, and Arabic, and to break down a whole object or idea into its component parts.

Synthesis: It is the third grade students' ability to answer questions in math, science, and Arabic language that require him/ her to combine component parts or ideas to create a whole or a solution.

Evaluation: A third grade student's ability to answer questions that require him/her to make quantitative and qualitative judgments in math, science, and Arabic.

Instructional Computer Games: Three instructional computer games were used in this study chosen from a group called "School of Digital Heroes". The games were presented to students in Arabic and covered a content of three lessons in the Arabic Language, Mathematics, and science textbooks of the third grade in Jordan.

Methods

Subjects: A school was randomly chosen out of four schools in Irbid in north Jordan that have computer labs and more than one section of the third grade. Two sections consisting of 63 students were randomly chosen from that school; one of the selected sections which consisted of 32 students was assigned to the experimental group, and the other section that consisted of 31 students was assigned to the control group.

Materials: The following materials were used in the study:

Instructional computer games: Twelve instructional games representing the Arabic language, mathematics, and science were selected. All the games were given to a jury of six experts in the field of Elementary Education and Educational Psychology at the college of Education at Yarmouk University. The experts were asked to choose three games, one in each subject, they thought they were the most appropriate for the sample of the study. Most experts (80%) chose three instructional games from a group Called "School of Digital Heroes"; these games were part of an electronic textbook designed by an educational technology company in Jordan.

The three games were designed in the Arabic language and were part of electronic textbooks of three subjects; namely the Arabic Language, Science, and Mathematics. The textbooks were designed in a way so that most of their activities can be used as Instructional games. Games in these textbooks were used as a tool to facilitate learning and make it more enjoyable. This may enable students to play and learn simultaneously, as instructional games may help them learn through creating situations in which learning is associated with fun, excitement and suspense. The games used are the following:

A. Digital gate: This game represents the content of the math lesson (The multiplication). The games used to encourage mathematical and strategic thinking. At the beginning the student has to select a number from one to ten. After selecting the

number, the student is given a math problem. Each problem has three answers; only one of them is correct. Every time the student chooses the correct answer, it will help the children in the game move a step toward the digital gate and players will get reinforcement in the form of music, cheering sounds, and clapping. If a wrong answer is given, the digital gate shut down; going through the gate is forbidden, and the student has to start the game again.

B. Digital monsters: this game covers the content of the science lesson (Space Invasion). In this game the student is asked to help digital kids in their fight with monsters. The student has to think of different ways to provide help. Answering questions given to him about the content of the lesson is the most effective way to kill the monster. Each time a student gives a correct answer, one of the monsters is killed. The student is allowed to give the wrong answer three times, after that he starts the game from the lowest level. After finishing the game the student gets reinforcement and saves the world from the monsters.

C. Hunting Pokemons: This game covers an Arabic lesson (Cooperation) from the Arabic Language textbook. In this game, a player walks through a maze to reach and hunt a Pokemon at the end of the maze. Player students have to think of ways to hunt Pokemons and all the ways require an understanding of the content of the lessons. A student moves one step forward if he gives a correct answer. If he gives a wrong answer, he has to start over the games and meets new questions. When he answers all the questions, the student reaches the end of the maze and catches the Pokemon.

Higher Order Thinking Skills Test: An achievement test was constructed to measure higher order thinking skills. The test that covered the content in the instuctional games was derived from science, Math, and Arabic textbooks. From each subject a lesson was coverd. The lessons were "cooperation" from the Arabic Language textbook, "multiplication" from the Math textbook, and "Space Invasion" from the science textbook The achievement test consisted of thirty-multiple choice items, each item has three alternatives. Each correct answer was given one point, while the incorrect answer was given zero. The thirty items were distributed equally on the three levels of higher order thinking (analysis, senthysis, and evaluation).

In the first draft, the achievement test contained 45 items; it was given to a jury of 12 experts in the field of Elementary Education and Educational Psychology. The experts were asked to determine to which level of thinking each item belongs and the appropriateness of each item to the cognitive level of the students. After making the modifications and changes they requested, the researcher kept 30 items that constitute the final version of the test. The items that were kept are the items that 80% of the experts agreed on. Here is an example on each level of thinking from the three lessons which were translated from Arabic to English:

Analysis level:

- The similarity between the actual moon and the artificial moon is:

A. Both of them are lighting.
D. Both them rotate around the earth.
E. No human beings live in both.

Synthesis level:

A family has four children all of them are in schools; each child needs 12 JDs each year to buy textbooks; how many JDs do children need to buy in three years?

A. 84
B. 96
C. 144

Evaluation Level: What would happen to the Arab countries if they united and became one state?

A. Their problems would increase.
B. They would become more powerful.
C. They would become weak.

To determine the test reliability, the researcher used Kudar Richardson 20 formula, which revealed a reliability coefficient of 0.72.

Procedures: Two graduate students from the college of education at Yarmouk University helped the researcher in training the experimental group to gain the basic skills in using the computer, in particular the skills of using the mouse, which is the main skill students need to play computer games. The subjects were trained for a week (an hour a day) working with Microsoft Paint and playing Solitaire. The students in the experimental group were taught the three lessons by their teacher using instructional computer games in the computer lab, simultaneously with their peers in the control group, who studied the same content in their classroom using the traditional method of teaching which is the method of teaching that students used to. Each lesson was taught in one day. After studying the content, both groups took the post-test.

Results and Discussion: To answer the research question, the researcher calculated the means and standard deviations of students' performance on the higher order thinking skills test and presented them in Table (1)

Table (1): Means and standard deviations of the subjects' performance on the post test

Level of thinking	Groups					
	Experimental			Control		
	Mean	SD	N	Mean	SD	N
Analysis	8.8125	.8206	32	7.9032	.7463	31
Synthesis	8.6563	.7453	32	7.2903	.9379	31
Evaluation	7.5000	.7184	32	6.8065	.7033	31

Table (1) shows differences in the achievement between the control and the experimental groups. To determine the significance of these differences and since the study is qusi-experimental, multivariate analysis of co-variance (Mancova) was conducted and the results are represented in Table (2)

Table (2): Multivariate analysis of covariance (Mancova) of students' performance on the posttest

Effect	Multi variate Test	Value	F	Hypothe-sis df	Error df	Sig.	Eta Squared
PANALYSI	Wilks' Lambda	0.55	14.97	3	56	0.00	44.5%
PSYNTHES	Wilks' Lambda	0.74	6.67	3	56	0.00	26.3%
PEVALUAT	Wilks' Lambda	0.76	5.93	3	56	0.00	24.1%
GROUP	Hotelling's Trace	1.78	33.26	3	56	0.00	64.0%

Table (2) shows that there is a significant difference between the two groups in their performance at different levels of higher order thinking skills. To determine which levels of thinking, the difference Analysis of covariance was conducted. The results are presented in Table (3).

Table (3): Analysis of covariance (Ancova) for students' performance on the three levels of thinking skills

Effect	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Pre-ANALYSI	ANALYSIS	14.566	1	14.566	45.385	0.000	43.9%
Pre-SYNTHES	SYNTHESIS	7.081	1	7.081	16.884	0.000	22.5%
Pre-EVALUAT	EVALUATION	6.322	1	6.322	17.905	0.000	23.6%
GROUPS	ANALYSIS	12.081	1	12.081	37.642	0.000	39.4%
	SYNTHESIS	30.333	1	30.333	72.325	0.000	55.5%
	EVALUATION	7.457	1	7.457	21.119	0.000	26.7%
Error	ANALYSIS	18.614	58	0.321			
	SYNTHESIS	24.325	58	0.419			
	EVALUATION	20.478	58	0.353			
Total	ANALYSIS	50.603	62				
	SYNTHESIS	72.984	62				
	EVALUATION	38.413	62				

Table (3) shows significant differences between the experimental group and the control group on all three levels of thinking skills, in favor of the experimental group (see Table 1).

This result suggests that using computer games in the classroom can enhance the levels of thinking skills. The result can be attributed to many factors. One of the main factors is the fact that playing games requires students to involve mentally in the game. This involvement happened through manipulating objects and making inferences and decisions. More than that, the game itself represents an interactive learning experience, and incorporating computer games in teaching practices can make learning more entertaining and more fun. These results, also, support the ideas of Klein and Frettag (1991) who argued that the fantasy fulfillment elements of computer games allow players to become more excited and more adventurous and controlling their experience. This kind of experience allows students make extra effort more than the effort they make in the traditional learning situation. Computer games can also provide students with more challenges that entertain and engage the mind differently than the ones provided in books and other traditional media. The challenge may be how to solve puzzles or how to get the next level of a game. These activities required students to make an analysis and evaluation in order to determine logical steps. Incorporating computer games in the classroom instruction represents a new strategy of teaching, a strategy that is close to real and favorable life experience.

In early grades of elementary schools most teachers tend to use the traditional methods of teaching. This environment, where teachers dispense information, has greatly inhibited students` opportunities to think. In addition, most curriculum in early grades focuses on memorizing information rather than analyzing, synthesizing, and evaluating information. This environment caused difficulty in solving problems that require higher order thinking skills among students. All the activities that students get involved in will make students active learners and give them a chance to make decisions and take the responsibilities for these decisions.

The rationale for using games is that they help create a classroom atmosphere in which students at various levels of ability can collaborate in order to promote interest, motivation, enhancement of critical thinking and decision-making skills, and retention of information (BECTA, 2001). Computer games give enough freedom to students to search, discover, and learn to use self-activity (Alfaqih, 1995)

There are many elements in computer games that can make games an effective teaching strategy and enhance thinking skills. One of the main elements that helped the experimental group to perform higher than the control group is the adequate pay off they received when they accomplished a difficult task successfully. The rewards that students got came in different forms like sounds, pleasant signs, applause, and other forms. This element, as mentioned by Aranas (2002), can make learning experience have a tremendous effect on students` performance and improve their higher order thinking skills. Besides, incorporating computer games into teaching practices can make learning experience more interactive, provide higher levels of activity, and provide visual and audio themes and effects. Amory, Naicker, Vincent, and Adams (1999) suggested that a combination of these elements could make classroom learning exciting and fun.

Conclusion and recommendations: The results of the study revealed that using computer games as an instructional tool can contribute significantly to the enhancement of all levels of higher order thinking skills: analysis, synthesis, and evaluation. The results indicated that when students enjoy and love what they are doing, both their focus and attention to their tasks will increases, which eventually affects their thinking skills positively.

Since elementary schools in Jordan are highly equipped with computers, teachers are recommended to take advantage of this instructional tool to make their methods of teaching more effective. The focus of utilizing computers in Jordan is still limited to help students in acquiring basic computer skills. The need for teachers to be well-trained in incorporating computer games in their instructional practices seems to

be important in order to have them contribute to achieving the national goal in Jordan, namely preparing a new generation with high levels of thinking skills. The results of the study should encourage education decision makers in Jordan to put forward national plans to train teachers to be highly qualified in utilizing computers in all aspects of students' learning and integrate computer games into all subjects.

Since the relevant research indicated that using instructional games is the most effective strategy in elementary schools and the results of the present study support this idea, teachers in elementary classrooms are advised to activate this strategy and use computers effectively in designing and representing these games.

Finally, since the Arabic literature lacks the research in computer games and its utilization in all aspects of the children's development, the researcher recommends conducting other studies examining using computer games in developing other skills among learners and in teaching different subjects in different levels.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 149-153

The Use of Arabic in Classes of English as a Foreign Language (EFL)

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Received Date:Dec. 5, 2004 Accepted Date: Feb. 24 , 2005

***Abstract**: The purpose of this study was to investigate the effect of using Arabic in EFL classes. To achieve this purpose, the researchers distributed a questionnaire about the use of Arabic in EFL classes to the teachers and students of ordinary-level English at Rawdet Al-Ma'aref School in Amman, Jordan. The results of the study showed that 100% of the students and 90% of the teachers felt that Arabic should be used in their EFL classes. The respondents emphasized the fact that cultural and religious concepts should be taught by referring to Arabic in EFL classes. A noticeable percentage (85%) of students and (75%) of teachers agreed that Arabic should necessarily be used to introduce grammatical rules. The findings of the study should be taken into consideration by teachers of English as a foreign language as well as textbooks writers and curricula designers.(**Keywords:** EFL, Arabic, English, Classes)*

استعمال اللغة العربية في تدريس اللغة الانجليزية لغة أجنبية

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ملخص: هدفت هذه الدرا سة الى تقصي أثر استعمال اللغة العربية في تدريس اللغة الانجليزية لغة أجنبية. ولتحقيق هذا الهدف وزّع الباحثان استبانه تحتوي على أبرز استراتيجيات استعمال اللغة الأم في تدريس اللغة الأجنبية على طلبة اللغة الانجليزية ومعلميها في مدرسة المعارف في عمان –الأردن، بيّنت هذه الدراسة أن الطلبة جميعهم ونسبة عالية (90%) من المعلمين شعروا بوجوب استخدام اللغة العربية في حصص اللغة الانجليزية مؤكدين أثر استخدام اللغة الأم في توضيح المفاهيم الثقافية والدينية، وأن نسبة 85% من الطلبة و 75% من المعلمين قالوا بضرورة استخدام اللغة العربية في حصص اللغة الإنجليزية لتوضيح المفاهيم الصعبة وقواعد هذه اللغة. وقد أوصى الباحثان بضرورة أخذ نتائج الدرا سة بعين الاعتبار في تدريس اللغة الانجليزية لغة أجنبية، وفي تصميم المناهج والكتب المدرسية. (**الكلمات المفتاحية** : العربية، تدريس ، الانجليزية ، لغة أجنبية)

Introduction: Where there was once a consensus on the "right" way to teach foreign languages, many teachers now share the belief that a single right way does not exist. It is certainly true that no comparative study has consistently demonstrated the superiority of one method over another for all teachers, all students and all settings (Gina, 1994). Originators of most of the methods aim to enable students to communicate using the target language. However, many methodologists emphasize the importance of the first language (L1) in understanding the second language (L2) (Lado,1964and 1978; Khalil,1985; Hamdallah,1990; Tushyeh,1988; Kharma,1987; William,1999; Alexander,1994; Asher,1982; Mahmoud,1997; Mukattash,1986; and Bawcom,2002, among others).

A contrastive analysis (CA) between the students' native language and the target language will reveal the area where a teacher should expect the most interference. CA is a comparison of two languages for the purpose of predicting errors made by the learners of a target language and designing teaching materials that will take account of the anticipated errors.

CA has application in predicting and diagnosing a proportion of the errors made by L2 learners with a common L1 and in the design of testing instruments for such learners.

There seems then to be three things that CA can predict: it can predict what aspects will cause problems; it can predict difficulty; and it can predict errors.

As far as course design is concerned, CA also carries suggestions about selecting target language items (what to teach) and grading these items (when to teach). The learner, for example, must be allowed and encouraged to transfer his suitable L1 knowledge to L 2 usage. This means that those L 2 structures that match L1 structures must constitute part of the materials.

Lado (1964) stated that a student who learns a foreign language will find some of its features quite easy and others extremely difficult. The features that are similar to his native language will be simple for him while those which are different will be difficult. Lado added that since it is a universal principle of education that learning should proceed from the simple to the difficult, simple elements of L2 should be taught first.

Native language translation is used to make the meaning of the dialogue between the teacher and the students clear. The teacher also uses mother tongue in class when necessary. As the course proceeds, the

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teacher uses the native language less and less (Lozanov, 1982).

Students' security is initially enhanced by using their native language. Native language equivalents to the target language words are given to make their meanings clear and to help students to combine target language words in different ways to create new sentences (McLaughlin, 2003). In later steps, the target language is used interestingly. The native language can also be used to give instructions, especially at the beginning level of proficiency during the feedback sessions. More important, the knowledge students already possess of their native language can be exploited by the teacher of the target language (Gattego, 1972). The teacher assumes that he/she can build upon this existing knowledge to introduce the new sounds in the target language (McLaughlin, 2003).

Arabic-speaking students in the first and second secondary classes leave school with poor performance in spoken as well as written English. This was sounded at the 1995 summer course held jointly by the Palestinian Ministry of Education and Higher Education and Harvard Graduate School of Education. Lecturers and participants agreed that Arabic-speaking Palestinian learners of English should have adequate knowledge of the relationship between their native language and English in order to understand it very well and to overcome the errors that they make in writing and speaking it (Mahmoud, 1997).

Among a considerable number of professionals in the field of second language acquisition (SLA), there appears to be an increasing support that the use of the first language (L1) has a necessary and facilitating role in the classroom of English as a second/foreign language (ESL/EFL). The exploration of the problems in teaching and learning English together with their causes will surely help teachers and learners of English. Corder (1967:167), for instance, noted that "A learner's errors are significant in that they provide the researcher with evidence of how language is learned or acquired and what strategies or procedures the learners are employing in the discovery of the language."

In the process of learning a language, learners make errors many of which are predictable. These errors provide useful insight in understanding the complex process of second language acquisition. As confirmed by Corder (1967), Nemser (1971), Selinker (1969 and 1972), a lot of useful things can be learned from the students' errors; they supply learners and teachers with important data in the construction of a theory of language acquisition.

Thompson-Panos and Thomas-Ruzic (1983) stated that a better and more comprehensive understanding of the language background of Arab learners can help specialists in better addressing the special needs of the learners through supplying them with extra appropriate exercises, drills and questions.

Taylor (1975) described a model of second language learning which considered both processes of developing learning strategies, such as simplification and overgeneralization of target language rules and language negative transfer, as two manifestations of the same psychological processes; that is, learners rely on prior learning and knowledge to simplify and facilitate new learning.

A second language can be learned appropriately through raising awareness to the similarities and differences between L1 and L2. Besides, using L1 in L2 classes has made learning L2 appear to be less of a threat to its learners. The use of L1 in L2 classes encourages students to learn more about L2. Additionally, the learning of L1 may result in increasing receptivity to the learning of L2 (William, 1999).

In a provocative article, Auerbach (1993) gives a socio-political rationale for the use of L1 in ESL classrooms. In her article, she emphasizes the role of the ideological origins and thus she recommends starting the L2 classes with some of L1 which has the power to enrich the learners' sense of security and the validation of lived experiences.

A learner of L2 might feel that his /her identity threatened if he/she is encouraged to ignore his/her native language (Hopkins, 1988). Both Atkinson (1987) and Auerbach (1993) provide learners a well as teachers of L2 with appropriate situations for the use of L1 in L2 classes. Both emphasize the strong recommendation of using L1 in L2 classes when dealing with presentation of rules governing grammar, phonology, morphology and spelling. Likewise, they also recommend referring to L1 when dealing with cross-cultural issues. According to Terence Doyle (1997), sometimes, up to 90% of ESL class time may be dedicated to the use of L1.

Purpose of the study: The ultimate aim of this study is to find out if using L1 (Arabic) in L2 (English) classes would facilitate or hinder the teaching-learning process from teachers' and students' perspectives. In compliance with this purpose, the study seeks to answer the following questions:

1. How important is using Arabic in English classes for facilitating learning from students' perspectives?
2. How important is using Arabic in English classes for facilitating teaching from teachers' perspectives?
3. In what areas can using Arabic in English classes facilitate the teaching –learning process?

Subjects of the Study: The subjects of the study were 600 male students and 30 teachers of English at Rawdit Al-Ma'aarif School in Amman. Their grades ranged between the 5th and the 12th (Tawjihi) grades.

Instrument of the Study: A questionnaire was used for data collection. Students and teachers were asked to answer the questionnaire which contained questions about the effect of using Arabic in the English classes. The questionnaire consisted of seven questions: the first was a "Yes/No" question which asked the subjects of the study if they thought Arabic should be used in their EFL classes. The second question asked how much they

thought Arabic should be used in their EFL classes. The third question asked about the purposes of using Arabic in EFL classes. The fourth question asked about the percentage of time Arabic should be used in EFL classes. The fifth question asked how often they thought Arabic should be used in their EFL classes. The sixth question asked if using Arabic in EFL classes would help teachers to teach better and students to learn better. The seventh question was directed to the teachers, and it asked them to list the areas in which they thought Arabic should be used in EFL classes. The complete questionnaire is shown under "Results of the Study" below.

Validity of the Questionnaire: To ensure that the content of the questionnaire is valid, it was handed to a jury of five professional faculty members and school teachers majoring in teaching English as a foreign language. The members of the jury were asked to evaluate the appropriateness of the questionnaire to the whole purpose of the study. Consequently, they sent letters in which they ensured the validity of the questionnaire and recommended some modifications which were taken into consideration.

Results of the Study: The purpose of this study was to find out if the use of Arabic in English classes would facilitate the teaching-learning process from the teachers' and the students' perspectives. Following is the questionnaire with a table showing the subjects' responses to each of its questions:

1. In your opinion, do you think that Arabic should be used in the EFL classes?

Table 1: Subjects' Perspectives of Using Arabic in EFL Classes

Response	Students	Teachers
Yes	100%	90%
No	0%	10%

2. How much do you think Arabic should be used in the EFL classes?

Table 2: Subjects' Perspectives of the Amount of Time of Using Arabic in EFL Classes

Response	Students	Teachers
Not at all	0%	0%
A little	35%	50%
Sometimes	50%	40%
A lot	15%	10%

3. For what purpose do you think it is appropriate to use Arabic in the EFL classes?

Table 3: Subjects' Perspectives of the Purposes of Using Arabic in EFL Classes

Item	Students	Teachers
To explain difficult cultural and religious concepts	90%	80%
To introduce new material, especially grammatical rules	85%	75%
To summarize material already covered	4%	3%
To Test	10%	0%
To joke around with students	15%	10%
To help students feel more comfortable and confident	13%	6%
To check for comprehension	30%	11%
To carry out small group work	3%	2%
To explain the relationship between English and Arabic	N/A	3%
To define new vocabulary items	22%	13%

4. What percentage of time do you think Arabic should be used in the EFL classes?

Table 4: Subjects' Perspectives of the Percentage of the Time of Using Arabic in EFL Classes

Percentage of Time	Students	Teachers
0%	0%	0%
10%	25%	35%
20%	18%	15%
30%	20%	35%
40%	11%	10%
50%	8%	6%
60%	4%	5%
70%	3%	4%
80%	2%	0%
90%	1%	0%

5. How often do you think Arabic should be used in the EFL classes?

Table 5: Subjects' Perspectives of the Frequency of Using Arabic in EFL Classes

Response	Teachers	Students
Never	0%	0%
Very rarely	0%	0%
Sometimes	55%	35%
Fairly Frequently	45%	65%

6. Do you think that using Arabic in your EFL classes helps teachers to teach and students to learn English better?

Table 6: Subjects' Perspectives if Using Arabic in EFL Classes Helps Teachers and Students

Response	Teachers	Students
Not at All	0%	0%
Somehow	10%	15%
A Little	25%	20%
Fairly Much	30%	25%
Very Much	35%	40%

7. In which areas do you think Arabic should be used in EFL classes? (For Teachers Only: List as many areas as you want)

_____
_____
_____
_____
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_____.

In response to this question, teachers listed the following areas in which Arabic can be used in EFL classes:

1. Eliciting language, especially when dealing with abstract nouns that are difficult to be illustrated by pictures or by using sentences. Sometimes teachers are not good at drawing or acting, thus the use of Arabic becomes necessary
2. Checking and assessing listening or reading comprehension.
3. Giving complex instructions to students of basic levels.
4. Co-operating in groups: Learners compare, analyze and correct answers to questions, exercises, drills and other English activities. In this respect, Arabic plays the role of intrinsic motivation that is based on the needs and desires of students.
5. Explaining classroom techniques at basic levels.

6. Using translation to highlight recently taught language items.
7. Checking for tenses: This is very useful in composition and oral activities; if students say or write something in English that does not make sense, the teacher helps them to translate it into Arabic to realize their errors.
8. Testing: Translation items can be useful in testing mastery of forms and meaning.
9. Developing circumlocutory strategies: When students do not know how to say or write something in English, the teacher may ask them to think of different ways to say something in Arabic, which may be easier to translate.
10. Presentation of rules governing grammar, phonology, morphology, and spelling. This area is rich in aspects that include similarities between English and Arabic.
11. Discussing cross cultural issues.

Discussion: The results of this study showed that all students and 90% of their teachers felt that Arabic should be used in their EFL classes. Most of them emphasized the fact that difficult concepts, especially cultural and religious concepts, should be taught in EFL classes by referring to Arabic. Almost a similar percentage of weak students like to have Arabic in their grammar lessons because they felt that Arabic facilitated their learning of English. In almost all the cases of using Arabic in EFL classes, students responded notably higher than teachers on almost all the items listed in the questionnaire.

The findings of the study showed that in EFL classes, Arabic should be used to some degree. The respondents among the students felt that there are clear cases where Arabic facilitated their comprehension of what was happening in the classroom.

Almost 70% of the students preferred the use of Arabic in their EFL classes sometimes or often. This percentage was almost similar to Doyle's (1997), but higher than William's (1999). Most of the teachers agreed that using Arabic whenever necessary or convenient helped them establish a rapport with their students.

All teachers without exception emphasized the use of Arabic when students were exposed to socio-cultural English texts or issues. This finding is closely related to William's (1999). The researchers consider the lack of using Arabic in certain religious, cultural or political issues and abstract nouns as an overlooking of students' identity, and this in turn will increase their hatred to the foreign language.

Conclusion and Recommendations: There is a lot of harmony between this study and other studies which emphasize the importance of L1 and its great effect in understanding L2. (Lado, 1964; Khalil, 1985; Hamdallah, 1990; Tushyeh, 1988; Kharma, 1987; Kharma and Hajjaj, 1989; Khangi, 2002; Mukattash, 1986; Cambridge and Merseyside (1998); Mahmoud, 1997 and 2003, among others).

To those who oppose the researchers' point of view by saying that EFL classes are the only limited vehicle through which students can practice their English with their teachers, the researchers can say that there are other media via which students can use English: Radio, TV and Computer. This does not mean that the researchers are not aware of the fact that English should be looked upon as the vehicle of communication in the classroom, but wise, limited and directed using of Arabic in EFL classes can be useful to both teachers and students. Based on the results of this study, the researchers reaffirm the importance of the following points:

1. In EFL classes, there is a need to explain the main differences and similarities between English and Arabic. These similarities and differences help both teachers and students to get deeper understanding of the target language.
2. The designers of the English textbooks should provide students with material that covers exercises that demand translation from English into Arabic and vice versa.
3. In English classes there is a need to refer to Arabic so as to compare and contrast some religious and cultural concepts.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 155-165

An Analysis of Learners' Attitudes toward Online Interaction in a Web-based Course

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Received Date:Dece. 12, 2003 Accepted Date: May. 25, 2005

Abstract: *The purpose of this study was to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' attitudes, the study attempts to find whether online interaction promotes learning among learners. In view of that, the study focuses on the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course. The study surveyed 440 students who were enrolled in an accounting Web-based course offered by the Department of Accounting at the Hashemite University. Students were taught in a flexible mode of instruction. A Likert-type instrument was designed to collect information about learner's attitudes toward online interaction in the Web-based course. In addition to descriptive analyses, a five-way ANOVA was conducted to answer the research questions in this study. The findings of the study indicated that overall students positively perceived that online interaction in the Web-based course promoted learning. Gender, age, GPA, and years of experience with the Internet were not significant factors. However, there were significant differences among levels of learners' frequency of accessing the Web-based course in regard to their attitudes toward online interaction. In general, learners who had accessed the Web-based course more frequently indicated significantly higher positive attitudes toward online interaction. In light of these findings, this study recommends that students enrolled in Web-based courses need to be encouraged to engage in all means of online interaction available in these courses in order to promote their learning.(**Keywords:** Web-based instruction; Electronic learning; Online interaction; Internet-based instruction; Internet)*

تحليل إتجاهات المتعلمين نحو التفاعل الإلكتروني في مساق مبني على الإنترنت

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ملخص: *هدفت هذه الدراسة إلى قياس إتجاهات الطلبة نحو التفاعل الإلكتروني في مساق مبني على الإنترنت ، وبالتالي فقد سعت هذه الدراسة إلى تحديد ما إذا كان التفاعل الإلكتروني يعززتعلم هؤلاء الطلبة. وما إذا كان لعوامل الجنس والعمر والمعدل التراكمي وسنوات الخبرة السابقة في استخدام الإنترنت ومدى التردد على الموقع الإلكتروني للمساق الأثر في إتجاهات الطلبة نحو التفاعل الإلكتروني. شملت هذه الدراسة 440 طالباً ممن سجلوا مساق مبادىء محاسبة والذي طور الكترونياً وطرح عبر الانترنت . لقد عرض هذا المساق من قبل قسم المحاسبة في الجامعة الهاشمية ودرس بإستخدام أسلوب التعليم المختلط والذي يجمع التعليم التقليدي والتعليم الالكتروني معاً . وتم إعداد استبانة مطورة بإستخدام مقياس ليكرت لجمع البيانات اللازمة حول اتجاهات الطلبة نحو التفاعل الإلكتروني، وتم استخدام التحليل الوصفي وتحليل التباين الخماسي لتحليل هذه البيانات وللاجابة على أسئلة الدراسة. جاءت نتائج الدراسة لتظهر أن الطلبة اعتقدوا أن التفاعل الإلكتروني عزز تعلمهم. وأن ليس لعوامل الجنس والعمر والمعدل التراكمي وسنوات الخبرة السابقة في إستخدام الانترنت اثراً ملحوظاً على اتجاهاتهم نحو التفاعل الإلكتروني. وأظهرت النتائج أيضاً وجود فروق دالة احصائياً بين مستويات مدى تردد الطلبة على الموقع الإلكتروني بالنسبة لاتجاهاتهم نحو التفاعل الإلكتروني. وبشكل عام فإن الطلبة الذين ترددوا على موقع المساق بشكل أكبر هم الذين أبدوا اتجاهات ايجابية أكبر نحو التفاعل الإلكتروني. في ضوء هذه النتائج توصي الدراسة بضرورة تشجيع الطلبة المسجلين في المساقات المبنية على الإنترنت على الإنخراط في كل وسائل التفاعل الإلكتروني المتاحة في هذه المساقات لتعزيز تعلمهم.* (**الكلمات المفتاحية:** التعليم المبني على شبكة المعلومات، التعليم الالكتروني، التعليم بالإنترنت).

Introduction : Over the last decade, online instruction has become an integral part of the education agenda around the world. It uses the Internet and other information technologies to create educational experiences for learners (Horton, 2001). The importance of online instruction in education, especially higher education, springs from the fact that it offers a flexible educational environment, where instruction can happen anytime, anywhere, and increasingly, on-demand.

Several studies indicated that students taking online courses have similar test scores as students participating in traditional courses. For instance, studies conducted by Capper & Fletcher (1996), Moore & Thompson (1997), Morrissey (1998), Bradford (1999), Paskey (2001), Parker & Gemino (2001), Benbunan-Fich, Hiltz, & Turoff (2001), Tacker (2001), and Lynch (2002) to compare the effectiveness of online courses to that of face-to-face traditional courses led to the conclusion that online education is as effective as traditional classroom education.

Another study conducted by Navarro & Shoemaker (2000) concluded that online learners learn as well as or sometimes better than traditional learners, regardless of gender, ethnicity and academic background. Moreover, Hartman, Dziuban, & Moska (2000) found that in an

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Asynchronous Learning Network (ALN) course there were lower withdrawal rates and higher success rates. Therefore, online instruction can be seen as a means of improving productivity, efficiency and interaction (Weller, 2002). Online interaction was the concern of the current study.

Online interaction among learners, between the learners and the instructors, and between the learners and the course content in Web-based classrooms differs substantially from that in traditional classrooms (Thurmond, 2003). Moore and Kearsely (1996) discussed three types of interaction which exist in Web-based courses: learner-content interaction, learner-instructor interaction, and learner-learner interaction. Much of the learner-content interaction happens through using a hypermedia text. Accessing content, displayed on Web-pages designed by the instructor, links embedded in these content Web-pages, and other Web-sites discovered by learners are considered part of learning (Thurmond, 2003). Learner-content interaction also happens through simulations, problem solving, testing, and experiential tasks. Learner-learner and learner-instructor interactions can be created through email, threaded discussions, chat, and conferencing (Marks, 1998).

In Web-based courses, online interaction is important to the learning process. According to Driscoll (1998), online interaction helps learners to develop application, analysis, synthesis, and evaluation skills. It also promotes diverse viewpoints and alternative ways of looking at problems (Driscoll, 1998). A major challenge for researchers and instructors is, therefore, to investigate online interaction and examine its effectiveness in promoting learning.

The purpose of this study was to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' attitudes, the study made an effort to find whether online interaction promotes learning among learners. In view of that, the study focused on the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course to test whether these variables are significant factors in learners' attitudes toward online interaction.

Statement of the Problem: Because instructional delivery on the Internet in higher education in Jordan is such a new application, there is a dearth of existing body of research. There is a need for basic research in the delivery of web-based courses at the university level in Jordan.

Many educators believe that interaction is an essential component of the learning process. Jaffe (1997) stated that learning is essentially a social process that requires interaction for the purpose of expression, validation, and the development of the self as a knowledgeable learner. Accordingly, a reasonable task is to examine online interaction that occurs in web-based courses. A logical place to start is to survey the pioneering institutions in Jordan that have developed and delivered web-based courses to learn from their experiences and identify their concerns. The Hashemite University has been among the first institutions in Jordan that integrated web-based instruction into its educational settings. Therefore, this study came to explore learners' attitudes toward online interaction in a web-based course offered at the Hashemite University. For a better understanding, the study examined learners' attitudes as reflected by gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course.

Research Questions: This study was designed in an attempt to answer the following questions:

1. What are the attitudes of learners toward online interaction in a Web-based course?
2. Are there any statistically significant differences at (α=0.05) in learners' attitudes toward online interaction in a Web-based course that are due to gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course?

Importance of the Study: The findings of this study should help administrators and faculty in Jordanian institutions address implementation issues related to web-based delivery. The study provides valuable information for administrators on how to enhance the delivery of instruction in web-based courses. Faculty will also gain insights into how online interaction can be used with face-to-face instruction.

The study is evidence of how learners in a web-based course view online interaction and whether their gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course play a role in how they view that interaction.

Limitations and Delimitations: The limitations and delimitations of this study included the following:

1. The target population of the study was limited to students enrolled in the "Accounting Principles (1)" offered by the Department of Accounting at the Hashemite University in the second semester of the academic year 2003-2004.
2. The design of this study was survey research.
3. This study was delimited to the use of a survey instrument as the primary method of gathering data.

Definition of Terms: For the purpose of this study, the following defined terms are required:

Attitude: a learned predisposition to respond in a consistent manner to a given object or situation (Fishbein & Ajzen, 1975).

Web-based courses: courses that are mediated and supported by the attributes and resources of the Internet (Brooks, Nolan, & Gallagher, 2001).

Online interaction: electronic communication in web-based courses (Berge, 1999).

Review of Literature: Online interaction can be addressed through effective communication and discussion. These can be made available through two modes: synchronous and asynchronous. According to

Steiner (1995), synchronous instruction is when learners and instructors participate in instruction simultaneously and in "real-time." Common synchronous methods include chat sessions and video and audio conferencing. In addition to offering immediate communication, synchronous methods have the advantages of providing a greater sense of presence and generating spontaneity (Inglis, Ling, & Joosten, 1999). However, synchronous methods can be difficult to implement, as they may require more sophisticated end-user equipment and a high-speed Internet connection. Moreover, instructors may find it challenging to schedule convenient times for all learners to participate, due to work and/or family commitments, or learners may be in different time zones.

Asynchronous does not require simultaneous participation. Chute et al. (1999) defined asynchronous as "interaction between two or more people that is time-delayed, that is, separated by minutes, hours, or even days" (p. 219). Examples of asynchronous methods include e-mail and discussion forums. These methods are easy to implement and learners can practice at any time convenient for them. Discussion forums are often incorporated into a course to ensure learner participation (O'Reilly & Newton, 2001) and interaction.

Herring (1996) offered three main research issues that are considered the main distinctive characteristics of online communication or interaction: (1) lack of social cues which refers to anonymity created by less obvious social characteristics such as occupation, educational level, gender and race, (2) generation of social norms of interaction which refers to rules of behaviors created by members of an online community, and (3) unique conversational patterns similar to oral communications in many aspects although it uses written format (i.e., concise use of words, simplifying sentences, and emotional expressions). While Ong (1982) suggests that oral communication is different from written format, Condon & Cech (1996) conclude that computer-based synchronous communication does show similar language patterns of oral communication. However, all of the three distinctive characteristics of online communication can either promote or discourage collaboration, depending on contexts (Spears & Lea, 1992).

In the literature, some researchers showed evidence of the effectiveness of online interaction within Web-based courses (COX, 2004). For example, McDonald (2002) emphasized that online education with its group-based instruction and Computer Communication provides an opportunity for new development and understanding in teaching and learning. A study completed by Devlin and James (2003) in Australia concluded that the impact of multimedia and educational technology could provide some indication of improved student learning and interaction skills.

Some other researchers already have begun to look into various types and methods of Internet-based communication tools such as e-mail, chatting, discussion boards and other methods over the past decade (O'Reilly & Newton, 2001). It has been suggested that these Internet-based communication methods afford and limit people's behaviors in many different ways compared to traditional types of communication (e.g., face to face interaction). As mentioned previously, learner-content interaction promotes critical thinking and reasoning skills, and learner-learner and learner-instructor interactions bring about a shared learning environment (Sringam & Greer, 2002). In general, learner-instructor and learner-learner interactions have been found to be particularly useful for forming friendships, offering advice, empathy and encouragement to continue studying in the learning environment, overcoming isolation and engaging in mutual support with peers (O'Reilly & Newton, 2001).

In light of what's mentioned, online interaction available in Web-based courses has many benefits for education. It promotes critical thinking, reasoning skills, diverse viewpoints, and alternative ways of looking at problems. It is also useful for forming friendships, offering advice, empathy and encouragement to continue studying in the learning environment, overcoming isolation, and engaging in mutual support with peers. However, we may wonder whether achieving a satisfactory level of online interaction is linked to any of the learner's characteristics or experience in using the Internet.

Many studies (Jiang & Shrader, 2001; Koohang, 2004; Koohang & Durante, 2003; Lucy, 1993; Meisel & Marks, 1999; Naert, 1997) investigated the relationships between learners' perceptions toward using online instruction and variables like gender, age, Grade-Point Average (GPA), users' experience in using the Internet, and frequency of accessing the Web-based course. But, to the best of the researchers' knowledge, there is a dearth of research available on the relationship between learners' attitudes toward online interaction and such variables. This is the main reason for conducting this study.

However, gender differences have been reported in the literature as affecting perceptions in general (Hackett, Mirvis, & Sales, 1991). Consequently, gender was included as a matter of understanding if differences of perceptions toward online instruction and online interaction occurred between male and female respondents. Experience with the Internet was included because research has documented the relationship between experience and user acceptance of technology in general (Koohang, 1989). The more experience a user has with technology, the more he or she tends to accept it. Therefore, a user's acceptance may in turn promote learning.

According to Lucy (1993), some significant relationships exist between learners' attitudes towards computers, computer experience, and computer communication. She concluded that positive attitudes towards computers could be predicted by learners' amount of prior experience with computers and that

male learners were more likely to have positive opinions of computers than their female counterparts. A similar result was found by another study done in 1997 by Naert. In the same trend, a number of other studies did not find any relationship between gender and learners' attitudes toward computers (Meisel & Marks, 1999; Koohang & Durante, 2003; Koohang, 2004).

Methodology

Population and Sample: The population of this study was all the undergraduate students enrolled in the Accounting Web-based during the second semester of the academic year 2003-2004. The entire population, which consisted of 500 students, was selected as a sample for the study. Among these, 60 students were excluded because they were used in establishing the validity and reliability of the instrument. The rest of students (440) made the actual sample for the study. A description of the sample at the different levels of the independent variables is displayed in Table 1.

Table 1: Frequency and Percentage of Students by Levels of the Independent Variables (N=440)

Independent Variable (IV)	Levels of IV	N	Percentage
Gender			
	Male	225	51.1
	Female	215	48.9
	Total	440	100
Age			
	Less than 20 years	319	72.5
	20 years and above	121	27.5
	Total	440	100
Years of Experience with the Internet			
	Less than 2 years	256	58.2
	From 2 to 4 years	127	28.9
	Greater than 4 years	57	13.0
	Total	440	100
Grade-Point Average (GPA)			
	Less than 2.5	93	21.1
	From 2.5 to 2.99	139	31.6
	3 or above	208	47.3
	Total	440	100
Frequency of Accessing the Web-based Course			
	Seldom or Never	50	11.4
	Once every two weeks	56	12.7
	Once a week	93	21.1
	Once every two days	116	26.4
	More than once a day	125	28.4
	Total	440	100

Of the 440 students who make up the sample of the study, 225 were males (51.1 percent of the total sample) and 215 (48.9 percent of the total sample) were females. Initially, students' ages varied in four categories: 319 students (72.5 percent) who were less than 20; 111 students (25.2 percent) who were between the ages of 20-22; 8 students (1.8 percent) who were between the ages of 23-25; and only 2 students (0.5 percent) who were over 25. To get more stable results, the last three categories of age were merged into one category that contained 121 students (27.5 percent) who were 20 years of age and older. Students' years of experience with the Internet varied in three categories: 256 students (58.2 percent) with 1-2 years of experience; 127 students (28.9 percent) with 3-4 years of experience; and 57 students (13 percent) with over 4 years of experience. As for students' GPA, it initially varied in 5 categories: 15 students (3.4 percent) whose GPAs were less than 2.00; 78 students (17.7 percent) whose GPAs were between 2.00 and 2.49; 139 students (31.6 percent) whose GPAs were between 2.50 and 2.99; 196 students (44.6 percent) whose GPAs were between 3.00 and 3.69; and 12 students (2.7 percent) whose GPAs were between 3.70 and 4.00. To get more stable results, the first two categories were merged into one category that contained 93 students (21.1 percent) whose GPAs were less than 2.50. Similarly, the last two categories were merged into one category that included 208 students (47.3 percent) whose GPAs were 3.00 or above.

Finally, students' frequency of accessing the web-based course varied in six categories: 16 students (3.6 percent) who never accessed the web-based course; 34 students (7.7 percent) who were rarely accessing the course; 56 students (12.7 percent) who were accessing the course once every two weeks; 93 students (21.1 percent) who were accessing the course once a week; 116 students (26.4 percent) who were accessing the course once every two days; and 125 students (28.4 percent) who were accessing the course more than once a day. Similar to what we did to the age categories, the first two categories of the frequency of accessing the web-based course ("Never" and "Seldom") have been merged into one category that included 50 students (11.4 percent) who rarely or never accessed the web-based course, see Table 1.

The Web-based Course: The present study took place in a Jordanian university that has sought to incorporate Web-based learning into its conventional face-to-face instruction. The project started back to the summer of the year 2003 by an intensive, well prepared workshop on developing Web-based courses. Around 25 highly-motivated instructors from different departments were selected to be trained on various techniques and methods used in designing Web-based courses. The short-term objective of the workshop was to prepare courses that can be taught in a flexible (mixed) mode, which consists of both classroom face-to-face instructions and completely online instructions. Courses designed in this mode move a significant portion of the learning activities from the classroom to the Web. The instructor and the learners have the advantages of real-time exchange in scheduled classes but have the benefit of continuing the discussion and assignments in the spaces between meetings. The workshop resulted in a number of Web-based courses that formed the core of a promising electronic learning project at the Hashemite University. Equipped with these courses, most of the instructors who successfully finished the workshop were well-trained and eager to go through a new experience of teaching.

The Web-based course that was selected for this study was the Accounting Principles (1) course, which was offered by the Department of Accounting at the Hashemite University in the second semester of the academic year 2003-2004. All sections of the course

were taught in the flexible mode by two instructors who participated in the above-mentioned workshop. Blackboard Learning and Community Portal System™, an authoring environment that utilizes asynchronous (Bulletin, e-mail and discussion boards) and synchronous (Chat) communication tools, were used to deliver the Web-based course. Face-to-face lectures of three-class hours per week were supplemented by a variety of Web-based materials including an extensive collection of interactive, collaborative practice materials, an extensive set of PowerPoint slides available as a supplement to the textbook, and extensive files of repeatable practice quizzes. As part of the assessment, students were required to log into Blackboard and complete weekly assignments that were designed to foster students' relationship with the e-course. Daily participation in electronic discussion forums and chat rooms was also required from students.

The Instrument: An instrument was designed to collect information regarding the independent variables (age, gender, GPA, years of experience with the Internet, and frequency of accessing the Web-based course) and the dependent variable (learners' attitudes toward online interaction in the Web-based course). The survey, displayed in Appendix A, consisted of two sections. The first section "General Information" was designed to gather information about the five independent variables. Based on attitude questionnaires used in other studies (Basile & D'Aquila, 2002; Marcheggiani, Davis, & Sander, 1999; Williams & Pury, 2002; Koohang & Durante, 2003; Koohang, 2004), the second section "Attitudes toward Online Interaction in the Course" was developed to measure learners' attitudes toward online interaction in the Accounting Web-based course using twelve items that cover three main areas of online interaction: (1) Learner-to-instructor interaction, (2) Learner-to-learner interaction, and (3) Learner-to-content interaction. Since the concern of this study was the overall online interaction, items of this section were listed without explicit specification for the areas they cover. On a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), students were asked to rate their agreement with the items, which were worded positively. A higher score on these items indicates more favorable attitudes toward online interaction in the Web-based course. For a list of these items, please see Appendix A.

The instrument went through two stages of validity verification. In the first stage, the survey items were submitted to a panel of four instructional technologists from four Jordanian universities. The panel's task was to rate each item for clarity and usefulness in measuring learners' attitudes toward online interaction in the web-based course. Based on the panel's recommendations and suggestions, necessary changes were made to the survey. The second stage began three weeks prior to the end of the semester during which the study was conducted. The survey was administered to a randomly selected sample of 20 students who were enrolled in the web-based course. These students, who were later excluded from the sample used in the study, were asked to rate the survey items for clarity of expression. Based on students' feedback, a final version of the survey was prepared.

The internal consistency of the instrument was determined two weeks prior to the end of the semester using a sample of 40 students (22 females and 18 males) who were studying in the "Accounting Principles (1)" web-based course. This sample of students was also excluded from the sample used in the study itself. The calculated coefficient alpha reliability for the attitudes scale (section two) was .85. This figure suggests that the instrument is suitable to measure learners' attitudes toward online interaction in the web-based course.

In order to collect data on the variables under study, the instrument was handed to students during the last week of the semester.

Data Analysis: To answer the research questions, the following statistical analyses were utilized:

- Descriptive analysis to compute frequencies, means, percentages, and standard deviations for variables and items of the attitudes scale.
- Five-way Analysis of Variance (with no interaction) to determine whether there are any statistically significant differences in attitudes toward online interaction due to gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course.

Using data collected by the instrument, the researchers employed the SPSS statistical package to carry out the above analyses.

Results of the Study

Descriptive Analysis: Table 2 shows the means and standard deviations of learners' attitudes toward online interaction at the different levels of the five independent variables (gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course). According to the table, males and females have close mean values of attitudes (3.86, 3.90, respectively). Similarly, the two categories (levels) of age seem to show close mean values of attitudes. As for the categories of years of experience with the Internet, one can notice that there is a relatively slight increase in the mean values of attitudes as we move from a category with a less number of years of experience toward a category with a higher number of years of experience. As for the three categories of GPA, the table shows that the "From 2.5 to 2.99" category has a lower mean value of attitudes than the other two categories that relatively seem to have close mean values. In regard to the frequency of accessing the Web-based course, one can notice that as we move from a category with a less frequency of access into a category with a higher frequency of access, the mean values of learners' attitudes toward online interaction tend to increase accordingly.

Table 2: Means and Standard Deviations of Learners' Attitudes by Levels of Independent Variables (N=440)

Independent Variable (IV)	Levels of IV	N	Mean	SD
Gender				
	Male	225	3.86	.790
	Female	215	3.90	.767
	Total	440	3.88	.779
Age				
	Less than 20 years	319	3.89	.765
	20 years and above	121	3.84	.816
	Total	440	3.88	.779
Years of Experience with the Internet				
	Less than 2 years	256	3.86	.772
	From 2 to 4 years	127	3.90	.793
	Greater than 4 years	57	3.94	.781
	Total	440	3.88	.779
Grade-Point Average (GPA)				
	Less than 2.5	93	3.92	.778
	From 2.5 to 2.99	139	3.81	.773
	3 or above	208	3.90	.784
	Total	440	3.88	.779
Frequency of Accessing the Web-based Course				
	Seldom or Never	50	3.12	.726
	Once every two weeks	56	3.86	.892
	Once a week	93	3.86	.852
	Once every two days	116	4.02	.717
	More than once a day	125	4.07	.754
	Total	440	3.88	.779

Results Related to Research Question (1)

To answer the first research question regarding attitudes toward online interaction, learners in the Web-based course were asked to rate their response to twelve items. Table 3 displays the mean values and standard deviations for the twelve items of the attitudes scale. It is interesting to notice that all items had mean values greater than 3.70, indicating that overall learners tended to agree with all items. While items 3 and 11 had the highest mean values (4.08 and 4.06, respectively), items 8 and 7 had the lowest means (3.71 and 3.75, respectively). The rest of the items had mean values between 3.78 and 3.98. As shown in the table, the total mean score for all items was 3.88, indicating favorable attitudes toward online interaction in the Web-based course.

Frequencies and percentages of learners in the Web-based course reporting their responses to the twelve items of the attitudes toward online interaction are reported in Table 4. Eighty-four percent of learners strongly agreed or agreed that "they were able to direct their questions and concerns to the instructor online and at any convenient time." Around eighty-five percent of learners strongly agreed or agreed that "online interaction with the instructor helped them to ask questions they might not have asked otherwise."

Table 3: Means and Standard Deviations for the Attitudes Items (N=440)

	Item	N	Mean	SD
1.	I usually receive online feedback from the instructor about questions and concerns I post online.	440	3.84	.791
2.	I can direct my questions and concerns to the instructor online at any convenient time.	440	3.98	.760
3.	Online interaction with the instructor helped me to ask questions I might not have asked otherwise.	440	4.08	.783
4.	Through online interaction with other students, I can share ideas and concerns regarding this course.	440	3.90	.795
5.	Online interaction with others encourages me to learn more.	440	3.93	.753
6.	Online interaction with students and instructor helped me to learn the course material.	440	3.83	.771
7.	My interaction with the online course material helped me to understand what I learn.	440	3.75	.789
8.	Online interaction with students and instructor stimulates me to think about the course material in new ways.	440	3.71	.731
9.	Through online interaction with students and instructor, I can get help on topics that need more explanation to understand.	440	3.85	.775
10.	I feel the online interaction that takes place in this course will be reflected positively on my final grade in the course.	440	3.82	.826
11.	I feel the online interaction in this course will make a new experience for me that I have not gone through before.	440	4.06	.705
12.	I think my online interaction in this course has been more than any other face-to-face interactions I've had in other courses	440	3.78	.865
	Average	**440**	**3.88**	**.779**

5=Strongly Agree, 4=Agree, 3=Neither Agree nor Disagree, 2=Disagree, 1=Strongly Disagree

Table 4: Frequencies and Percentages of Learners' Attitudes

	SA		A		N		D		SD	
	f	%	f	%	f	%	f	%	f	%
Item#1	108	24.5	216	49.1	95	21.6	21	4.8	0	0
Item#2	123	28.0	246	55.9	50	11.4	20	4.5	1	.2
Item#3	157	35.7	219	49.8	50	11.4	12	2.7	2	.5
Item#4	116	26.4	240	54.5	70	15.9	13	3.0	1	.2
Item#5	108	24.5	254	57.7	70	15.9	8	1.8	0	0
Item#6	96	21.8	241	54.8	87	19.8	16	3.6	0	0
Item#7	95	21.6	243	55.2	66	15.0	36	8.2	0	0
Item#8	82	18.6	263	59.8	76	17.3	19	4.3	0	0
Item#9	105	23.9	248	56.4	64	14.5	23	5.2	0	0
Item#10	123	28.0	227	51.6	16	13.9	29	6.6	0	0
Item#11	142	32.3	235	53.4	51	11.6	12	2.7	0	0
Item#12	114	25.9	200	45.5	73	16.6	50	11.4	3	.7

SA=Strongly Agree, A=Agree, N=Neither Agree nor Disagree, D=Disagree, SD=Strongly Disagree

It is worth to mention that eighty-two percent of learners strongly agreed or agreed that "online interaction with others encouraged them to learn more." Similarly, eighty percent of learners strongly agreed or agreed that "through online interaction with students and instructor, they were able to get help on topics that needed more explanation to understand." Around eighty-five percent of the learners strongly agreed or agreed that "online interaction with the instructor helped them to ask questions they might not have asked otherwise." Eighty-four percent of the learners strongly agreed or agreed that "they were able to direct their questions and concerns to the instructor online and at any convenient time." Eighty-one percent of learners strongly agreed or agreed that "through online interaction with other students, they were able to share ideas and concerns regarding this course."

It is important to state that around eighty percent of the learners strongly agreed or agreed that "they felt the online interaction that took place in the course was going to be reflected on their final grades in the course." A close percentage of the learners (78%) strongly agreed or agreed that "online interaction with students and instructor stimulated them to think about the course material in new ways." A large percentage of the learners (around 86%) strongly agreed or agreed on the statement "I feel the online interaction in this course will make a new experience for me that I have not gone through before."

As for strong disagreement among learners, one can notice from Table 4 that relatively zero or close to zero percentages of learners strongly disagreed with all items. Percentages of disagreement among learners on the different items of the attitudes scale varied between two to eleven. In fact, the largest percentage of disagreement among the learners (11%) was with the item "I think my online interaction in this course has been more than any other face-to-face interactions I have had in other courses." Percentages of the learners who neither agreed nor disagreed with the different items of the attitudes scale varied between eleven and twenty-two.

Results Related to Research Question (2)

To answer the second research question regarding whether there are any significant differences in learners' attitudes toward online interaction that are due to gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course, a five-way analysis of variance (with no interaction) was conducted. In this analysis, the dependent variable was learners' attitudes toward online interaction. Gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course were used as independent variables. Each of gender and age had two categories (levels). GPA and years of experience with the Internet had the same number of categories (3 categories). The frequency of accessing the Web-based course had five categories. The results of the 2x2x3x3x5 ANOVA (with no interaction) are displayed in Table 5.

Inspection of Table 5 indicates that only one independent variable, frequency of accessing the Web-based course, contains a significant difference in learners' attitudes toward online interaction, $F(4,435)= 59.737$, $p<.001$. None of the rest of the independent variables (gender, age, GPA, and years of experience with the Internet) has proved to contain any significant differences in learners' attitudes (at .05 level of significance).

Table 5: Five-Way ANOVA of Learners' Attitudes (No Interaction)

Source of Variation	SS	df	MS	F	Sig. F
Gender	.029	1	.029	.011	.916
Age	.303	1	.303	2.035	.154
Grade-Point Average (GPA)	.460	2	.230	1.543	.215
Yrs of Experience with the Internet	.804	2	.402	2.694	.069
Frequency of Accessing the Course	35.642	4	8.910	59.737	.000*
Explained	37.239	10	3.724	24.966	.000
Residual	63.990	429	.149		
Total	101.229	439			

*Significant at .001 level of significance

Because a significant difference was found in the five-way ANOVA, follow-up tests were conducted to evaluate pairwise differences among the means of the five categories (or levels) of the frequency of accessing the Web-based course variable. Since the test of homogeneity of variances was significant, $F(4,435)= 8.101$, $p<.001$, homogenous variances were not assumed and post hoc comparisons were conducted using the Dunnett's C tests, a test that does not assume equal variances. The results of these tests, as well as the mean differences between learners' attitudes toward online interaction for the five categories, are reported in Table 6.

Table 6: Mean Differences between Learners' Attitudes among Categories (Levels) of Frequency of Accessing the Web-based Course (I-J)

Category (I)	SN	TW	OW (J)	TD	OD
Seldom or Never (**SN**)	---				
Once every two weeks (**TW**)	.74*	---			
Once a week (**OW**)	.74*	0	---		
Once every two days (**TD**)	.90*	.16*	.16*	---	
More than once a day (**OD**)	.95*	.21*	.21*	.05	---

*The mean difference is significant at the .05 level.

Based on the data presented in Table 6, one can say that there were no significant differences in the means between TW and OW, and between TD and OD. However, there were significant differences in the means between SN and each of TW, OW, TD, and OD. Moreover, there were significant differences in the means between TW and each of TD and OD. Almost the same differences in the means were found between OW and each of TD and OD.

Discussion and Conclusions

In spite of current researchers' interest in the study of online interaction in Web-based courses, there is a dearth of research available on the relationship between learners' attitudes toward online interaction and learners' demographic variables (such as gender, age, GPA, etc.). This study sought to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' perceptions, the study attempted to find whether online interaction promotes learning among learners. The study also gave attention to the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course to test whether these variables are significant factors in learners' attitudes toward online interaction in the Web-based course.

The descriptive results of this study indicated that overall learners positively perceived that online interaction in the Web-based course promoted learning among them. This valuable finding, which aligns with what Berge (1999) and Jaffe (1997) found, was exemplified by the result that above seventy-seven percent of the learners strongly agreed or agreed on the following points:

- Online interaction with others encouraged learners to learn more.
- Learners were able to direct their questions and concerns to the instructor online and at any convenient time.
- Through online interaction with students and instructor, learners were able to get help on topics that needed more explanation to understand.
- Online interaction with the instructor helped learners to ask questions they might not have asked otherwise.
- Through online interaction with other students, learners were able to share ideas and concerns regarding the course.
- Learners felt that online interaction in the course was going to be reflected on their final grades in the course.
- Online interaction with students and instructor stimulated learners to think about the course material in new ways.

Based on this finding, one can conclude that in order to promote learning in a Web-based course, students need to be encouraged to participate in online activities that enable interaction to occur. For example, students can participate in discussion boards, email, asynchronous conferencing, chatting, and listservs.

Another finding of the study was that gender, age, GPA, and years of experience with the Internet were insignificant factors in learners' attitudes toward online interaction in the Web-based course. Except for the years of experience with the Internet, this finding goes along with the findings of a number of relatively recent studies (Meisel & Marks, 1999; Koohang & Durante, 2003; Koohang, 2004). However, in regard to gender and years of experience with the Internet, this finding does not agree with the findings of Lucy's (1993) study perhaps because of the differences in the instruments employed in measuring attitudes. Based on this finding, the following conclusions can be drawn:

- Males and females in the web-based course equally perceived that online interaction promoted learning. This implies that the "Accounting Principles (1)" web-based course implemented by the Department of Accounting at the Hashemite University did not reflect any gender bias. Therefore, the structure of this course can be helpful in designing similar web-based courses.
- Learners of different ages equally perceived that online interaction promoted learning. However, since around seventy-two percent of the learners who participated in this study were less than 20 years of age, the influence of age might not have been tested adequately. Therefore, further examination of this variable is needed and is recommended for future studies.
- Learners with different GPAs equally perceived that online interaction promoted learning. Knowing that almost one half of the learners in this study had GPAs less than 3.00, it is of an interest for administrators and policy-makers to realize that online interaction in the web-based course promoted the learning of learners regardless of their GPAs.
- Learners with different numbers of years of experience with the Internet equally perceived that online interaction promoted learning. Surprisingly, this conclusion did not meet the authors' expectation. One reason for such a result could be that around fifty-eight percent of learners participating in this course had less than two years of experience with the Internet. Therefore, to study the influence of such a variable more adequately, we believe that further examination is needed.

This study also found that learners' frequency of accessing the Web-based course was a significant factor in learners' attitudes toward online interaction. In other words, depending on their categories of accessing the web-based course, learners differently perceived that online interaction promoted learning. To better understand the influence of these categories, post hoc comparisons were conducted. The results of these comparisons helped in forming the following conclusions:

- Compared to learners in the other categories, learners who "seldom" or "never" accessed the web-based course had the lowest level of attitudes toward online interaction. A possible reason for this could be that these learners did not benefit much from online interaction. However, since learners in this category made for around eleven percent of the whole sample, it is important to realize that the success of a web-based course may depend upon increased frequency of accessing that course.

- Learners who used to access the web-based course once every two weeks and those who used to access the course once a week equally perceived that online interaction promoted learning. One reason for such a result could be that discussion forums were due every two weeks. Therefore, it is likely that this gave some learners the chance to wait until the second week of each forum to access the course. It should be mentioned that learners in both categories had higher positive attitudes than those of the learners in the previous "Seldom or Never" category.
- Learners who used to access the web-based course once every two days and those who used to access the course more than once a day equally perceived that online interaction promoted learning. One possible reason for such a result could be that the class used to meet face-to-face every Sunday, Tuesday, and Thursday. Therefore, it is possible that some learners preferred to access the course on the day when they had no class. However, learners in both categories had the highest positive attitudes among all categories.

In general, learners who had accessed the Web-based course more frequently indicated significantly higher positive attitudes toward online interaction.

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Appendix A
The Survey Instrument

In this survey, there are two sections: (1) General Information; and (2) Attitudes toward Online Interaction in the Course.

SECTION (1): General Information

Please respond to the following items by circling the appropriate number:

1. **Your gender:**

(1) Male (2) Female

2. **Your age:**

(1) Less than 20 years (2) From 20 to 22 years
(3) From 23 to 25 years (4) Greater than 25 years

3. **Your Grade-Point Average (GPA):**

(1) Less than 2.00 (2) From 2.00 to 2.49
(3) From 2.50 to 2.99 (4) From 3.00 to 3.69
(5) From 3.70 to 4.00

4. **Your years of experience with the Internet:**

(1) Less than 2 years (2) From 2 to 4 years
(3) Greater than 4 years

5. **How frequently you accessed the web-based course:**

(1) Never (2) Seldom
(3) Once every two weeks (4) Once a week
(5) Once every two days (6) More than once a day

SECTION (2): Attitudes toward Online Interaction in the Course

Using the following scale, please indicate your agreement with each of the items that follow by circling the number that best describes your belief about online interaction in the Accounting Web-based course:

Scale:

5=Strongly Agree, 4=Agree, 3=Neither Agree nor Disagree, 2=Disagree, 1=Strongly Disagree

1.	I usually receive online feedback from the instructor about questions and concerns I post online.	5	4	3	2	1
2.	I can direct my questions and concerns to the instructor online at any convenient time.	5	4	3	2	1
3.	Online interaction with the instructor helped me to ask questions I might not have asked otherwise.	5	4	3	2	1
4.	Through online interaction with other students, I can share ideas and concerns regarding this course.	5	4	3	2	1
5.	Online interaction with others encourages me to learn more.	5	4	3	2	1
6.	Online interaction with students and instructor helped me to learn the course material.	5	4	3	2	1
7.	My interaction with the online course material helped me to understand what I learn.	5	4	3	2	1
8.	Online interaction with students and instructor stimulates me to think about the course material in new ways.	5	4	3	2	1
9.	Through online interaction with students and instructor, I can get help on topics that need more explanation to understand.	5	4	3	2	1
10.	I feel the online interaction that takes place in this course will be reflected positively on my final grade in the course.	5	4	3	2	1
11.	I feel the online interaction in this course will make a new experience for me that I have not gone through before.	5	4	3	2	1
12.	I think my online interaction in this course has been more than any other face-to-face interactions I have had in other courses.	5	4	3	2	1

Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 167-177

Student-teachers' ICT Skills and their Use during Placement Related to Pre-Service Teacher Education Program at Yarmouk University in Jordan

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Received Date: Dece. 1, 2004 **Accepted Date: Jun. 1, 2005**

***Abstract**: Identifying Pre-service teachers' Information and Communication Technology (ICT) skills and the degree to which they apply these skills in their teaching is a vital issue both to inform future planning and to implement new ICT in educational systems in Jordan and worldwide. This study investigates ICT skills of student-teachers at Yarmouk University in Jordan and their degree of ICT use in practice schools during the first semester of 2003/2004 academic year. Data were obtained via questionnaires with a random sample of the (90) student-teachers and interviews with a random sample of (40) student-teachers. In addition, interviews with all teacher trainers (22) at Yarmouk University were conducted to further triangulate findings from student-teachers' questionnaires and interviews. Regarding ICT skills the results showed that student-teachers possessed low to moderate ICT skill levels. With regard to the degree of ICT use at practice schools, results from the questionnaires showed congruency between student-teachers' ICT skills level and the degree to which they apply these skills. However, results from the interviews indicated lack of ICT skills used by student-teachers during their teaching practice. Lack of adequate training at the university, lack of access to ICT resources, teacher-trainers' inability to model the use of ICT in their teaching and inability to incorporate ICT in teaching were among the factors that affected student-teachers' ICT use at practice schools.(**Keywords**: Information and Communications Technolog Skills, Teacher Education).*

مدى امتلاك طلبة التربية العملية في جامعة اليرموك لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها خلال فترة التطبيق العملي الخاصة ببرنامج إعدادهم معلمين قبل الخدمة

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ملخص: إن الكشف عن مدى امتلاك طلبة التربية العملية لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها في المدارس المتعاونة قبل الخدمة أمر ضروري من أجل التخطيط المدروس لعمليات إدخال تكنولوجيا المعلومات والاتصالات إلى النظم التربوية في الأردن وعلى المستوى العالمي. لذلك هدفت هذه الدراسة إلى الكشف عن مدى امتلاك طلبة التربية العملية في جامعة اليرموك لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها في أثناء التطبيق العملي في المدارس المتعاونة وذلك خلال الفصل الأول من العام الدراسي 2004/2003 . تم جمع البيانات بوساطة استبانة بناها الباحثان وتم تطبيقها على عينة عشوائية من طلبة التربية العملية تكونت من (90) طالبا وطالبة. كما تم إجراء مقابلات مع عينة عشوائية أخرى تكونت من 40 طالبا وطالبة. وأجريت مقابلات مع كل مشرفي التربية العملية في جامعة اليرموك والبالغ عددهم 22 مشرفا. أظهرت نتائج الدراسة المنبثقة عن الاستبانة أن مدى امتلاك طلبة التربية العملية لمهارات تكنولوجيا المعلومات والاتصالات تراوح بين ضعيف ومتوسط، وفيما يتعلق بمدى استخدامهم لهذه المهارات في التطبيق فقد دلت النتائج على أن هناك انسجاما بين مدى امتلاكهم لهذه المهارات وبين درجة استخدامهم لها في مدارس التطبيق. ودلت النتائج التي تم الحصول عليها من خلال المقابلات أن هناك قصورا كبيرا فيما يتعلق بمدى استخدامهم لمهارات تكنولوجيا المعلومات والاتصالات في أثناء فترة التطبيق العملي. وكان نقص التدريب المناسب في الجامعة، وصعوبة الوصول إلى مصادر تكنولوجيا المعلومات والاتصالات، وعدم استخدام مشرفي التربية العملية لهذه المهارات في التدريس و عدم قدرة طلبة التربية العملية أنفسهم على دمج هذه المهارات أثناء التطبيق، من أبرز العوامل التي أثرت في درجة استخدامهم لهذه المهارات (**الكلمات المفتاحية**: اعداد المعلمين، مهارات تكنولوجيا والاتصالات).

Introduction:

The use of ICT has caused substantial changes for teaching and learning. It is bringing about opportunities for educators as it can provide powerful support for educational innovations. Nonetheless, getting to grips with ICT skills and its related applications in real teaching-learning situations creates formidable challenges for teachers and teacher educators. They need not only to learn the skills of using ICT, but also to learn how to design innovative instruction through an integration of ICT with curriculum and teaching experiences at schools. Reasonably, for undergraduate students who are prospective school teachers, they should be well prepared to use ICT in education.

Studies conducted in the field of pre-service teacher education unveiled numerous weaknesses on the part of teachers graduating from teacher education programs at universities with regard to the knowledge of the ways of ICT use in their professional practice (Gibson, 2002; Cuckle et al, 2000; Murphy and Greenwood, 1998). Student-teachers who are being prepared to enter the teaching profession, upon fulfilling the requirements of the teacher preparation program at Yarmouk University, are required to possess basic computer skills as well as how to apply these skills in various teaching-learning situations. They need to see the importance of planning, designing and implementing computer-based instructions in their classroom when they finally become teachers. The Jordanian Ministry of Education (MOE) stipulates teachers are required to have considerable knowledge and teaching ability in a full range of ICT skills within their specialist subjects; they

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should be able to demonstrate understanding and classroom use of ICT and need to experience its use in school (MOE, 1988; MOE, 2003). These MOE stipulations have been recently accentuated in all the documents presented to Jordan-UK ICT in education conference (MOE, 2004).

In considering these requirements, it was decided to assess student-teachers' ICT skills and the degree to which student-teachers use these skills in their teaching practice at school. In addition, this study will attempt to identify factors that inhibit the use of ICT at schools and the university. To the best of the researchers' knowledge, there is no prior study that investigated student-teachers' ICT skills and the degree to which they apply these skills in their teaching in Jordan. Therefore, this research will contribute to the body of the literature in Jordan and other countries with regard to the use of ICT in education. It will also assist MOE and the teacher education institutions to make informed decisions regarding the use of ICT in education. More effective use and improved outcomes are dependent on an increased understanding of the training needs that contribute to student-teachers' development. It is timely, therefore, to examine student-teachers' current stage of development and the needs which they themselves express in relation to moving forward with ICT.

Objectives of the Study: The researchers attempted to accomplish the following objectives:

1- Assess student-teachers' ICT level of competence.
2- Assess student-teachers' degree of ICT use during their teaching practise at school.
3- Identify factors that student-teachers and their trainers believe to be the greatest barriers to implementing ICT in the Jordanian schools.

Related Literature: Information and Communications Technologies (ICT) has great potential to aid teachers to adapt to their new role as the facilitators of the learning process (Al-Far, 2003; Altawalbeh, 2003; Dede, 1997). For instance, teachers' inquiry can be facilitated with the help of computers as it provides access to vast amounts of information. Through the use of E-mail, user groups, and other online forms student-teachers will have the opportunity to communicate and share their experiences with a much wider range of colleagues and experts in their fields of specialisms. The World Wide Web can facilitate teachers' access to digital libraries and vast amounts of information in printed, visual and video form. Video conferencing offer the teachers the opportunity to observe other teachers in different countries as they implement similar curriculum areas and learn from their expertise (Gibson, 2002). Nonetheless, the use of ICT cannot be fully effective unless teachers receive adequate training and support (Al-Far, 2002; Salameh & AbuRaya, 2002; Altawalbeh, 2003; Resta, et al, 2002). Their skills and competencies should be continuously updated to keep current with the most recent innovations in this area so they can transfer these competencies to students (Resta, et al, 2002 ; Reid, 2000). To enable teachers to make full use of ICT, pre-and in-service teacher training institutions should undertake a more active role with regard to teacher education and training that goes beyond the development of basic ICT literacy skills to educationally oriented training on ICT. This entails that teacher educators and trainers should model the appropriate use of ICT in the delivery of the curriculum of teacher education and training programmes inasmuch as teachers are required to incorporate ICT into their own teaching at schools. Matthew et al (2002) examined the benefits of one-on-one coaching for teacher educators by technology coaches as they worked together to learn to use technology. Results from the study indicated that coaches as well as teacher educators benefited from the relationship and both groups increased their technology competency.

The identification of teachers' information technology skills is a prerequisite for developing the existing pre-service teacher education program and designing future professional development training for in-service teachers.

Studies conducted in the field of pre-service teacher education unveiled numerous weaknesses on the part of teachers graduating from teacher education programs at universities with regard to the knowledge of the ways of ICT use in their professional practice (Gibson, 2002; Cuckle et al, 2000; Murphy and Greenwood, 1998). Watson (1997) investigated pre-service teachers' views on their information technology education. The results indicated that many student-teachers were inadequately prepared for teaching ICT in schools and had low self-ratings of competency and negative feelings about it. Cuckle et al (2000) surveyed the years' cohort of 427 student-teachers in 63 partnership secondary schools in the UK by means of two self-rating checklist questionnaires. The results showed that much of the student-teachers' ICT experience had been gained during their undergraduate studies or at home. They also had considerable enthusiasm for learning more ICT skills and using them in their future careers as teachers. The researchers also found that students were not always able to transfer their ICT skills to use in the classroom.

Collaboration between schools and universities is a crucial factor for successful implementation of pre-service teacher education programmes (Resta et al, 2002). Such collaboration provides an opportunity to pre-service teachers to interconnect theory with practice. Asan (2002) examined benefits of a collaborative work between the Faculty of Education at Karadeniz Technical University and basic education schools in Turkey. Pre-service teachers were assigned to complete a computer project, which was intended for use to support classroom lessons. As a result of this collaborative work, pre-service teachers and classroom teachers practiced the development of instructional materials and the integrating of technology in subject content areas. In addition, they became more comfortable with the technology and developed greater

proficiency in their computer use. In line with this argument, McDougall and Squires (1997) suggested that teachers learning alongside students might provide a fruitful means of teachers' professional development, within a framework of curricular changes and integration of IT into and across existing curricula.

Student-teachers who are being prepared to become teachers should realise the efficacy and see benefits of ICT with regard to the enhancement of teaching/learning situations. Russell et al (2000) reviewed results from an Australian study, which was conducted to establish baseline information about teachers' experience and skills in information technology. Results from the study revealed that although there is a general agreement among teachers regarding the importance of ICT for their students and for their own professional development, significant areas of deficit were identified. Teachers saw themselves as competent with basic computer skills, but were less confident with activities requiring advanced use of computers. In addition, teachers reported low levels of confidence in their knowledge of information technology developments.

Computer literacy is an important key factor that can assist student-teachers to utilise the course activities successfully during pre-service teacher education programmes. In line with this argument**,** Resta et al (2002) contend that for education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Baki (2000) analysed an undergraduate course related to a teacher education programme. The researcher gathered data through questionnaires and students' writings about the course activities. Findings indicated that students who felt prepared, made the link between computer-based mathematical activities and school mathematics, and had more experience of using instructional software during the course than others. Similarly, a low level of competence among pre-service teachers in Canada was identified in a study conducted to assess prospective student-teachers' performance regarding the use of the Internet in teaching (Hewitt et al, 2002). The results indicated that pre-service teachers had little previous experience facilitating student-led investigations, and often attempted to direct student research. Prospective English teachers held optimistic views regarding ICT use in education. However, they expressed frustration due to the lack of opportunity to make full use of it (Goodwyn, et al, 1997).

Lack of ICT related facilities and opportunities that allow student-teachers to make full use of ICT can have serious negative consequences on their competencies. Murphy and Greenwood (1998) identified three main obstacles that limited the successful implementation of pre-service teacher education programmes – student access to computers, the ICT policy adopted by initial teacher training providers and the lack of encouragement for students to use ICT in teaching practice.

The learning environment in which ICT is used requires certain facilities and resources that should be made available for effective delivery of teacher education programmes. Facilities include basic infrastructure such as electrical wiring, Internet access, lighting, air-conditioning, and space, in addition to various types of technological devices from computers with peripherals, video equipment, and specialised tools like digital microscopes. Further resources including various types of software as well as traditional tools like books, videotapes, and audiotapes, should be made available for student-teachers (Resta et al, 2002; Gibson, 2002).

ICT is an ever changing area that requires continuous updating of related equipment and tools in addition to continuous updating of teachers' ICT-related skills.

Methodology: This study utilised two types of data collection instruments, questionnaires and interviews.

Questionnaires: In this study the researchers surveyed the semester cohort of 237 students participating in the practicum teaching programme at Yarmouk University. A random sample of 90 (38%) student-teachers was given a self–rating questionnaire containing two checklists towards the end of their teaching experience in schools during the academic year 2003-2004. All subject specialties (i.e Maths, Science, English, Arabic, Islamic Education, Social Studies and class teachers (covering all subject areas) were covered. Student-teachers were asked about the following :-

1. Gender
2. Subject specialty.
3. Type of school (i.e. private or public).
4. Self- assessment of overall competence and in a range of ICT applications (e.g. word processing, databases, spreadsheets, CD-ROMs, the Internet, etc).
5. The degree of use of ICT during their teaching practice at schools.

Two open-ended questions were placed at the end of the questionnaire requiring student-teachers to indicate any ICT related skill/skills they possessed that was/were not included in the checklist and to provide their personal opinion regarding motivation and enthusiasm to use ICT related skills in teaching.

The questionnaire used in this study was developed by the researchers based on their experience in the field of ICT in education. A panel of experts was used to establish content validity for the instrument. Members of the panel were selected because of their experience in ICT in education, expertise in instrument development, expertise in the use of statistics, and expertise in translating the English language into the Arabic language and vice versa. The panel examined all statements for appropriate language and word usage and made suggestions about item terminology to enhance clarity and brevity. To ensure the internal consistency for the questionnaire, the Cronbach's Alpha coefficient formula was used, and the coefficient was found to be 0.90. To analyse the data gathered from student-teachers, mean scores and standard deviations were

computed for responses to each item on the questionnaire. The survey took the form of a self-rating questionnaire with tick boxes requiring a response on a scale from 1-3 for both the level of competence and the degree of ICT use in schools. Such a self-rating scale is widely used in evaluative studies throughout the social sciences.

Interviews:-

The data gathered through the survey questionnaire were complemented by means of follow-up semi-structured interviews with student-teachers. A random sample of 40 student-teachers was drawn from across the various subject specialisms.

Following student interviews, all teacher trainers were interviewed to further explore issues highlighted by students and to triangulate the findings of the questionnaire and student-teachers' interviews.

Data Analysis

The responses which required a tick response were coded numerically and entered on an SPSS database.

The t-test was used to determine statistically significant differences attributed to 'gender', 'speciality' and 'type of school' variables on the responses of the participants. For qualitative data analysis there was no single ideal approach to analysing qualitative data, (McMillan and Schaumacher, 1997) so the researchers contrived to find a suitable pattern for the analysis within the general framework of approaches suggested in the research books and guided by the research objectives of the present study. With regard to the semi-structured interviews they were first tape recorded and then transcribed for analysis. The reliability of transcripts was examined by the interviewees themselves who ascertained that they were consistent with their views. None of the interviewees reported inconsistency between his views and the content of the transcript. The initial analysis of the interview data suggested several categories which were used as basis for the interpretation of the data. In addition, it was possible to provide frequencies and percentages for many of the issues in the identified categories (Patton, 2002 and Cohen et al, 2000).

Results

With regard to student-teachers' level of competence in ICT, the group of respondents was segmented into three categories: low, moderate and high. Student-teachers who possessed a low level of competence in ICT were those whose average mean of responses on ICT skills is less than 1.5. When the average mean of responses of the participants fell between 1.5 and 2.5, student-teachers were considered as having moderate ability with regard to ICT skills. Student-teachers were considered as having a high level of competence where those whose average mean of their responses was more than 2.5.

The results indicated that the average mean of responses did not fall in the high level of competence category for all the ICT skills in the questionnaire. Table (1) lists the ICT skills where student-teachers felt they possessed moderate ability in terms of the means and standard deviations.

Table 1: Means and standard deviations of the ICT skills which student-teachers felt they moderately possessed ranked in a descending order

No.	Item (ICT Skills)	Ability Level	
		M	SD
1	Use of various computer software programs	2.00	0.64
2	Loading software programs into computers	1.64	0.68
3	Proper use of ICT related terminology in teaching subject specialty	1.68	0.67
5	Knowledge of ICT use in the development of the local society	1.76	0.64
6	Knowledge of computers and their peripheral devices (printer, scanner, …)	1.92	0.74
11	Use of word processing software	2.00	0.70
12	Use of computers to create data bases	1.79	0.71
14	Use of E-Mail	1.96	0.86
15	Use of the Internet as a teaching learning resource	2.07	0.70
16	Use of computers to create electronic slides	2.01	0.79
17	Use of computers to promote professional productivity	1.76	0.71
18	Use of the Internet to promote professional productivity	2.09	0.76
19	Utilization of audio and video conferencing to promote professional productivity	1.56	0.66
20	Use of computers to enhance teaching-learning process	1.90	0.70
21	Use of computer peripheral devices (scanners, printers, data shows, etc.) to enhance teaching learning process	2.07	0.78
22	Utilization of electronic audio and video conferencing to enhance teaching learning process	1.71	0.62
23	Proper use of ICT related devices and programs in various teaching learning situations	1.91	0.65
24	Adherence to the legal standards pertaining to the use of ICT (especially the Internet) in teaching	1.80	0.72
25	Use of ICT to promote the idea of life long learning	2.14	0.74
26	Evaluation of instructional software programs	1.66	0.69
27	Implementing instructional activities derived from research and studies found on the Internet	1.71	0.69
28	Use of ICT related resources to reinforce instructional activities delivered to large groups	1.96	0.72

No.	Item (ICT Skills)	Ability Level	
		M	SD
29	Use of ICT related resources to reinforce instructional activities delivered to small groups	1.79	0.69
30	Use of ICT related resources to assess students' academic achievement	1.81	0.73
31	Prior planning for ICT use in various teaching learning situations	2.07	0.73

Student-teachers possessed a low level of ability in the ICT competences shown in (Table 2).

Table 2: Means and standard deviations of the ICT skills which student-teachers felt they possessed to a low degree ranked in a descending order.

No	item	Ability level	
		Mean	S.D.
4	Knowledge of the use of ICT for teaching practical activities	1.49	0.60
7	Making simple connections and installing computers and their peripheral devices	1.47	0.66
8	Use of scanners to make presentations	1.39	0.53
9	Use of digital cameras to make presentations	1.20	0.43
10	Use of ICT to assess student academic achievement	1.43	0.56
13	Use of computers to make spread sheets	1.49	0.66
17	Use of computers to promote professional productivity	1.46	0.60

To determine if the independent variables affected the participants' responses, the t-test was conducted at the 0.05 level of significance to identify if any statistically significant differences existed between male and female respondents. The results showed no effect that could be attributed to the independent variables of gender, specialty and school type, as shown in Table (3) below.

Table (3): *table description table description table description table description table description table description table description table description table description.*

		N	Mean	SD	t	df	Sig. (2-tailed)
GENDER	Male	20	1.69	0.38	-1.332	88	0.186
	Female	70	1.81	0.34			
SPECIALTY	Class teacher	31	1.75	0.38	-0.577	88	0.566
	Field teacher	59	1.80	0.3426			
SCHOOL TYPE	Public	78	1.76	0.33	-1.294	88	0.199
	Private	12	1.90	0.45			

With regard to student-teachers' ICT use during placement the participants' responses were categorized into three categories: high degree, moderate degree, and low degree of use. This categorization was based on the average mean of responses on each ICT competency in the questionnaire. Where the average of responses fell below 1.5, student-teachers were considered low users of ICT skills, whereas with the average mean of responses between 1.5 and 2.5, the student-teachers were considered moderate users of ICT competency in their practice. Where the average mean of responses is greater than 2.5, student-teachers were considered high users of ICT skills in their teaching practice. The results indicated that student-teachers did not integrate any of the ICT skills listed to a high degree. However, they moderately used the ICT competencies shown in (Table 4) below.

Table 4: Means and standard deviations of the ICT skills which student-teachers moderately used during their teaching practice ranked in a descending order.

No	Item (ICT Skills)	Degree of use	
		M	SD
1	Use of various computer software programs	1.82	0.68
2	Loading software programs into computers	1.57	0.65
3	Proper use of ICT related terminology in teaching subject specialty	1.52	0.64
5	Knowledge of ICT use in the development of the local society	1.62	0.59
6	Knowledge of computers and their peripheral devices (printer, scanner, …)	1.77	0.74
11	Use of word processing software	1.79	0.68
12	Use of computers to create data bases	1.58	0.70
14	Use of E-Mail	1.78	0.83
15	Use of the Internet as a teaching learning resource	1.96	0.75
16	Use of computers to create electronic slides	1.71	0.75
18	Use of the Internet to promote professional productivity	1.88	0.78
20	Use of computers to enhance teaching-learning process	1.58	0.64
21	Use of computer peripheral devices (scanners, printers, data shows, etc.) to enhance teaching learning process	1.90	0.77
22	Utilization of electronic audio and video conferencing to enhance teaching learning process	1.54	0.64
23	Proper use of ICT related devices and programs in various teaching learning situations	1.56	0.60
24	Adherence to the legal standards pertaining to the use of ICT (especially the Internet) in teaching	1.68	0.75
25	Use of ICT to promote the idea of life long learning	1.87	0.72
26	Evaluation of instructional software programs	1.57	0.65
28	Use of ICT related resources to reinforce instructional activities delivered to large groups	1.59	0.69
29	Use of ICT related resources to reinforce instructional activities delivered to small groups	1.59	0.63
30	Use of ICT related resources to assess students' academic achievement	1.59	0.65
31	Prior planning for ICT use in various teaching learning situations	1.80	0.75

Means of responses also indicated that student-teachers applied the ICT competencies shown in Table (5) during their teaching practice to a low degree.

Table 5: Means and standard deviation of the ICT skills which student-teachers use to a low degree during their teaching practice ranked in a descending order.

No	item	Degree of use M	SD
4	Knowledge of the use of ICT for teaching practical activities	1.39	0.53
7	Making simple connections and installing computers and their peripheral devices	1.33	0.56
8	Use of scanners to make presentations	1.29	0.50
9	Use of digital cameras to make presentations	1.14	0.38
10	Use of ICT to assess student academic achievement	1.37	0.55
13	Use of computers to make spread sheets	1.37	0.61
19	Utilization of audio and video conferencing to promote professional productivity	1.40	0.58
27	Implementing instructional activities derived from research and studies found on the Internet	1.49	0.66

The t-test was performed to identify any significant statistical differences which can be attributed to the variables of gender, specialism and type of school.

Results from the analysis (Table 6) showed that student-teachers' specialism and school type affected their responses regarding the degree of the use of ICT skills during teaching practice in favour of private schools and field teachers, respectively.

Table 6: Results of the t-test relating to the effect of the independent variables in the study regarding student-teachers' ICT use in practice schools

		N	Mean	SD	t	df	Sig. (2-tailed)
GENDER	Male	20	1.47	0.38	-1.959	88	0.053
	Female	70	1.63	0.32			
SPECIALTY	Class teacher	31	1.48	0.35	-2.343	88	0.021
	Field teacher	59	1.66	0.32			
SCHOOL TYPE	Public	78	1.56	0.31	-2.477	88	0.015
	Private	12	1.81	0.42			

Interviews Results

Student-teachers were asked whether they owned a personal computer (PC) at home. The majority of student-teachers reported that they did not own one. Word processing was the predominant use made of ICT by student-teachers who reported owning a PC. All of the interviews indicated positive attitudes towards computers and were ardently in support of their inclusion in education provided that they are properly used in various teaching/learning situations. They also expressed their enjoyment and excitement when using computers. Some of the views expressed by the interviewees were that the computer is:

1- very useful (95%);
2- beneficial and interesting (95%);
3- very useful if we knew how to use it (87.5%);
4- a teaching/learning tool which is very useful (77.5%);
5- an indispensable tool which is necessary in contemporary life (62.5%); and
6- a very useful tool for social interaction and exchange of information among human beings (52.5%).

In line with their views and positive attitudes towards computers, student-teachers indicated that they had gained at least one benefit from using computers. The most common benefits reported by student-teachers are shown in Table (7) in terms of frequency and percentage.

Table 7: Student-teachers' perceived personal ICT benefits

Rank	Benefit	Frequency	percentage
1	Storing information	29	73
2	Searching for information using various search engines	26	65
3	Use of email	24	60

All student-teachers indicated that they had undertaken at least one module related to ICT during their pre-service preparation. However, 11 students (just over a quarter of the interviewees) believed that the module/modules they had undertaken incorporated activities related to real and authentic applications of ICT in instruction. In other words, most interviewees believed that the ICT-related modules they had studied at the university were not conducive as for equipping them with how to harness ICT in teaching and learning in schools. Student-teacher trainers conduct weekly training workshops and seminars covering main aspects of the teaching/learning situation at the university twice a week. Student-teacher trainers in these training workshops and seminars should model good practice so that student-teachers are able to experience the ways in which ICT can be effectively incorporated into teaching and learning. However, results from the interviews showed a different picture from the results revealed in the questionnaire. Only 6 student-teachers reported that their teacher-trainers had incorporated ICT related applications in the training workshops and seminars. The main applications used as reported by the interviewees are shown in Table (8) ranked according to frequency and percentage.

Table 8: The main ICT skills used during workshops and seminars related to teaching practicum

Rank	ICT related applications	frequency	percentage
1	Word processing	6	100
2	Presentation software (Power Point)	5	83
3	Search engines (Yahoo, Google, etc.)	2	33

The majority of the interviewees who reported lack of ICT use during workshops and seminars conducted by teacher trainers indicated the factors that precluded the use of ICT, as shown in Table (9) according to frequency and percentage.

Table 9: Factors which inhibited ICT use during workshops and seminars related to teaching practicum

Rank	Reason	Frequency	Percentage
1	Ineffective ICT related module undertaken at the university	28	70
2	Unavailability of virtual learning environments to practice use of ICT related skills in teaching.	21	53
3	Teacher educator did not model the use of ICT in workshops and seminars.	13	33

Surprisingly, the interviewees neither undertook any training session related to the use of ICT in education

inside or outside the university during the four-year period of teacher preparation, nor did they use any ICT related applications during their teaching practice in schools. The interviewees were asked to provide reasons for not being able to implement ICT-related applications in their teaching in schools. Table (10) shows the main factors which inhibited the use of ICT in schools, as perceived by student-teachers.

Table 10: Factors that inhibited student-teachers ICT use at practice schools

Rank	Factors inhibiting ICT use	Frequency	Percentage
1	Inability to incorporate ICT into teaching and learning	40	100
2	Inadequate training at the university	40	100
3	Lack of computer availability at schools	36	90
4	Lack of help and support from ICT specialist teachers at schools	30	75

All interviewees felt that they needed to develop their ICT skills and competencies. The kinds of knowledge training sessions and expertise which they considered important and likely to promote long-term development in their teaching and learning in the future are shown in Table (11).

Table 11: Knowledge, training sessions and expertise needed to develop student-teachers' ICT competencies

Knowledge, training sessions and expertise needed	Frequency	Percentage
International computer driving licence (ICDL)	38	95
Training sessions in keyboarding	35	88
Relating ICT-related modules taught at the university to ICT subject speciality.	29	73
Teacher educators should model the use of ICT in implementing workshops and training session.	24	60
Methods for designing instructional software programmes to use in teaching	20	50
How to utilize internet in teaching and learning	27	66

Results from Teacher Trainers' Interviews

The majority of the teacher trainers (n=16) reported that they have PCs at home. Amongst those teacher trainers who did use computers at home, the predominant applications were using the Internet search engines (Yahoo, Google, Altavista, etc), searching for information for purposes of scientific research, using E-mail for information exchange, using word-processing for typing examination questions, spreadsheets and statistical packages (SPSS and SAS).

Teacher trainers were asked about their opinions and attitudes towards computers, which was an attempt to ascertain their general attitudes towards computers. Similar to the results obtained from student-teachers, all teacher trainers were found to have a favourable view of computers. Some of their comments which ascertain these positive views are computers are:

1- a very advanced technology that is very useful;
2- an efficient teaching-learning tools; and
3- illiteracy does not mean the inability of a person to read and write but rather the person's inability to deal with computers.

In line with their positive views and attitudes towards computers, teacher trainers indicated that they have gained at least one benefit from using computers.

The most common benefits reported by teacher trainers are shown in Table (12).

Table 12: student-teachers' trainers perceived personal ICT benefits

Rank	Benefit	Frequency	Percentage
1	Information gathering (using the internet search engines)	15	68
2	Use of E-mail.	16	72
3	Word processing	22	100
4	Use of CD-ROMs	5	23

Almost half of the teacher trainers (n=10) undertook a training session related to computer use inside or outside the university. The training sessions focused on areas like Windows, Microsoft Office applications (Excel, Word Processing, Access, and Power Point), the Internet, and E-mail. Such responses suggest that the trainers had not been trained on the utilization of ICT skills in education. The teacher trainers' responses allowed a judgement to be made of the level of their competence in ICT and allowed comparison with how much they used ICT in the delivery of workshops and seminars for student-teachers at the university. The low level of competence in ICT among teacher trainers was reflected on their delivery of student teachers' training workshops and seminars. It was evident from their responses that the majority of the teacher trainers did not model the use of ICT during the weekly seminars and workshops which were conducted to support the student-teachers' ability to use ICT in instruction. Among the 22 teacher trainers interviewed only 4 (18.18%) utilized ICT-related applications. The ICT areas applied during training seminars and workshops for student-teachers by those who reported using them included the use of presentation software (PowerPoint), the Internet search engines (Google, Yahoo, etc.) for gathering information, CD-ROMs, and word processing.

The teacher trainers were asked to provide the factors which precluded their use of ICT in training seminars and workshops for student-teachers. Table (13) shows the inhibiting factors for the use of ICT by teacher trainers during training sessions at the university in terms of frequency and percentage.

Table 13: Factors inhibiting ICT use during workshops and seminars as perceived by teacher trainers

Rank	Factors inhibiting ICT use	Frequency	Percentage
1	Inability to incorporate ICT into teaching and learning	19	86
2	Large number of students in each group to accommodate them in the computer lab	17	77
3	Inability to design instructional software programmes	17	77
4	Inadequate computers with regard to hardware and software	15	68
5	Lack of computers availability at university.	13	59
7	Inavailability of virtual learning environment labs at the university to allow student-teachers to integrate ICT into various teaching learning situations.	7	34

Although all the interviewees strongly supported the introduction of ICT in education, they were cautious about this issue. They reported that the Jordanian MOE and Yarmouk University should have trained teachers and teacher trainers prior to the introduction of the instructional media into schools.

The kinds of knowledge, training sessions and expertise which the teacher trainers considered important and likely to enable them to model the appropriate use of ICT in the delivery of training sessions and seminars for student-teachers are shown in Table (14).

Table 14: Knowledge, training sessions and expertise needed to develop teacher trainers competency in ICT use.

Knowledge, training sessions and expertise	Frequency	Percentage
International computer driving licence (ICDL)	20	91
Methods for designing instructional software programmes to use in teaching	17	77
How to utilize the Internet in teaching and learning.	14	64

Discussion

The results of the study showed that student-teachers possessed varying ICT related ability levels ranging from low to moderate ability. Results from the interviews showed that many of the ICT-related skills some student-teachers' possessed had been gained at home. According to the results from the questionnaire, the level of student-teachers' competence in ICT ranged between low and medium. Despite possessing some basic ICT skills, none of them used these skills for coursework and preparing classroom materials in schools. Nonetheless, during workshops and seminars at the university, few students reported using some ICT related activities such as word processing, power point for designing instructional software programs and internet use for gathering information. Mellar and Jackson (1994) and Cuckle et al (2000) reported similar results. They found that there was little use of IT amongst Post Graduate Certificate in Education PGCE students except in word processing, databases, desktop publishing, spreadsheets and graphics. There was not much difference in computer use in both home and school settings by student-teachers who possessed a PC at home with almost complete lack of ICT use in schools by all of them. The ICT related modules at the university as well as the workshops and seminars related to the practical teaching experience provided student-teachers with low to moderate ability level to use ICT, but did not provide them with the ongoing support needed to adapt the skills learned to their classroom teaching. Additionally, both workshops and taught modules may have focused on teaching the technical skills, but did not show student-teachers how to integrate ICT into their specific subject area. In order for ICT to reach its full potential, ICT taught modules and workshops should focus on the practical use of these skills in classroom teaching. Teacher educators and cooperating teachers should model good practice so that student-teachers are able to experience the ways in which ICT can be effectively incorporated into teaching. However, the results from the present study showed that the situation was problematic because schools and the university did not have the adequate infrastructure to support good practice and thus cooperating teachers at schools and teacher trainers at the university were severely limited by what they could do. If they are to assist student-teachers, cooperating teachers and teacher trainers need to be professionally developed to raise their level of competence in ICT skills and its proper applications in teaching.

Examining individual students' questionnaires did not reveal a different picture with regard to student-teachers' level of competence in ICT and the degree to which they utilized ICT in their teaching at school. It was disappointing to see that many student-teachers from all subject specialties neither gained a considerable ICT skill nor properly practiced using ICT for teaching their subject matter at schools. Although there were students who possessed basic ICT skills and were enthusiastic, they did not use ICT in the classroom as much as they might have done (for instance, those who possessed basic ICT skills in word processing, power point, data base and used them for their own study could have used these applications in their teaching at school). Obviously, those student-teachers were unable to relate the basic ICT skills they possessed to their teaching tasks. Few teacher trainers modelled the use of ICT in the delivery of training workshops and seminars in addition to the separation in the delivery of the taught modules related to basic ICT skills and those modules relating these skills to teaching practice. These factors greatly influenced student-teachers' ability to relate theory to practice and reflected on their performance at schools. It was satisfying, though, to see that student-teachers were enthusiastic and willing to increase their knowledge and use of ICT with students. They also possessed positive attitudes towards the introduction of computers into schools.

Results from both the students' questionnaires and interviews showed that subject specialty did not affect student-teachers' level of competence. Student-teachers from across the subject specialties were exposed to the same ICT experience during their preparation as teachers. They also practice their teaching under similar school settings, which had probably led to the lack of differences in student-teachers' ICT skills. Different results were obtained by Simmons (1994) and Cuckle et al (2000) who found that the most influential factor affecting whether student-teachers used ICT in classroom teaching was their subject specialty. In Jordan, computer use in schools is subject area specific. The results from this study indicated that the practical teaching experience did not provide student-teachers with specific models for instructional use in those subject areas (Wetzel and Chisholm, 1996; Matthew et al, 2002).

The most influential factors which inhibited ICT uptake by student-teachers were there inability to incorporate ICT into teaching and learning; inadequate training at the university; inavailability of computers at schools;

and lack of help and support from ICT specialists at schools. Rosen and Weil (1995), Winnans and Brown (1992), Williams et al (2000), and Hadley and Sheingold (1993) had similar results. They identified a number of factors affecting teachers' use of ICT including lack of teaching experience with ICT, on-site support for teachers using technology, and ICT specialists to teach students computer skills. Regarding teacher educators' reluctance to incorporate ICT into their teaching, Matthew et al (2002) identified a variety of reasons including lack of access to appropriate hardware and software, limited technology skills; lack of knowledge of how to integrate it into their teaching; and lack of teaching support. The results from teacher trainers' interviews were much in sync with these factors.

Student-teachers' gender, specialty, and school type seem to play no role in their level of competence in ICT. Similar to this result, several studies suggested that there was no gender-related impact regarding ICT (Murphy and Greenwood, 1998; Koustourakis et al, 2000). In contrast, several studies indicated that there were differences regarding ICT ascribed to pre-service teachers' gender. Summers (1990), Marshall (1997) and, Watson (1997) found that male pre-service teachers believed that they knew more about ICT, showed more positive attitudes, and had greater confidence in their abilities than their female counterparts. However, in the present study, the independent variables of specialty and school type affected the participants' responses regarding the degree of ICT use at schools. The student-teachers who were being prepared to teach one school-subject (viz., field teachers) appeared to have used ICT skills during their teaching practice more than student-teachers who were being prepared to be class teachers. In addition, student-teachers who practiced teaching at private schools incorporated more ICT into their teaching than student-teachers who practiced their teaching at public schools. A possible explanation for this result could be that privately-run schools are better equipped with ICT related facilities which encourage more student-teachers to incorporate ICT into their teaching.

Results from the interviews showed a somewhat different picture from that obtained through the questionnaire with regard to student-teachers' ICT use at schools and the effect of the variables of gender, school type, and specialty. None of the respondents indicated any sort of ICT use at schools. Moreover, these variables mentioned affected neither the student-teachers' ability level nor their degree of ICT use at practice schools. From the participants' responses to the interview, inadequate training at the university, lack of access to ICT resources, and inability to incorporate ICT in teaching were among the most influential factors which inhibited ICT uptake by student-teachers. These factors affected student-teachers' performance regardless of their gender, specialty, or the type of practice schools. These results are consistent with those obtained by Murphy and Greenwood, 1998 and Simson et al, 1999.

The presence of such inhibiting factors resulted in the majority of student-teachers' becoming less confident when they entered into school on practice. When they finally become teachers, they may not make use of their skills, their enthusiasm and positive attitudes may fade away, and the situation may continue with the next generation of pupils and student-teachers. It is doubtful that such cycle will be broken if this situation persists since student-teachers will be able to qualify as teachers in Jordan without having to demonstrate their level of ICT use upon entry into the teaching profession after graduating from the university. Schools and training institutions in partnership need to take a proactive role in promoting ICT in order for ICT training during initial teacher training to be really effective. Resta et al (2002, p. 13) argued that

> teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country.

Conclusion and Recommendations

Most student-teachers possess limited knowledge of the ways ICT can be used in their teaching practice at schools. Few student-teachers have any instruction in the proper use of ICT in the classroom indicating that transferring these skills from teacher preparation to classroom practice has been limited. Little use of ICT at schools and the university settings seems to be related to the inability to incorporate ICT into teaching and learning, inadequate training at the university, inavailability of computers (both at schools and the university), and lack of help and support from ICT specialists at schools.

Teacher educators at the university are not prepared to integrate ICT into their courses and, consequently, are not able to model the appropriate use of ICT in the delivery of workshops and seminars they conduct for student-teachers. The inhibitors resulting in this inability on the part of teacher educators appear to be similar to those encountered by student-teachers, which both need to be tackled in partnerships between schools and the university.

Teacher educators as well as school teachers should be prepared through intensive professional development training sessions so that they are able to model the appropriate use of ICT in their teaching and assist their student-teachers to imitate them.

Although this study has unveiled many weaknesses on the part of student-teachers and teacher trainers, better insights into the reluctance to use ICT and deeper understanding of their training needs are urgently

needed. ICT specialists and serving school teachers appear to be unable to assist student-teachers to incorporate ICT into their teaching. It is necessary to identify their training needs to provide them with suitable professional development activities so that they are able to aid student-teachers.

The separation in the delivery of ICT-related courses from the real world context proved to be ineffective in preparing student-teachers to use computers in their teaching. Thus, for those courses to be effective, student-teachers need to learn how to integrate their knowledge of ICT into their courses in all subject areas and be able to apply them in a real world context. A possible approach to relate ICT courses to real world situations is through designing a virtual school-based experience and including it as a component in the pre-service teacher education programme. Gibson (2002) designed a virtual field trip to schools through the use of WebCT software and interactive multimedia combinations of video, text, sound, and computer graphics to allow her students to experience teachers demonstrating their practice in a social studies course. This approach may help student-teachers to observe real classes and learn from others through electronic means prior to their entry into teaching practice.

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Jordan Journal of
EDUCATIONAL SCIENCES
An International Refereed Research Journal

Volume 1, No. 2, June 2005, Jamad 1 1426 H

Jordan Journal of Educational Sciences (*JJES*): An International Refereed Research Journal established by the Higher Research Committee, Ministry of Higher Education & Scientific Research, Jordan, and published quarterly by the Deanship of Research & Graduate Studies, Yarmouk University, Irbid, Jordan.

Manuscripts should be submitted to:

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Jordan Journal of Educational Sciences
Deanship of Research and Graduate Studies
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Jordan Journal of EDUCATIONAL SCIENCES

An International Refereed Research Journal

Volume **1,** No**. 2, March 2005, Jamad 1 1426 H**

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Some Variables Predicting Learners' Attitudes toward Web-based Instruction

Husam Al-Khadash* and Amjad Abuloum **

Received Date: Nov. 2, 2004 **Accepted Date: May 5 , 2005**

Abstract: *As more and more institutions of higher education plan to integrate web-based instruction into their settings, a need exists to understand and predict learners' attitudes toward this new form of learning. By being able to predict learners' attitudes, instructors and decision-makers can improve and enhance students' learning experience. The purpose of this study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction. The study surveyed 440 students who were enrolled in the web-based course "Accounting Principles (1)" offered by the Department of Accounting at the Hashemite University. Students were taught in a flexible (mixed) mode of instruction. Data about the four possible predictors and the dependent variable, learners' attitudes toward web-based instruction, was collected. Multiple regression analysis using the stepwise approach was utilized to analyze the data. The findings of the study indicated that learners' prior experience with the Internet and their frequency of accessing the web-based course may act as predictors of their attitudes toward web-based instruction. More precisely, the study showed that approximately 11% of learners' attitudes was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course. This study has identified important predictors that may prove to valuable to future researchers and instructors who are involved in the future of web-based instruction. (**Keywords**: Web-based instruction; Electronic learning; Online instruction; Internet-based instruction)*

بعض المتغيرات التي تتنبأ باتجاهات الطلبة نحو التعليم المبني على شبكة المعلومات

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ملخص: مع زيادة عدد مؤسسات التعليم العالي التي تسعى لإدخال التعليم بوساطة شبكة المعلومات ضمن سياساتها التعليمية تظهر الحاجه إلى دراسة وفهم العوامل المؤثرة على اتجاهات الطلبة نحو إستخدام هذه التكنولوجيا الحديثة . إن لمثل هذه الدراسات الاثر على متخذي القرارات وأعضاء هيئة التدريس بما يخدم هذه التجربة. إن الغاية من هذه الدراسة هو تحديد إلى أي مدى تؤثر عوامل العمر، والجنس ، والخبرة السابقه في إستخدام شبكة المعلومات وعدد مرات الدخول لموقع المادة التعليمية الإلكتروني على اتجاهات المتعلمين نحو التعليم الإلكتروني، لقد شملت هذه الدراسة 440 طالباً ممن سجلوا مادة مبادىء محاسبة (1) في الجامعة الهاشمية . وقد تم تدريس هؤلاء الطلبة بإستخدام اسلوب التعليم المختلط بين التعليم التقليدي والتعليم الإلكتروني ، وتم جمع البيانات اللازمة حول متغيرات الدراسة واستخدم اسلوب تحليل الإنحدار المتدرج لتحليل هذه البيانات وكذلك لإختبار فرضيات الدراسة. لقد جاءت نتائج الدراسة لتظهر ان خبرة الطالب السابقة في استخدام شبكة المعلومات وعدد مرات دخوله للموقع الإلكتروني يمكن إستخدامها كمتغيرات للتنبؤ بإتجاه الطلبة نحو التعليم الإلكتروني، حيث اشارت النتائج إلى أن11% من التغير في إتجاهات الطلبة نحو التعليم الإلكتروني يعود إلى عاملي الخبرة السابقة في إستخدام الشبكة وعدد مرات دخول الطالب للموقع الإلكتروني، وأن معرفة هذه العوامل يخدم الباحثين والمدرسين في هذا المجال. (***الكلمات المفتاحية***: *التعليم المبني على شبكة المعلومات، التعليم الالكتروني، التعليم بالإنترنت*)

Introduction: Within the past few years, colleges and universities have introduced and incorporated a number of e-learning technologies to face the increasing number of students and to enhance student-learning experiences. Symonds (2003) noted that undergraduate enrolment in the US is up 8% since 1999, yet there are widespread instances of reductions in government spending. Although tuition fees have risen steadily as a response to this situation, a long-term solution is still needed to be sought. It appears that significantly different organizational forms are needed to accommodate the joint pressures of growing demand, rising tuition, and limited public funding within the university system.

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A review of the evolution of online and distance education in higher education might indicate how traditional universities' organizational structures will witness changes in the future in response to these environmental pressures. These changes indicate a major, underlying shift in the way in which university education will be conducted in the future and provide additional evidence of the effectiveness of online instruction. Unfortunately, this is the case in many countries over the world, including Jordan.

The increase in the number of students in Jordanian public universities from 30,000 students in 1985 to more than 120,000 students in 2003 has been coupled with an increase in the government spending for those universities of no more than 50% (Burke and Al-Waked, 1997). It is obvious that universities are facing raised ground and in some cases decreased government funding. Besides, moving toward online education

usually leads to an enhancement in learners' experiences. Therefore, the need to move to online instruction has inevitably become crucial in the Jordanian system for higher education.

To ensure a proper integration and implementation of online instruction, a deep analysis of the new learning environment has to exist. According to Shih (2000), it is always important to understand how a new form of learning can affect the learning process, especially when it is used by different types of learners. Furthermore, it is of an importance to identify the learning factors that influence the success of learners in the new form of learning (Shih, 2000). For this purpose, this study proposes an e-learning model, measures learners' attitudes toward that model, and tests four possible factors (age, gender, prior experience with the Internet, and frequency of accessing the web-based course) that could be used to predict learners' attitudes toward the proposed model. According to Dutton, Dutton, and Perry (2002), older students prefer online or web-based courses. Therefore, age was included in the study. Gender was investigated because Marcinkiewicz's (1993) review of research suggests that gender differences are related to attitudes and that females have more negative attitudes toward computers and view them as less useful. As for prior experience, research has documented the relationship between experience and user acceptance of technology in general (Koohang, 1989). In fact, Busch (1995) concluded that "the most important predictor of computer attitudes is previous computer experience" (p. 154). Wegner, Holloway, and Garton (1999) find that students who perceive that the Internet-based course is information-rich and adequate to the instructional task at hand make greater use of the learning environment. And since students who access the Internet-based course more frequently may make greater use of the learning environment, their attitudes toward the online course may differ from those who access the course less frequently. Therefore, frequency of accessing the web-based course was included in the study as a possible predictor. Consequently, an in-depth investigation of these predictors may affect the effectiveness of online instruction, and the results of such investigation can form a basis on which education policy-makers can advise.

Statement of the Problem: As mentioned earlier, the rapid increase in the number of students, coupled with a decreased government funding, has created a challenging problem for educational institutions around the world, including Jordan. In an attempt to solve this problem, these institutions started to explore new ways for the delivery of instruction.

According to Rosenberg (2000), web-based instruction has the potential of allowing students to access up-to-date information anywhere anytime, promoting active and independent learning, and supporting communication between experts and novices. Besides, an estimated 80% of the cost of facilities, faculty and administrators could be eliminated by offering web-based courses (Leonard, 1997). Therefore, many educational institutions, including the Hashemite University, have already initiated the process of integrating web-based instruction into its settings. However, in order for this process to be successful, a continuing body of research that analyzes the different aspects of this new form of instruction has to exist. This study sheds light on the aspect of learners' attitudes toward web-based instruction. More specifically, the study attempts to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

Objectives of the Study: The main objective of the study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

Importance of the Study: This study came to test four possible factors that can be helpful in predicting learners' attitudes toward web-based instruction. The results of the study contribute substantially, we believe, to integrating web-based instruction into the settings of educational institutions in Jordan. More specifically, administrators and decision-makers will find this study of a value in determining some factors that can affect the attitudes of learners participating in web-based instruction toward this newly implemented form of instruction in Jordan.

In addition, the information provided by this study may encourage students and faculty members who have not experienced web-based instruction to participate in web-based courses.

Delimitations and Limitations: The delimitations and limitations of this study included the following:

1. The target population of the study was limited to students enrolled in the "Accounting Principles (1)" course offered by the Department of Accounting at the Hashemite University in the first semester of the academic year 2003-2004.
2. This study was delimited to the use of a survey instrument as the primary method of gathering data.
3. The design of this study was survey research.

Definition of Terms

The following defined terms are required for the purpose of this study:

Attitude: is a learned predisposition to respond in a consistent manner to a given object or situation (Fishbein and Ajzen, 1975).

Web-based instruction: is a method of providing a learning environment that is mediated and supported by the attributes and resources of the Internet. It is an increasingly popular method for delivering university courses (Brooks, Nolan, and Gallagher, 2001).

Literature Review: E-learning literature mainly concentrates on the benefits of using online instruction, and many previous studies addressed e-learning outcomes along with student satisfaction perceptions using instructors' self-report surveys (Arbaugh and

Duray, 2002). Studies have also used instructor surveys to generate findings on online learning methods (Perreault, Waldman, Alexander, and Zhao, 2002; Vrasidas, 2002; Lynch and Murranka, 2002; Drago, Peltier, and Sorensen, 2002). For example, McDonald (2002) emphasized that there are many benefits to using online distance learning environments: online education is available "anyplace, anytime" for global communities of learners based on shared interests. She claimed that "online education with its group-based instruction and Computer Mediated Communication (CMC) provides an opportunity for new development and understanding in teaching and learning" (p.11). McDonald also concluded that CMC encourages collaborative learning by not providing cues regarding appearance, race, gender, education, or social status bestowing a sort of anonymity to participants.

A study conducted by Devlin and James (2003) in Australia concluded that the impact of multimedia and educational technology could provide some indication of improved student learning. Investigating the impact of randomly generated open access tests, Thelwell (2000) found evidence of improved student motivation and modified student study behavior through increased revision.

In view of the previously-mentioned studies, we can conclude that the use of online instruction has many promising benefits for education. However, we may wonder whether achieving such benefits is in someway linked with students' demographic variables (e.g. age, gender, etc.) or experiences with the Internet.

Many studies investigated the relationship between students' attitudes toward using online instruction and some demographic variables like age, gender, number of times logged into web-based courses and users' experience in using the Internet. Age and gender differences have been reported in the literature as affecting perceptions in general (Hackett, Mirvis, and Sales, 1991). Consequently, gender was included as a matter of understanding if differences of perceptions toward using online instruction occurred between male and female respondents. Experience with the Internet was included because research has documented the relationship between experience and user acceptance of technology in general. The more experience a user has with technology the more he or she tends to accept it (Koohang, 1989). Therefore, user's acceptance may in turn promote learning. The number of times logged into web-based courses is also expected to affect user's acceptance of technology (Yang and Chai, 2000).

Jiang and Shrader (2001) conducted an exploratory study to investigate several factors that might contribute to students' academic achievement and satisfaction with an online environment provided by Western Governors University. These factors are pre-assessment results, interaction with the mentor, number of online courses taken and demographic profile (e.g., age, gender, current position, etc.). Participants in this study were 120 students enrolled in a Master's program. They learned via direct interaction with online course materials and with the mentor using e-mail, listservs and threaded discussions. The researchers developed a questionnaire to reveal students' perceptions of the program and used the results of pre-assessment and raw count of students' messages. Using correlation analysis and multiple regression analysis, the researchers found that students' overall satisfaction was high, with a mean score of 3.18 on the four-point rating scale. They felt most satisfied with the flexibility of time and place provided by the online course. They also found that the demographic variables did not bear any significant relationship with satisfaction and academic progress. Another interesting result of Jiang and Shrader's study was that the more the students communicated with the web-based course, the more motivated they were and the more academic help they obtained from their web-based course. Consequently, these students progressed faster and were more satisfied with online learning.

Similar results were found by a study conducted by Koohang and Durante in 2003. Their study tested learners' perceptions toward Web-based distance learning and gave attention to the variables of age, gender, and experience with the Internet to find whether these variables are significant factors in learners' perceptions toward Web-based learning. They found that age and gender were not significant factors, but there was a significant difference among the levels of learners' experience with the Internet and their perceptions toward the Web-based learning activities.

Emphasizing the same results he and his partner found before, Koohang (2004) conducted another study that investigated users' perceptions toward e-learning. In addition to the variables of age, gender and prior experience with the Internet, his study gave attention to the amount of time the e-learner spent on the e-learning courseware to do his/her assignments. Although the study found no significant difference for age and gender, it indicated that learners' prior experience with the Internet and the amount of time learners spent on e-learning activities were significant factors. In other words, Koohang's study showed that students with more prior experience with the Internet had significantly higher positive perceptions toward e-learning. Likewise, students who spent more time on e-learning to complete their assignments indicated significantly higher positive perceptions toward the e-learning usability.

As for the frequency of accessing the web-based course, it is found that students with better attendance (number of times logged into the site) and reading depth (number of time browsing the material) in courses had better achievement (Lin and Chen, 2000). However, the study of Yang and Chai (2000) showed no obvious effect on achievement from students' learning activities such as times of log in or participation in discussions. Instead, the study showed that the only noticeable effect of these learning activities was on whether students felt e-learning was helpful.

In summary, we can say that the use of web-based instruction has many promising benefits for education. Analyzing and understanding learners' attitudes toward web-based instruction is helpful in the proper implementation and design of web-based courses. In the literature, it has been shown that it is of an importance to identify factors that influence learners' success in web-based instruction. Studies have examined a number of these factors, like prior experience with the Internet, interaction with mentor, number of online courses taken, frequency of accessing the web-based course, and several demographic variables. However, there is a great need to test some of these factors in the Jordanian environment for web-based instruction. Therefore, this study came to test four possible factors that can be helpful in predicting learners' attitudes toward web-based instruction. We believe that the results of the study will contribute substantially to integrating web-based instruction into the settings of educational institutions in Jordan.

Methodology

The Web-based Course

The web-based course that was the concern of this study was the Accounting Principles (1) course offered by the Department of Accounting at the Hashemite University in the first semester of the academic year 2003-2004. The Hashemite University is considered one of Jordanian's largest providers of higher-level education. Until the end of the Academic year 2002-2003, it is the only public university accredited for online teaching by the Ministry of Higher Education and Research in Jordan. Many other universities are moving toward getting such a credit. Although it's newly established, the Hashemite University was the first university in Jordan that started the process of planning and integrating e-learning into its courses.

All six sections of the Accounting principles (1) course were taught in a flexible (mixed) mode by two instructors who completed a workshop on developing web-based courses during the summer of the year 2003. The two instructors worked together on developing a web-based version of the Accounting Principles (1) course using Blackboard Learning and Community Portal System™, an authoring environment, which utilizes asynchronous (Bulletin, e-mail) and synchronous (Chat) communication tools.

Face-to-face lectures of three class hours per week were supplemented by a variety of web-based materials including an extensive collection of interactive, collaborative practice materials, an extensive set of PowerPoint slides available as a supplement to the textbook, and extensive files of repeatable practice quizzes. Online communication was set up to support the assessments: These consisted of a portfolio, which followed the development process of the web-based materials and led to the web-based course as a final product. As part of the development cycle, students were asked to get feedback from fellow students or external sources by using e-mail and chat rooms. The chat rooms were also available for other forms of discussion e.g. for advice and help.

The Instrument: The main goal of this study was to test four possible predictors of learners' attitudes toward web-based instruction. To achieve this goal, an instrument was designed to collect information about the four possible predictors (age, gender, prior experience in using the Internet, and frequency of accessing the web-based course) and the predicted or dependent variable (learners' attitudes toward web-based instruction).

Section one of the instrument was designed to gather information regarding gender, age, prior experience with the Internet, and frequency of accessing the web-based course. See Table 1.

Table 1: Section (1) of the Instrument

SECTION (1):
Please respond to the following items by circling the appropriate number

1. **Gender?**
   (1) Male (2) Female
2. **Age?**
   (1) Less than 20 years (2) From 20 to 22 years
   (3) From 23 to 25 years (4) Greater than 25 years
3. **Prior experience with the Internet?**
   (1) From 1 to 2 years (2) From 3 to 5 years (3) Over 5 years
4. **Frequency of accessing the Web-based course?**
   (1) Never (2) Seldom (3) Once a week
   (4) Once every two days (5) Once a day (6) More than once a day

Section two, the attitudes scale, was built to measure learners' attitudes toward web-based instruction in light of their experience with the web-based course. Students were asked to rate their agreement with eleven items on a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The statements for the items were worded positively so that a higher score indicates more favorable attitudes toward web-based instruction. A list of these items is shown in Table 2.

Table 2: Section (2) of the Instrument

SECTION (2): The Attitudes Scale
Using the following scale, please indicate your agreement with each of the items that follow by circling the number that best indicate your attitude toward web-based instruction.
Scale:
5=Strongly Agree, 4=Agree, 3=Not Sure, 2=Disagree, 1=Strongly Disagree

1. Encourages me to learn more	5	4	3	2	1
2. Improves my discussion skills.	5	4	3	2	1
3. Makes me feel more involved in the class.	5	4	3	2	1
4. Makes me realize the importance of the studying materials.	5	4	3	2	1
5. Encourages me to take courses taught in a similar way.	5	4	3	2	1
6. Makes me feel more prepared for the examinations.	5	4	3	2	1
7. Stimulates my interest in what I learn.	5	4	3	2	1
8. Encourages me to ask more questions.	5	4	3	2	1
9. Provides me with a new positive learning experience.	5	4	3	2	1
10. Enhances my ability to understand & evaluate viewpoints.	5	4	3	2	1
11. Makes me feel more responsible for studying.	5	4	3	2	1

The instrument underwent two phases of validity verification. The first phase involved sending all survey items to a panel of four instructional technologists from four Jordanian universities to rate each item for clarity and usefulness in measuring learners' attitudes toward web-based instruction. Members of the panel were asked to make appropriate changes to the survey items. After making necessary changes, the survey was ready for the second phase of validity verification. Three weeks prior to the end of the first semester of the academic year 2003-2004, the second phase began by administering the survey to a randomly selected sample of 25 students who were enrolled in the "Accounting Principles (1)" web-based course. These students, who were later excluded from the sample of the study, were asked to rate the survey items for clarity of expression. Based on students' responses and comments, a final version of the survey was prepared.

Two weeks prior to the end of the first semester of the academic year 2003-2004, the internal consistency of the instrument was determined using 40 subjects (21 males and 19 females) who were taking the "Accounting Principles (1)" web-based course. The sample used to determine the internal consistency was independent of the sample of respondents used in the study itself. The calculated coefficient alpha reliability for the attitudes scale was .87, which suggests that this instrument is suitable to measure learners' attitudes toward the web-based course.

Subjects and Procedure: The population of this study consisted of all the undergraduate students who enrolled in the web-based course "Accounting Principles (1)" during the first semester of the academic year 2003-2004. The sample of the study was the whole population, which was 510 students. Among these, 65 students were excluded because they were used in establishing the validity and reliability for the instrument, and another 5 students were excluded because their responses were not consistent. A description of the rest of the students (440) regarding gender, age, prior experience with the Internet, and frequency of accessing the web-based course is presented in table 3.

Of the 440 students who participated in the study, 225 were males (51.1 percent of total sample) and 215 (48.9 percent of total sample) were females. Initially, students' ages varied in four categories: 319 students (72.5 percent) who were less than 20; 111 students (25.2 percent) who were between the ages of 20-22; 8 students (1.8 percent) who were between the ages of 23-25; and only 2 students (0.5 percent) who were over 25. To get more stable results, the last three categories of age have been merged into one category that contained 121 students (27.5 percent) who were 20 years of age and older. Students' prior experience with the Internet varied in three categories: 256 students (58.2 percent) with 1-2 years of experience; 127 students (28.9 percent) with 3-5 years of experience; and 57 students (13 percent) with over 5 years of experience. Finally, students' frequency of accessing the web-based course varied in six categories: 1 student (0.2 percent) who never accessed the web-based course; 31 students (7.1 percent) who were rarely accessing the course; 82 students (18.6 percent) who were accessing the course once a week; 186 students (42.3 percent) who were accessing the course once every two days; 121 students (27.5 percent) who were accessing the course once a day; and 19 students (4.3 percent) who were accessing the course more than once a day. Similar to what we did to the age categories, the first two categories of frequency of accessing the web-based course ("Never" and "Seldom") have been merged into one category that included 32 students (7.3 percent) who rarely or never accessed the web-based course, see Table 3.

Table 3: Frequency and Percentage of Students by Levels of Independent Variables (Possible Predictors)

Independent Variable (IV)	Levels of IV	N	Percentage
Gender			
	Male	225	51.1
	Female	215	48.9
	Total	440	100
Age			
	Less than 20 years	319	72.5
	20 years and above	121	27.5
	Total	440	100
Prior Experience with the Internet			
	From 1 to 2 years	256	58.2
	From 3 to 5 years	127	28.9
	Over 5 years	57	13.0
	Total	440	100
Frequency of Accessing the Web-based Course			
	Seldom or Never	32	7.3
	Once a week	82	18.6
	Once every two days	186	42.3
	Once a day	121	27.5
	More than once a day	19	4.3
	Total	440	100

To gather information regarding the predicted variable and its possible predictors, the previously-mentioned instrument was handed to students during the last week of the semester.

Research Question: The central problem was the prediction of learners' attitudes toward web-based instruction. A distinguished feature of this study was the combining of multiple variables as possible predictors of learners' attitudes toward web-based instruction. The research question for this study was the following:

Can age, gender, prior experience with the Internet, and frequency of accessing the web-based course predict learners' attitudes toward web-based instruction?

Data Analysis: For the purpose of predicting learners' attitudes toward web-based instruction from the four

possible predictors (age, gender, prior experience with the Internet, and frequency of accessing the web-based course), multiple regression analysis was used to analyze the data using the stepwise approach. The stepwise approach was utilized to determine what proportion of the learners' attitudes variance was accounted for by the significant predictor(s). Descriptive analyses were also used to provide information regarding means and standard deviations of different variables. The SPSS statistical package was utilized to compute all statistics reported in the following section.

Results and Discussion

Descriptive Analysis: Table 4 shows the descriptive analysis for the eleven items of the attitudes scale. As mentioned before, these items measure the predicted (dependent) variable, learners' attitudes toward web-based instruction. The data shown in table 4 revealed an overall mean score of 4.02; indicating high learners' attitudes toward web-based instruction.

Table 4: Means and Standard Deviations for Items of the Attitudes Scale

	N	Mean	SD
Item #1 Encourages me to learn more	440	4.09	1.175
Item #2 Improves my discussion skills	440	4.09	1.175
Item #3 Makes me feel more involved with the class	440	4.38	1.124
Item #4 Makes me realize the importance of the studying materials	440	3.75	1.161
Item #5 Encourages me to take courses taught in a similar way	440	3.99	1.138
Item #6 Makes me feel more prepared for the examinations	440	3.47	1.213
Item #7 Stimulates my interest in what I learn	440	3.58	1.397
Item #8 Encourages me to ask more questions	440	4.16	1.267
Item #9 Provides me with a new positive learning experience	440	4.59	1.095
Item #10 Enhances my ability to understand & evaluate viewpoints	440	3.87	1.153
Item #11 Makes me feel more responsible for studying	440	4.21	1.104
Average	440	4.02	1.062

As shown in Table 4, items 1, 2, 3, 8, 9 and 11 were perceived by students as the most advantageous items for using web-based instruction. Based on the same table, it is interesting to notice that all items have mean points above 3.47, which gives a positive indicator about learners' satisfaction with web-based instruction.

Table 5 displays the means and standard deviations of learners' attitudes at different levels of the independent variables. Based on the table, males and females tend to have the same level of attitudes toward web-based instruction.

The two categories of age seem to have close levels of attitudes toward web-based instruction. Regarding prior experience with the Internet, we can notice that as we move from a category with less experience to a category with higher experience, attitudes toward web-based instruction tend to increase accordingly. The same can be said about the categories of the frequency of accessing the web-based course variable.

Table 5: Means and Standard Deviations of Learners' Attitudes by Levels of Independent Variables (Possible Predictors)

Independent Variable (IV)	Levels of IV	N	Mean	SD
Gender				
	Male	225	4.02	1.054
	Female	215	4.01	1.071
	Total	440	4.02	1.062
Age				
	Less than 20 years	319	4.03	1.063
	20 years and above	121	3.99	1.061
	Total	440	4.02	1.062
Prior Experience with the Internet				
	From 1 to 2 years	256	3.93	1.059
	From 3 to 5 years	127	4.07	1.065
	Over 5 years	57	4.31	1.072
	Total	440	4.02	1.062
Frequency of Accessing the Web-based Course				
	Seldom or Never	32	3.11	1.061
	Once a week	82	3.77	1.075
	Once every two days	186	4.13	1.056
	Once a day	121	4.23	1.062
	More than once a day	19	4.33	1.072
	Total	440	4.02	1.062

Correlation Analysis: Correlation coefficients were computed among the five variables used in the study. Using Bonferroni approach to control for Type I error across the 10 correlations, a p-value of less than .005 (.05/10=.005) was required for significance. The results of the correlational analyses are presented in table 6. The first row lists the correlation coefficients between the possible predictors and the predicted (dependent) variable, learners' attitudes toward web-based instruction. It is interesting to note that the correlations between each of gender, and age, and the predicted variable are negative, relatively small, and statistically not significant. However, the correlations between the other two predictors (prior experience with the Internet and frequency of accessing the web-based course) and the predicted variable are positive, relatively close to medium, and statistically significant. In fact, the strongest correlation existed between frequency of accessing the web-based course and the predicted variable (r=.279). The second strongest correlation was between the predicted variable and prior experience with the Internet (r=.223). Among the predicted variables, the table reveals a positive, close to medium, and statistically significant correlation, $r(438)=.214$, $p<.001$, between gender and prior experience with the Internet. The correlation between prior experience with

the Internet and frequency of accessing the web-based course is not significant, r(438)=.108, p=.063. Similarly, the rest of the correlations among predictors have proved to be non-significant.

Table 6: Correlations among the Five Variables Used in the Study

Variables	1	2	3	4	5
1. Learners' Attitudes toward Web-based Instruction	1.000	-.006	-.055	**.223***	**.279***
2. Gender		1.000	.139	**.214***	.074
3. Age			1.000	.059	-.084
4. Prior Experience with the Internet				1.000	.108
5. Frequency of Accessing the Web-based Course					1.000

* p<.005

Multiple Regression Analysis—Stepwise Approach

Table 7 shows the results of the stepwise regression analysis using four variables as predictors. Step one of the analysis revealed that prior experience with the Internet is a significant predictor of learners' attitudes toward web-based instruction, R^2=.05, adjusted R^2=.048, F(1,438)=23.01, p<.001. This result is supported by the close to moderate correlation between the two variables (r=.223). Approximately 5% of the variance of the learners' attitudes variable was accounted for by its linear relationship with learners' prior experience with the Internet.

Step two of the stepwise regression analysis indicated that the frequency of accessing the web-based course variable did add significantly to the prediction of learners' attitudes toward web-based instruction R^2 change=.066, F(1,437)=32.359, p<.001.

Table 7: Results of Stepwise Regression Analysis Using Four Variables as Predictors

Step	Variable	R	R Square	Adjusted R Square	R Square Change	F Change	Sig. F Change
1	Prior Experience	.223	.050	.048	.050	23.011	.001
2	Prior Experience & Frequency of Access	.340	.115	.111	.066	32.359	.001

Variable	Weight (B)	T	P-value
(intercept)	2.85	30.62	0.001
Prior Experience	0.06	2.83	0.001
Frequency of Access	0.21	14.03	0.001

The same step also showed that the linear combination of the two variables (prior experience with the Internet and frequency of accessing the web-based course) was significantly related to the learners' attitudes variable, R^2=.115, adjusted R^2=.111, F(2,437)=28.509, p<.001. This means that almost 11% of the variance of the learners' attitudes variable was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course. And since the correlation between prior experience with the Internet and frequency of accessing the web-based course is not significant, r(438)=.108, p=.063, the frequency of accessing the web-based course variable accounts for almost 6% (11%-5%) of the variance of the learners' attitudes variable.

As explained above, the previous stepwise multiple regression procedure resulted in a mathematical model that explained 11% of the variance of learners' attitudes toward web-based instruction. The prediction equation for this model is as follows:

Attitudes = 2.85 + 0.06 (Prior Experience) + 0.21 (Frequency of Access)

Note that the relationship between attitudes and prior experience runs in a positive direction, meaning that learners with more prior experience with the Internet are more likely to have higher attitudes toward web-based instruction. In this study, students with over 5 years of experience with the Internet, although constituting 13% of the sample, had the highest level of attitudes toward web-based instruction. A similar relationship exists between attitudes and frequency of access. Learners who access the web-based course more frequently are more likely to have higher attitudes toward web-based instruction. In our study, students who reported that they were accessing the web-based course more than once a day had the highest level of attitudes toward web-based instruction. The lowest level of attitudes existed among students who never accessed the web-based course.

In summary, the above equation suggests that from learners' perception, promoting web-based instruction can be achieved through:

1. Increasing learners' prior experience with the Internet. This can be done by having students take prerequisite introductory courses that focus on Internet basic skills, like navigating the Internet, searching the Internet for specific information, using email to exchange information, downloading information from the Internet, and designing web pages. Although this study did not examine the type of prior experience with the Internet, we believe that it is worthy of investigation and is recommended for future study.
2. Increasing learners' frequency of accessing the web-based course. This can be done by increasing students' interaction with the web-based course through, for example, online discussion-boards, online quizzes and tests, online assignments, email and messages, online announcements, online projects, and others.

Conclusion: As more and more institutions of higher education plan to integrate web-based instruction into their settings, it is imperative to understand and predict learners' attitudes toward this new form of learning. By being able to predict learners' attitudes, instructors and decision-makers can improve and enhance students' learning experience.

The purpose of this study was to determine the extent to which age, gender, prior experience with the Internet, and frequency of accessing the web-based course could predict learners' attitudes toward web-based instruction.

The findings of this study revealed that age and gender have no significant relationships with students' attitudes toward web-based instruction. In this regard, the study

goes in line with the findings of other studies (Jiang & Shrader, 2001; Koohand & Durante, 2003; Koohang, 2004).

Emphasizing the results of the work done by Koohang (2004), this study showed that learners' prior experience with the Internet and their frequency of accessing the web-based course may act as predictors of their attitudes toward web-based instruction. More precisely, the study showed that approximately 11% of the variance of learners' attitudes was accounted for by its linear relationship with both learners' prior experience with the Internet and their frequency of accessing the web-based course.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 143-148

Effects of Using Computer Games as an Instructional Tool on Third Grade Students' Acquisition of Higher Order Thinking Skills

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Received Date: Aug. 22, 2004 **Accepted Date: April 3, 2005**

Abstract: *The purpose of this study is to investigate the effect of computer games as an instructional tool on third grade students' acquisition of higher order thinking skills. Three instructional computer games that cover the content of three lessons in Arabic, Mathematics and Science textbooks were used. Thirty-two students served as the experimental group and were taught via computer games, and 31 students served as the control group and were taught the same content without using computer games. Subjects were all chosen from a public school in Irbid in the northern part of Jordan. The target higher order thinking skills were analysis, synthesis, and evaluation, assessed by an achievement test designed for this purpose. The results of the study revealed significant differences among students in the acquisition of the three levels of higher order thinking skills in favor of the experimental group, indicating a significant effect of computer games on acquiring higher order thinking skills. (**keywords**: Computer assisted instruction, computer games, thinking skills).*

أثر استخدام ألعاب الحاسوب كونها وسيلة تعليمية في اكتساب طلبة الصف الثالث الأساسي لمهارات التفكير العليا

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ملخص: هدفت هذه الدراسة إلى الكشف عن أثر العاب الحاسوب كونها وسيلة تعليمية في اكتساب طلبة الصف الثالث الأساسي لعمليات التفكير العليا، وتم استخدام ثلاث العاب تعليمية تغطي محتوى ثلاثة دروس من كتب اللغة العربية والرياضيات والعلوم للصف الثالث الأساسي. وقد تكونت عينة الدراسة من 32 طالباً مثلوا العينة التجريبية التي درست المحتوى باستخدام العاب الحاسوب كونها وسيلة تعليمية، و31 طالبا درسوا المحتوى نفسه باستخدام الوسائل الاعتيادية، وقد تم اختيار أفراد الدراسة جميعهم من إحدى المدارس الحكومية في مدينة إربد في الأردن. وتحددت مهارات التفكير العليا بمهارات التحليل والتركيب والتقويم، وتم تقييمها باستخدام اختبار تحصيلي صمم لهذا الغرض، وقد أظهرت نتائج الدراسة وجود فروق دالة إحصائياً بين أفراد عينة الدراسة في اكتساب مهارات التفكير العليا وعلى مستويات التفكير الثلاثة ولصالح أفراد المجموعة التجريبية. (**الكلمات المفتاحية**: التعليم بالحاسوب، ألعاب الحاسوب، مهارات التفكير).

Playing games is one of the most common activities used in elementary schools. They play an important role in the psychological, social and intellectual development of children. Playing is a voluntary activity that is intrinsically motivating. Therefore, teachers use it as one technique that increases activity and makes learning a pleasant experience, affording joy, fun and humor (Rieber, 1996). Indubitably, these attributes closely match those of modern educational theories (Behavioral theory and Cognitive theory) where learning should be a self-motivating and rewarding activity.

Because of the development in utilizing computers in all aspects of life, the nature of games children play has changed dramatically. Playing games has switched from traditional instructional practices to a technology-based learning environment. This transition has attracted a great deal of interest especially after the widespread of computers (Bright & Harvey, 1984). Computers have spread through schools, homes and society. They have taken over children's minds and the way they view the world. Studies revealed that the most popular home activity preschool children enjoy is playing computer games (Mumtaz, 2001). It has been argued that the computer age has replaced book-based learning and a recent survey found that 15-year-old boys spent less than two hours a week reading books for pleasure, compared with 11 hours a week watching television and nine hours playing computer games (Kerawalla & Crook, 2002).

Studies all over the world confirm that games are the most common application of computers especially among children. A study in the UK carried out by Livingstone and Bovill (1999) examined computer use both at home and at school for children aged 6-17 years and found out that most home computer activity (77%) centers on games. Worldwide, another piece of research conducted by Setzer & Duckett (1994) revealed that over 10.5 Billion US Dollars were spent worldwide on electronic games for home use in 1993.

Because of the popularity of electronic games, educators began considering their applications to classrooms. Educators discovered that electronic games can fit into the educational environment in a variety of ways,

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ranging from creating total-learning systems to serving as components in more traditional learning environment (Al Mubireek, 2003).

Many people consider games just as a means of entertainment and not as part of the educational software, thus having little connection with the schools' agendas. Some researchers went on to say that the prolonged and excessive use of electronic games contribute to an obsessive, addictive behavior, dehumanization of the player, desensitizing of feelings, health problems and development of anti-social behavior as well as other disorders (Setzer & Duckett, 1994). Most researchers, however, confirm that the advantages of computer games overweight their disadvantages. According to Tzeng (1999), children may obtain many benefits when playing games. Games typically elicit complete mental involvement from participants, have concrete goals and rules that help focus attention and direct action, require a high degree of player interaction, provide immediate feedback, incorporate variable levels of challenge to keep players involved as their skills increase, enhance recall and transfer of knowledge, and evoke mental imagery that facilitates the retention of educational materials embedded in the game (Quinn, 1997). Klein and Frettag (1991) noted that the essential elements of computer games such as 3D sound, graphics, and story telling, provide a powerful sense of interactivity and control, while immersing the user with the information or content of the game.

Researchers in technology-based learning environment have found that playing computer games contributes to the enhancement of thinking skills. Games could significantly facilitate children's cognitive processes such as making inferences and logical thinking skills. The researchers assert that incorporating games into an instructional design improves students` skills in practical reasoning, making inferences and engaging in inductive reasoning (Pillay, Brownlee, and Wills, 1999). Moreover, computer games enhance higher order thinking skills through the combination of visual and interactive learning experience that includes sounds, pleasant signs, applause, and other forms (Pogrow, 1994; Arnas, 2002). They often include problems that develop critical thinking defined as the analysis and evaluation of information in order to determine logical steps that lead to concrete conclusions (Doolittle, 1995). Visualisation, which is an important element of computer games, is a key cognitive strategy that plays an important role in discovery and problem solving (Betz, 1995-1996). In addition, many of the problems presented in games require students to form mental representations and manipulations of objects or elements (Amory, Naicker, Uincent, and Adams, 1999).

Studies of expert and novice computer games players (Pillay et al, 1999) suggest that in moving from a novice to an expert player, cognitive processes may be enhanced. The studies revelead that expert players highly organised knowledge structures. Since the recreational computer games players would need a highly organised knowledge structure in their internal representations, these would help them efficiently deploy knowledge and make meaningful inferences when confronted with situations. These studies suggest that experts have efficient cuing and linking mechanisms in their knowledge stuctures. Playing recreational computer games involves encoding explicit information presented in the game and consructing internal representation. Initially, novice players would be reliant on surface features in their knowledge construction that, over time, would presumably become organized knowledge structures when prompted with certain games situations.

It is undeniable that playing games requires skills children need in order to simultaneously and selectively attend to a number of different pieces of information displayed on the screen (Fromme, 2003). Often this takes place under specific time constrains that restrict the extent of exploration one can afford (Amory, et al, 1999). In addition, when a student plays recreational games, it is necessary for him to use a mixture of his own idea and technical concepts in the simulation which makes him navigate through the given information and make connections between information from different scenes. Such a process requires maintaining temporal information in memory as one moves between screens (Gokhale,2002).

Playing computer games requires many skills such as processing information explicitly in graphics in addition to skills of processing complex mental representations such as those found in most problem-solving tasks. Studies conducted by Pillay, Brownlee, and Wills (1999) indicated that while playing computer games, players practiced complex cognitive processes such as interpreting explicit and implicit information, inductive reasoning, metacognitive analysis, and problem solving. All of these cognitive processes suggest that playing computer games can benefit the development of thinking skills that could not necessarily be encouraged easily through other media. The British Communications and Technology Agency (BECTA,2001) funded a pilot study in computer games in education. One of the conclusions of the study was that students can receive immediate feedback on their actions and decisions as well as invite exploration and experimentation through games.

The need to prepare students for the Information Age is a recurring theme in the Educational Reform Movement. The arrival of the Information Age has made the acquisition of higher-order thinking skills among learners crucial, and developing these skills has become a national goal in many countries. Many researchers (e.g, Pogrow, 1994; Scott, Cole, Engel, 1992) argue that for students to be competitive in years to come, teachers need to be able to provide them with cognitive strategies that will enable them to think critically, make decisions, and solve problems.

Educators believe that knowledge of the basics is no longer sufficient in the ever-changing society; therefore, thinking skills have become at the top of their agendas. Harris (1999) states that generations of the information age must learn not only how to access information, but more importantly how to manage, analyze, critique, cross-reference, and transform it into usable knowledge. These high level skills of thinking are best acquired when learners construct knowledge rather than passively ingest information (Hopson, 1998)

The above review of literature suggests that computer games can play an effective role in enhancing thinking skills if incorporated into the instructional practices. Not only can computer games enhance basic skills of thinking, but also they can enhance higher order levels of thinking, which this study examines.

Through reviewing the literature, the researcher has not encountered any empirical study addressing this issue in the Jordanian setup in spite of the ongoing efforts that the Jordanian government has put to utilize computer in education and, in spite of the educational policies in Jordan that tend to make the development of higher order thinking skills among its main priorities.

Higher-order thinking essentially means thinking that takes place in the higher-levels of the hierarchy of cognitive processing. Bloom's Taxonomy is the most widely accepted hierarchical arrangement of this sort in education and it can be viewed as a continuum of thinking skills starting with knowledge-level thinking and moving eventually to an evaluation-level of thinking.

Research Question: This study addressed the following research question:

Does using computer games as an instuctional tool contribute to the development of higher order thinking skills among third grade students in Jordan?

Significance of the study: This study will enrich the limited research on the use of computer in the elementary stage in general and the use of computer games in particular to enhance the development of the students' higher order thinking skills. What makes this study more important is the popularity of computer games among children and the high probability of utilizing them for the benefit of school-age children. It will ultimately provide data that may be used to make the use of computers in the elementary school more effective. The results of the study will also be useful for educators who are formulating technology plans in Jordan and in other Arab countries as well.

Operational Definitions of Terms: In this study, key terms are defined as follows:

Higher order thinking skills: They are the cognitive skills that allow student to answer questions that require him/her to function at the levels of Analysis, Synthesis, and Evaluation according to Bloom's Taxonomy of the cognitive domain. The questions were derived from the content of three lessons in the third grade' textbooks of math, science, and Arabic language in Jordan.

Analysis: It is the ability of the third grade student to answer questions in math, science, and Arabic, and to break down a whole object or idea into its component parts.

Synthesis: It is the third grade students' ability to answer questions in math, science, and Arabic language that require him/ her to combine component parts or ideas to create a whole or a solution.

Evaluation: A third grade student's ability to answer questions that require him/her to make quantitative and qualitative judgments in math, science, and Arabic.

Instructional Computer Games: Three instructional computer games were used in this study chosen from a group called "School of Digital Heroes". The games were presented to students in Arabic and covered a content of three lessons in the Arabic Language, Mathematics, and science textbooks of the third grade in Jordan.

Methods

Subjects: A school was randomly chosen out of four schools in Irbid in north Jordan that have computer labs and more than one section of the third grade. Two sections consisting of 63 students were randomly chosen from that school; one of the selected sections which consisted of 32 students was assigned to the experimental group, and the other section that consisted of 31 students was assigned to the control group.

Materials: The following materials were used in the study:

Instructional computer games: Twelve instructional games representing the Arabic language, mathematics, and science were selected. All the games were given to a jury of six experts in the field of Elementary Education and Educational Psychology at the college of Education at Yarmouk University. The experts were asked to choose three games, one in each subject, they thought they were the most appropriate for the sample of the study. Most experts (80%) chose three instructional games from a group Called "School of Digital Heroes"; these games were part of an electronic textbook designed by an educational technology company in Jordan.

The three games were designed in the Arabic language and were part of electronic textbooks of three subjects; namely the Arabic Language, Science, and Mathematics. The textbooks were designed in a way so that most of their activities can be used as Instructional games. Games in these textbooks were used as a tool to facilitate learning and make it more enjoyable. This may enable students to play and learn simultaneously, as instructional games may help them learn through creating situations in which learning is associated with fun, excitement and suspense. The games used are the following:

A. Digital gate: This game represents the content of the math lesson (The multiplication). The games used to encourage mathematical and strategic thinking. At the beginning the student has to select a number from one to ten. After selecting the

number, the student is given a math problem. Each problem has three answers; only one of them is correct. Every time the student chooses the correct answer, it will help the children in the game move a step toward the digital gate and players will get reinforcement in the form of music, cheering sounds, and clapping. If a wrong answer is given, the digital gate shut down; going through the gate is forbidden, and the student has to start the game again.

B. Digital monsters: this game covers the content of the science lesson (Space Invasion). In this game the student is asked to help digital kids in their fight with monsters. The student has to think of different ways to provide help. Answering questions given to him about the content of the lesson is the most effective way to kill the monster. Each time a student gives a correct answer, one of the monsters is killed. The student is allowed to give the wrong answer three times, after that he starts the game from the lowest level. After finishing the game the student gets reinforcement and saves the world from the monsters.

C. Hunting Pokemons: This game covers an Arabic lesson (Cooperation) from the Arabic Language textbook. In this game, a player walks through a maze to reach and hunt a Pokemon at the end of the maze. Player students have to think of ways to hunt Pokemons and all the ways require an understanding of the content of the lessons. A student moves one step forward if he gives a correct answer. If he gives a wrong answer, he has to start over the games and meets new questions. When he answers all the questions, the student reaches the end of the maze and catches the Pokemon.

Higher Order Thinking Skills Test: An achievement test was constructed to measure higher order thinking skills. The test that covered the content in the instuctional games was derived from science, Math, and Arabic textbooks. From each subject a lesson was coverd. The lessons were "cooperation" from the Arabic Language textbook, "multiplication" from the Math textbook, and "Space Invasion" from the science textbook The achievement test consisted of thirty-multiple choice items, each item has three alternatives. Each correct answer was given one point, while the incorrect answer was given zero. The thirty items were distributed equally on the three levels of higher order thinking (analysis, senthysis, and evaluation).

In the first draft, the achievement test contained 45 items; it was given to a jury of 12 experts in the field of Elementary Education and Educational Psychology. The experts were asked to determine to which level of thinking each item belongs and the appropriateness of each item to the cognitive level of the students. After making the modifications and changes they requested, the researcher kept 30 items that constitute the final version of the test. The items that were kept are the items that 80% of the experts agreed on. Here is an example on each level of thinking from the three lessons which were translated from Arabic to English:

Analysis level:

- The similarity between the actual moon and the artificial moon is:

A. Both of them are lighting.
D. Both them rotate around the earth.
E. No human beings live in both.

Synthesis level:

A family has four children all of them are in schools; each child needs 12 JDs each year to buy textbooks; how many JDs do children need to buy in three years?

A. 84
B. 96
C. 144

Evaluation Level: What would happen to the Arab countries if they united and became one state?

A. Their problems would increase.
B. They would become more powerful.
C. They would become weak.

To determine the test reliability, the researcher used Kudar Richardson 20 formula, which revealed a reliability coefficient of 0.72.

Procedures: Two graduate students from the college of education at Yarmouk University helped the researcher in training the experimental group to gain the basic skills in using the computer, in particular the skills of using the mouse, which is the main skill students need to play computer games. The subjects were trained for a week (an hour a day) working with Microsoft Paint and playing Solitaire. The students in the experimental group were taught the three lessons by their teacher using instructional computer games in the computer lab, simultaneously with their peers in the control group, who studied the same content in their classroom using the traditional method of teaching which is the method of teaching that students used to. Each lesson was taught in one day. After studying the content, both groups took the post-test.

Results and Discussion: To answer the research question, the researcher calculated the means and standard deviations of students' performance on the higher order thinking skills test and presented them in Table (1)

Table (1): Means and standard deviations of the subjects' performance on the post test

Level of thinking	Groups					
	Experimental			Control		
	Mean	SD	N	Mean	SD	N
Analysis	8.8125	.8206	32	7.9032	.7463	31
Synthesis	8.6563	.7453	32	7.2903	.9379	31
Evaluation	7.5000	.7184	32	6.8065	.7033	31

Table (1) shows differences in the achievement between the control and the experimental groups. To determine the significance of these differences and since the study is qusi-experimental, multivariate analysis of co-variance (Mancova) was conducted and the results are represented in Table (2)

Table (2): Multivariate analysis of covariance (Mancova) of students' performance on the posttest

Effect	Multi variate Test	Value	F	Hypothe-sis df	Error df	Sig.	Eta Squared
PANALYSI	Wilks' Lambda	0.55	14.97	3	56	0.00	44.5%
PSYNTHES	Wilks' Lambda	0.74	6.67	3	56	0.00	26.3%
PEVALUAT	Wilks' Lambda	0.76	5.93	3	56	0.00	24.1%
GROUP	Hotelling's Trace	1.78	33.26	3	56	0.00	64.0%

Table (2) shows that there is a significant difference between the two groups in their performance at different levels of higher order thinking skills. To determine which levels of thinking, the difference Analysis of covariance was conducted. The results are presented in Table (3).

Table (3): Analysis of covariance (Ancova) for students' performance on the three levels of thinking skills

Effect	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared
Pre-ANALYSI	ANALYSIS	14.566	1	14.566	45.385	0.000	43.9%
Pre-SYNTHES	SYNTHESIS	7.081	1	7.081	16.884	0.000	22.5%
Pre-EVALUAT	EVALUATION	6.322	1	6.322	17.905	0.000	23.6%
GROUPS	ANALYSIS	12.081	1	12.081	37.642	0.000	39.4%
	SYNTHESIS	30.333	1	30.333	72.325	0.000	55.5%
	EVALUATION	7.457	1	7.457	21.119	0.000	26.7%
Error	ANALYSIS	18.614	58	0.321			
	SYNTHESIS	24.325	58	0.419			
	EVALUATION	20.478	58	0.353			
Total	ANALYSIS	50.603	62				
	SYNTHESIS	72.984	62				
	EVALUATION	38.413	62				

Table (3) shows significant differences between the experimental group and the control group on all three levels of thinking skills, in favor of the experimental group (see Table 1).

This result suggests that using computer games in the classroom can enhance the levels of thinking skills. The result can be attributed to many factors. One of the main factors is the fact that playing games requires students to involve mentally in the game. This involvement happened through manipulating objects and making inferences and decisions. More than that, the game itself represents an interactive learning experience, and incorporating computer games in teaching practices can make learning more entertaining and more fun. These results, also, support the ideas of Klein and Frettag (1991) who argued that the fantasy fulfillment elements of computer games allow players to become more excited and more adventurous and controlling their experience. This kind of experience allows students make extra effort more than the effort they make in the traditional learning situation. Computer games can also provide students with more challenges that entertain and engage the mind differently than the ones provided in books and other traditional media. The challenge may be how to solve puzzles or how to get the next level of a game. These activities required students to make an analysis and evaluation in order to determine logical steps. Incorporating computer games in the classroom instruction represents a new strategy of teaching, a strategy that is close to real and favorable life experience.

In early grades of elementary schools most teachers tend to use the traditional methods of teaching. This environment, where teachers dispense information, has greatly inhibited students` opportunities to think. In addition, most curriculum in early grades focuses on memorizing information rather than analyzing, synthesizing, and evaluating information. This environment caused difficulty in solving problems that require higher order thinking skills among students. All the activities that students get involved in will make students active learners and give them a chance to make decisions and take the responsibilities for these decisions.

The rationale for using games is that they help create a classroom atmosphere in which students at various levels of ability can collaborate in order to promote interest, motivation, enhancement of critical thinking and decision-making skills, and retention of information (BECTA, 2001). Computer games give enough freedom to students to search, discover, and learn to use self-activity (Alfaqih, 1995)

There are many elements in computer games that can make games an effective teaching strategy and enhance thinking skills. One of the main elements that helped the experimental group to perform higher than the control group is the adequate pay off they received when they accomplished a difficult task successfully. The rewards that students got came in different forms like sounds, pleasant signs, applause, and other forms. This element, as mentioned by Aranas (2002), can make learning experience have a tremendous effect on students` performance and improve their higher order thinking skills. Besides, incorporating computer games into teaching practices can make learning experience more interactive, provide higher levels of activity, and provide visual and audio themes and effects. Amory, Naicker, Vincent, and Adams (1999) suggested that a combination of these elements could make classroom learning exciting and fun.

Conclusion and recommendations: The results of the study revealed that using computer games as an instructional tool can contribute significantly to the enhancement of all levels of higher order thinking skills: analysis, synthesis, and evaluation. The results indicated that when students enjoy and love what they are doing, both their focus and attention to their tasks will increases, which eventually affects their thinking skills positively.

Since elementary schools in Jordan are highly equipped with computers, teachers are recommended to take advantage of this instructional tool to make their methods of teaching more effective. The focus of utilizing computers in Jordan is still limited to help students in acquiring basic computer skills. The need for teachers to be well-trained in incorporating computer games in their instructional practices seems to

be important in order to have them contribute to achieving the national goal in Jordan, namely preparing a new generation with high levels of thinking skills. The results of the study should encourage education decision makers in Jordan to put forward national plans to train teachers to be highly qualified in utilizing computers in all aspects of students' learning and integrate computer games into all subjects.

Since the relevant research indicated that using instructional games is the most effective strategy in elementary schools and the results of the present study support this idea, teachers in elementary classrooms are advised to activate this strategy and use computers effectively in designing and representing these games.

Finally, since the Arabic literature lacks the research in computer games and its utilization in all aspects of the children's development, the researcher recommends conducting other studies examining using computer games in developing other skills among learners and in teaching different subjects in different levels.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 149-153

The Use of Arabic in Classes of English as a Foreign Language (EFL)

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Received Date:Dec. 5, 2004 Accepted Date: Feb. 24 , 2005

***Abstract**: The purpose of this study was to investigate the effect of using Arabic in EFL classes. To achieve this purpose, the researchers distributed a questionnaire about the use of Arabic in EFL classes to the teachers and students of ordinary-level English at Rawdet Al-Ma'aref School in Amman, Jordan. The results of the study showed that 100% of the students and 90% of the teachers felt that Arabic should be used in their EFL classes. The respondents emphasized the fact that cultural and religious concepts should be taught by referring to Arabic in EFL classes. A noticeable percentage (85%) of students and (75%) of teachers agreed that Arabic should necessarily be used to introduce grammatical rules. The findings of the study should be taken into consideration by teachers of English as a foreign language as well as textbooks writers and curricula designers.(**Keywords:** EFL, Arabic, English, Classes)*

استعمال اللغة العربية في تدريس اللغة الانجليزية لغة أجنبية

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ملخص: هدفت هذه الدرا سة الى تقصي أثر استعمال اللغة العربية في تدريس اللغة الانجليزية لغة أجنبية. ولتحقيق هذا الهدف وزّع الباحثان استبانه تحتوي على أبرز استراتيجيات استعمال اللغة الأم في تدريس اللغة الأجنبية على طلبة اللغة الانجليزية ومعلميها في مدرسة المعارف في عمان –الأردن، بيّنت هذه الدراسة أن الطلبة جميعهم ونسبة عالية (90%) من المعلمين شعروا بوجوب استخدام اللغة العربية في حصص اللغة الانجليزية مؤكدين أثر استخدام اللغة الأم في توضيح المفاهيم الثقافية والدينية، وأن نسبة 85% من الطلبة و 75% من المعلمين قالوا بضرورة استخدام اللغة العربية في حصص اللغة الإنجليزية لتوضيح المفاهيم الصعبة وقواعد هذه اللغة. وقد أوصى الباحثان بضرورة أخذ نتائج الدرا سة بعين الاعتبار في تدريس اللغة الانجليزية لغة أجنبية، وفي تصميم المناهج والكتب المدرسية. (**الكلمات المفتاحية** : العربية، تدريس ، الانجليزية ، لغة أجنبية)

Introduction: Where there was once a consensus on the "right" way to teach foreign languages, many teachers now share the belief that a single right way does not exist. It is certainly true that no comparative study has consistently demonstrated the superiority of one method over another for all teachers, all students and all settings (Gina, 1994). Originators of most of the methods aim to enable students to communicate using the target language. However, many methodologists emphasize the importance of the first language (L1) in understanding the second language (L2) (Lado,1964and 1978; Khalil,1985; Hamdallah,1990; Tushyeh,1988; Kharma,1987; William,1999; Alexander,1994; Asher,1982; Mahmoud,1997; Mukattash,1986; and Bawcom,2002, among others).

A contrastive analysis (CA) between the students' native language and the target language will reveal the area where a teacher should expect the most interference. CA is a comparison of two languages for the purpose of predicting errors made by the learners of a target language and designing teaching materials that will take account of the anticipated errors.

CA has application in predicting and diagnosing a proportion of the errors made by L2 learners with a common L1 and in the design of testing instruments for such learners.

There seems then to be three things that CA can predict: it can predict what aspects will cause problems; it can predict difficulty; and it can predict errors.

As far as course design is concerned, CA also carries suggestions about selecting target language items (what to teach) and grading these items (when to teach). The learner, for example, must be allowed and encouraged to transfer his suitable L1 knowledge to L 2 usage. This means that those L 2 structures that match L1 structures must constitute part of the materials.

Lado (1964) stated that a student who learns a foreign language will find some of its features quite easy and others extremely difficult. The features that are similar to his native language will be simple for him while those which are different will be difficult. Lado added that since it is a universal principle of education that learning should proceed from the simple to the difficult, simple elements of L2 should be taught first.

Native language translation is used to make the meaning of the dialogue between the teacher and the students clear. The teacher also uses mother tongue in class when necessary. As the course proceeds, the

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teacher uses the native language less and less (Lozanov, 1982).

Students' security is initially enhanced by using their native language. Native language equivalents to the target language words are given to make their meanings clear and to help students to combine target language words in different ways to create new sentences (McLaughlin, 2003). In later steps, the target language is used interestingly. The native language can also be used to give instructions, especially at the beginning level of proficiency during the feedback sessions. More important, the knowledge students already possess of their native language can be exploited by the teacher of the target language (Gattego, 1972). The teacher assumes that he/she can build upon this existing knowledge to introduce the new sounds in the target language (McLaughlin, 2003).

Arabic-speaking students in the first and second secondary classes leave school with poor performance in spoken as well as written English. This was sounded at the 1995 summer course held jointly by the Palestinian Ministry of Education and Higher Education and Harvard Graduate School of Education. Lecturers and participants agreed that Arabic-speaking Palestinian learners of English should have adequate knowledge of the relationship between their native language and English in order to understand it very well and to overcome the errors that they make in writing and speaking it (Mahmoud, 1997).

Among a considerable number of professionals in the field of second language acquisition (SLA), there appears to be an increasing support that the use of the first language (L1) has a necessary and facilitating role in the classroom of English as a second/foreign language (ESL/EFL). The exploration of the problems in teaching and learning English together with their causes will surely help teachers and learners of English. Corder (1967:167), for instance, noted that "A learner's errors are significant in that they provide the researcher with evidence of how language is learned or acquired and what strategies or procedures the learners are employing in the discovery of the language."

In the process of learning a language, learners make errors many of which are predictable. These errors provide useful insight in understanding the complex process of second language acquisition. As confirmed by Corder (1967), Nemser (1971), Selinker (1969 and 1972), a lot of useful things can be learned from the students' errors; they supply learners and teachers with important data in the construction of a theory of language acquisition.

Thompson-Panos and Thomas-Ruzic (1983) stated that a better and more comprehensive understanding of the language background of Arab learners can help specialists in better addressing the special needs of the learners through supplying them with extra appropriate exercises, drills and questions.

Taylor (1975) described a model of second language learning which considered both processes of developing learning strategies, such as simplification and overgeneralization of target language rules and language negative transfer, as two manifestations of the same psychological processes; that is, learners rely on prior learning and knowledge to simplify and facilitate new learning.

A second language can be learned appropriately through raising awareness to the similarities and differences between L1 and L2. Besides, using L1 in L2 classes has made learning L2 appear to be less of a threat to its learners. The use of L1 in L2 classes encourages students to learn more about L2. Additionally, the learning of L1 may result in increasing receptivity to the learning of L2 (William, 1999).

In a provocative article, Auerbach (1993) gives a socio-political rationale for the use of L1 in ESL classrooms. In her article, she emphasizes the role of the ideological origins and thus she recommends starting the L2 classes with some of L1 which has the power to enrich the learners' sense of security and the validation of lived experiences.

A learner of L2 might feel that his /her identity threatened if he/she is encouraged to ignore his/her native language (Hopkins, 1988). Both Atkinson (1987) and Auerbach (1993) provide learners a well as teachers of L2 with appropriate situations for the use of L1 in L2 classes. Both emphasize the strong recommendation of using L1 in L2 classes when dealing with presentation of rules governing grammar, phonology, morphology and spelling. Likewise, they also recommend referring to L1 when dealing with cross-cultural issues. According to Terence Doyle (1997), sometimes, up to 90% of ESL class time may be dedicated to the use of L1.

Purpose of the study: The ultimate aim of this study is to find out if using L1 (Arabic) in L2 (English) classes would facilitate or hinder the teaching-learning process from teachers' and students' perspectives. In compliance with this purpose, the study seeks to answer the following questions:

1. How important is using Arabic in English classes for facilitating learning from students' perspectives?
2. How important is using Arabic in English classes for facilitating teaching from teachers' perspectives?
3. In what areas can using Arabic in English classes facilitate the teaching –learning process?

Subjects of the Study: The subjects of the study were 600 male students and 30 teachers of English at Rawdit Al-Ma'aarif School in Amman. Their grades ranged between the 5th and the 12th (Tawjihi) grades.

Instrument of the Study: A questionnaire was used for data collection. Students and teachers were asked to answer the questionnaire which contained questions about the effect of using Arabic in the English classes. The questionnaire consisted of seven questions: the first was a "Yes/No" question which asked the subjects of the study if they thought Arabic should be used in their EFL classes. The second question asked how much they

thought Arabic should be used in their EFL classes. The third question asked about the purposes of using Arabic in EFL classes. The fourth question asked about the percentage of time Arabic should be used in EFL classes. The fifth question asked how often they thought Arabic should be used in their EFL classes. The sixth question asked if using Arabic in EFL classes would help teachers to teach better and students to learn better. The seventh question was directed to the teachers, and it asked them to list the areas in which they thought Arabic should be used in EFL classes. The complete questionnaire is shown under "Results of the Study" below.

Validity of the Questionnaire: To ensure that the content of the questionnaire is valid, it was handed to a jury of five professional faculty members and school teachers majoring in teaching English as a foreign language. The members of the jury were asked to evaluate the appropriateness of the questionnaire to the whole purpose of the study. Consequently, they sent letters in which they ensured the validity of the questionnaire and recommended some modifications which were taken into consideration.

Results of the Study: The purpose of this study was to find out if the use of Arabic in English classes would facilitate the teaching-learning process from the teachers' and the students' perspectives. Following is the questionnaire with a table showing the subjects' responses to each of its questions:

1. In your opinion, do you think that Arabic should be used in the EFL classes?

Table 1: Subjects' Perspectives of Using Arabic in EFL Classes

Response	Students	Teachers
Yes	100%	90%
No	0%	10%

2. How much do you think Arabic should be used in the EFL classes?

Table 2: Subjects' Perspectives of the Amount of Time of Using Arabic in EFL Classes

Response	Students	Teachers
Not at all	0%	0%
A little	35%	50%
Sometimes	50%	40%
A lot	15%	10%

3. For what purpose do you think it is appropriate to use Arabic in the EFL classes?

Table 3: Subjects' Perspectives of the Purposes of Using Arabic in EFL Classes

Item	Students	Teachers
To explain difficult cultural and religious concepts	90%	80%
To introduce new material, especially grammatical rules	85%	75%
To summarize material already covered	4%	3%
To Test	10%	0%
To joke around with students	15%	10%
To help students feel more comfortable and confident	13%	6%
To check for comprehension	30%	11%
To carry out small group work	3%	2%
To explain the relationship between English and Arabic	N/A	3%
To define new vocabulary items	22%	13%

4. What percentage of time do you think Arabic should be used in the EFL classes?

Table 4: Subjects' Perspectives of the Percentage of the Time of Using Arabic in EFL Classes

Percentage of Time	Students	Teachers
0%	0%	0%
10%	25%	35%
20%	18%	15%
30%	20%	35%
40%	11%	10%
50%	8%	6%
60%	4%	5%
70%	3%	4%
80%	2%	0%
90%	1%	0%

5. How often do you think Arabic should be used in the EFL classes?

Table 5: Subjects' Perspectives of the Frequency of Using Arabic in EFL Classes

Response	Teachers	Students
Never	0%	0%
Very rarely	0%	0%
Sometimes	55%	35%
Fairly Frequently	45%	65%

6. Do you think that using Arabic in your EFL classes helps teachers to teach and students to learn English better?

Table 6: Subjects' Perspectives if Using Arabic in EFL Classes Helps Teachers and Students

Response	Teachers	Students
Not at All	0%	0%
Somehow	10%	15%
A Little	25%	20%
Fairly Much	30%	25%
Very Much	35%	40%

7. In which areas do you think Arabic should be used in EFL classes? (For Teachers Only: List as many areas as you want)

_____
_____
_____
_____
_____
_____
_____.

In response to this question, teachers listed the following areas in which Arabic can be used in EFL classes:

1. Eliciting language, especially when dealing with abstract nouns that are difficult to be illustrated by pictures or by using sentences. Sometimes teachers are not good at drawing or acting, thus the use of Arabic becomes necessary
2. Checking and assessing listening or reading comprehension.
3. Giving complex instructions to students of basic levels.
4. Co-operating in groups: Learners compare, analyze and correct answers to questions, exercises, drills and other English activities. In this respect, Arabic plays the role of intrinsic motivation that is based on the needs and desires of students.
5. Explaining classroom techniques at basic levels.

6. Using translation to highlight recently taught language items.
7. Checking for tenses: This is very useful in composition and oral activities; if students say or write something in English that does not make sense, the teacher helps them to translate it into Arabic to realize their errors.
8. Testing: Translation items can be useful in testing mastery of forms and meaning.
9. Developing circumlocutory strategies: When students do not know how to say or write something in English, the teacher may ask them to think of different ways to say something in Arabic, which may be easier to translate.
10. Presentation of rules governing grammar, phonology, morphology, and spelling. This area is rich in aspects that include similarities between English and Arabic.
11. Discussing cross cultural issues.

Discussion: The results of this study showed that all students and 90% of their teachers felt that Arabic should be used in their EFL classes. Most of them emphasized the fact that difficult concepts, especially cultural and religious concepts, should be taught in EFL classes by referring to Arabic. Almost a similar percentage of weak students like to have Arabic in their grammar lessons because they felt that Arabic facilitated their learning of English. In almost all the cases of using Arabic in EFL classes, students responded notably higher than teachers on almost all the items listed in the questionnaire.

The findings of the study showed that in EFL classes, Arabic should be used to some degree. The respondents among the students felt that there are clear cases where Arabic facilitated their comprehension of what was happening in the classroom.

Almost 70% of the students preferred the use of Arabic in their EFL classes sometimes or often. This percentage was almost similar to Doyle's (1997), but higher than William's (1999). Most of the teachers agreed that using Arabic whenever necessary or convenient helped them establish a rapport with their students.

All teachers without exception emphasized the use of Arabic when students were exposed to socio-cultural English texts or issues. This finding is closely related to William's (1999). The researchers consider the lack of using Arabic in certain religious, cultural or political issues and abstract nouns as an overlooking of students' identity, and this in turn will increase their hatred to the foreign language.

Conclusion and Recommendations: There is a lot of harmony between this study and other studies which emphasize the importance of L1 and its great effect in understanding L2. (Lado, 1964; Khalil, 1985; Hamdallah, 1990; Tushyeh, 1988; Kharma, 1987; Kharma and Hajjaj, 1989; Khangi, 2002; Mukattash, 1986; Cambridge and Merseyside (1998); Mahmoud, 1997 and 2003, among others).

To those who oppose the researchers' point of view by saying that EFL classes are the only limited vehicle through which students can practice their English with their teachers, the researchers can say that there are other media via which students can use English: Radio, TV and Computer. This does not mean that the researchers are not aware of the fact that English should be looked upon as the vehicle of communication in the classroom, but wise, limited and directed using of Arabic in EFL classes can be useful to both teachers and students. Based on the results of this study, the researchers reaffirm the importance of the following points:

1. In EFL classes, there is a need to explain the main differences and similarities between English and Arabic. These similarities and differences help both teachers and students to get deeper understanding of the target language.
2. The designers of the English textbooks should provide students with material that covers exercises that demand translation from English into Arabic and vice versa.
3. In English classes there is a need to refer to Arabic so as to compare and contrast some religious and cultural concepts.

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Jordan Journal of Educational Sciences Vol. 1, No. 2, pp 155-165

An Analysis of Learners' Attitudes toward Online Interaction in a Web-based Course

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Received Date:Dece. 12, 2003 Accepted Date: May. 25, 2005

Abstract: *The purpose of this study was to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' attitudes, the study attempts to find whether online interaction promotes learning among learners. In view of that, the study focuses on the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course. The study surveyed 440 students who were enrolled in an accounting Web-based course offered by the Department of Accounting at the Hashemite University. Students were taught in a flexible mode of instruction. A Likert-type instrument was designed to collect information about learner's attitudes toward online interaction in the Web-based course. In addition to descriptive analyses, a five-way ANOVA was conducted to answer the research questions in this study. The findings of the study indicated that overall students positively perceived that online interaction in the Web-based course promoted learning. Gender, age, GPA, and years of experience with the Internet were not significant factors. However, there were significant differences among levels of learners' frequency of accessing the Web-based course in regard to their attitudes toward online interaction. In general, learners who had accessed the Web-based course more frequently indicated significantly higher positive attitudes toward online interaction. In light of these findings, this study recommends that students enrolled in Web-based courses need to be encouraged to engage in all means of online interaction available in these courses in order to promote their learning.(**Keywords:** Web-based instruction; Electronic learning; Online interaction; Internet-based instruction; Internet)*

تحليل إتجاهات المتعلمين نحو التفاعل الإلكتروني في مساق مبني على الإنترنت

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ملخص: *هدفت هذه الدراسة إلى قياس إتجاهات الطلبة نحو التفاعل الإلكتروني في مساق مبني على الإنترنت ، وبالتالي فقد سعت هذه الدراسة إلى تحديد ما إذا كان التفاعل الإلكتروني يعززتعلم هؤلاء الطلبة. وما إذا كان لعوامل الجنس والعمر والمعدل التراكمي وسنوات الخبرة السابقة في استخدام الإنترنت ومدى التردد على الموقع الإلكتروني للمساق الأثر في إتجاهات الطلبة نحو التفاعل الإلكتروني. شملت هذه الدراسة 440 طالباً ممن سجلوا مساق مبادىء محاسبة والذي طور الكترونياً وطرح عبر الانترنت . لقد عرض هذا المساق من قبل قسم المحاسبة في الجامعة الهاشمية ودرس بإستخدام أسلوب التعليم المختلط والذي يجمع التعليم التقليدي والتعليم الالكتروني معاً . وتم إعداد استبانة مطورة بإستخدام مقياس ليكرت لجمع البيانات اللازمة حول اتجاهات الطلبة نحو التفاعل الإلكتروني، وتم استخدام التحليل الوصفي وتحليل التباين الخماسي لتحليل هذه البيانات وللاجابة على أسئلة الدراسة. جاءت نتائج الدراسة لتظهر أن الطلبة اعتقدوا أن التفاعل الإلكتروني عزز تعلمهم. وأن ليس لعوامل الجنس والعمر والمعدل التراكمي وسنوات الخبرة السابقة في إستخدام الانترنت اثراً ملحوظاً على اتجاهاتهم نحو التفاعل الإلكتروني. وأظهرت النتائج أيضاً وجود فروق دالة احصائياً بين مستويات مدى تردد الطلبة على الموقع الإلكتروني بالنسبة لاتجاهاتهم نحو التفاعل الإلكتروني. وبشكل عام فإن الطلبة الذين ترددوا على موقع المساق بشكل أكبر هم الذين أبدوا اتجاهات ايجابية أكبر نحو التفاعل الإلكتروني. في ضوء هذه النتائج توصي الدراسة بضرورة تشجيع الطلبة المسجلين في المساقات المبنية على الإنترنت على الإنخراط في كل وسائل التفاعل الإلكتروني المتاحة في هذه المساقات لتعزيز تعلمهم.* (**الكلمات المفتاحية:** التعليم المبني على شبكة المعلومات، التعليم الالكتروني، التعليم بالإنترنت).

Introduction : Over the last decade, online instruction has become an integral part of the education agenda around the world. It uses the Internet and other information technologies to create educational experiences for learners (Horton, 2001). The importance of online instruction in education, especially higher education, springs from the fact that it offers a flexible educational environment, where instruction can happen anytime, anywhere, and increasingly, on-demand.

Several studies indicated that students taking online courses have similar test scores as students participating in traditional courses. For instance, studies conducted by Capper & Fletcher (1996), Moore & Thompson (1997), Morrissey (1998), Bradford (1999), Paskey (2001), Parker & Gemino (2001), Benbunan-Fich, Hiltz, & Turoff (2001), Tacker (2001), and Lynch (2002) to compare the effectiveness of online courses to that of face-to-face traditional courses led to the conclusion that online education is as effective as traditional classroom education.

Another study conducted by Navarro & Shoemaker (2000) concluded that online learners learn as well as or sometimes better than traditional learners, regardless of gender, ethnicity and academic background. Moreover, Hartman, Dziuban, & Moska (2000) found that in an

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Asynchronous Learning Network (ALN) course there were lower withdrawal rates and higher success rates. Therefore, online instruction can be seen as a means of improving productivity, efficiency and interaction (Weller, 2002). Online interaction was the concern of the current study.

Online interaction among learners, between the learners and the instructors, and between the learners and the course content in Web-based classrooms differs substantially from that in traditional classrooms (Thurmond, 2003). Moore and Kearsely (1996) discussed three types of interaction which exist in Web-based courses: learner-content interaction, learner-instructor interaction, and learner-learner interaction. Much of the learner-content interaction happens through using a hypermedia text. Accessing content, displayed on Web-pages designed by the instructor, links embedded in these content Web-pages, and other Web-sites discovered by learners are considered part of learning (Thurmond, 2003). Learner-content interaction also happens through simulations, problem solving, testing, and experiential tasks. Learner-learner and learner-instructor interactions can be created through email, threaded discussions, chat, and conferencing (Marks, 1998).

In Web-based courses, online interaction is important to the learning process. According to Driscoll (1998), online interaction helps learners to develop application, analysis, synthesis, and evaluation skills. It also promotes diverse viewpoints and alternative ways of looking at problems (Driscoll, 1998). A major challenge for researchers and instructors is, therefore, to investigate online interaction and examine its effectiveness in promoting learning.

The purpose of this study was to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' attitudes, the study made an effort to find whether online interaction promotes learning among learners. In view of that, the study focused on the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course to test whether these variables are significant factors in learners' attitudes toward online interaction.

Statement of the Problem: Because instructional delivery on the Internet in higher education in Jordan is such a new application, there is a dearth of existing body of research. There is a need for basic research in the delivery of web-based courses at the university level in Jordan.

Many educators believe that interaction is an essential component of the learning process. Jaffe (1997) stated that learning is essentially a social process that requires interaction for the purpose of expression, validation, and the development of the self as a knowledgeable learner. Accordingly, a reasonable task is to examine online interaction that occurs in web-based courses. A logical place to start is to survey the pioneering institutions in Jordan that have developed and delivered web-based courses to learn from their experiences and identify their concerns. The Hashemite University has been among the first institutions in Jordan that integrated web-based instruction into its educational settings. Therefore, this study came to explore learners' attitudes toward online interaction in a web-based course offered at the Hashemite University. For a better understanding, the study examined learners' attitudes as reflected by gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course.

Research Questions: This study was designed in an attempt to answer the following questions:

1. What are the attitudes of learners toward online interaction in a Web-based course?
2. Are there any statistically significant differences at (α=0.05) in learners' attitudes toward online interaction in a Web-based course that are due to gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course?

Importance of the Study: The findings of this study should help administrators and faculty in Jordanian institutions address implementation issues related to web-based delivery. The study provides valuable information for administrators on how to enhance the delivery of instruction in web-based courses. Faculty will also gain insights into how online interaction can be used with face-to-face instruction.

The study is evidence of how learners in a web-based course view online interaction and whether their gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course play a role in how they view that interaction.

Limitations and Delimitations: The limitations and delimitations of this study included the following:

1. The target population of the study was limited to students enrolled in the "Accounting Principles (1)" offered by the Department of Accounting at the Hashemite University in the second semester of the academic year 2003-2004.
2. The design of this study was survey research.
3. This study was delimited to the use of a survey instrument as the primary method of gathering data.

Definition of Terms: For the purpose of this study, the following defined terms are required:

Attitude: a learned predisposition to respond in a consistent manner to a given object or situation (Fishbein & Ajzen, 1975).

Web-based courses: courses that are mediated and supported by the attributes and resources of the Internet (Brooks, Nolan, & Gallagher, 2001).

Online interaction: electronic communication in web-based courses (Berge, 1999).

Review of Literature: Online interaction can be addressed through effective communication and discussion. These can be made available through two modes: synchronous and asynchronous. According to

Steiner (1995), synchronous instruction is when learners and instructors participate in instruction simultaneously and in "real-time." Common synchronous methods include chat sessions and video and audio conferencing. In addition to offering immediate communication, synchronous methods have the advantages of providing a greater sense of presence and generating spontaneity (Inglis, Ling, & Joosten, 1999). However, synchronous methods can be difficult to implement, as they may require more sophisticated end-user equipment and a high-speed Internet connection. Moreover, instructors may find it challenging to schedule convenient times for all learners to participate, due to work and/or family commitments, or learners may be in different time zones.

Asynchronous does not require simultaneous participation. Chute et al. (1999) defined asynchronous as "interaction between two or more people that is time-delayed, that is, separated by minutes, hours, or even days" (p. 219). Examples of asynchronous methods include e-mail and discussion forums. These methods are easy to implement and learners can practice at any time convenient for them. Discussion forums are often incorporated into a course to ensure learner participation (O'Reilly & Newton, 2001) and interaction.

Herring (1996) offered three main research issues that are considered the main distinctive characteristics of online communication or interaction: (1) lack of social cues which refers to anonymity created by less obvious social characteristics such as occupation, educational level, gender and race, (2) generation of social norms of interaction which refers to rules of behaviors created by members of an online community, and (3) unique conversational patterns similar to oral communications in many aspects although it uses written format (i.e., concise use of words, simplifying sentences, and emotional expressions). While Ong (1982) suggests that oral communication is different from written format, Condon & Cech (1996) conclude that computer-based synchronous communication does show similar language patterns of oral communication. However, all of the three distinctive characteristics of online communication can either promote or discourage collaboration, depending on contexts (Spears & Lea, 1992).

In the literature, some researchers showed evidence of the effectiveness of online interaction within Web-based courses (COX, 2004). For example, McDonald (2002) emphasized that online education with its group-based instruction and Computer Communication provides an opportunity for new development and understanding in teaching and learning. A study completed by Devlin and James (2003) in Australia concluded that the impact of multimedia and educational technology could provide some indication of improved student learning and interaction skills.

Some other researchers already have begun to look into various types and methods of Internet-based communication tools such as e-mail, chatting, discussion boards and other methods over the past decade (O'Reilly & Newton, 2001). It has been suggested that these Internet-based communication methods afford and limit people's behaviors in many different ways compared to traditional types of communication (e.g., face to face interaction). As mentioned previously, learner-content interaction promotes critical thinking and reasoning skills, and learner-learner and learner-instructor interactions bring about a shared learning environment (Sringam & Greer, 2002). In general, learner-instructor and learner-learner interactions have been found to be particularly useful for forming friendships, offering advice, empathy and encouragement to continue studying in the learning environment, overcoming isolation and engaging in mutual support with peers (O'Reilly & Newton, 2001).

In light of what's mentioned, online interaction available in Web-based courses has many benefits for education. It promotes critical thinking, reasoning skills, diverse viewpoints, and alternative ways of looking at problems. It is also useful for forming friendships, offering advice, empathy and encouragement to continue studying in the learning environment, overcoming isolation, and engaging in mutual support with peers. However, we may wonder whether achieving a satisfactory level of online interaction is linked to any of the learner's characteristics or experience in using the Internet.

Many studies (Jiang & Shrader, 2001; Koohang, 2004; Koohang & Durante, 2003; Lucy, 1993; Meisel & Marks, 1999; Naert, 1997) investigated the relationships between learners' perceptions toward using online instruction and variables like gender, age, Grade-Point Average (GPA), users' experience in using the Internet, and frequency of accessing the Web-based course. But, to the best of the researchers' knowledge, there is a dearth of research available on the relationship between learners' attitudes toward online interaction and such variables. This is the main reason for conducting this study.

However, gender differences have been reported in the literature as affecting perceptions in general (Hackett, Mirvis, & Sales, 1991). Consequently, gender was included as a matter of understanding if differences of perceptions toward online instruction and online interaction occurred between male and female respondents. Experience with the Internet was included because research has documented the relationship between experience and user acceptance of technology in general (Koohang, 1989). The more experience a user has with technology, the more he or she tends to accept it. Therefore, a user's acceptance may in turn promote learning.

According to Lucy (1993), some significant relationships exist between learners' attitudes towards computers, computer experience, and computer communication. She concluded that positive attitudes towards computers could be predicted by learners' amount of prior experience with computers and that

male learners were more likely to have positive opinions of computers than their female counterparts. A similar result was found by another study done in 1997 by Naert. In the same trend, a number of other studies did not find any relationship between gender and learners' attitudes toward computers (Meisel & Marks, 1999; Koohang & Durante, 2003; Koohang, 2004).

Methodology

Population and Sample: The population of this study was all the undergraduate students enrolled in the Accounting Web-based during the second semester of the academic year 2003-2004. The entire population, which consisted of 500 students, was selected as a sample for the study. Among these, 60 students were excluded because they were used in establishing the validity and reliability of the instrument. The rest of students (440) made the actual sample for the study. A description of the sample at the different levels of the independent variables is displayed in Table 1.

Table 1: Frequency and Percentage of Students by Levels of the Independent Variables (N=440)

Independent Variable (IV)	Levels of IV	N	Percentage
Gender			
	Male	225	51.1
	Female	215	48.9
	Total	440	100
Age			
	Less than 20 years	319	72.5
	20 years and above	121	27.5
	Total	440	100
Years of Experience with the Internet			
	Less than 2 years	256	58.2
	From 2 to 4 years	127	28.9
	Greater than 4 years	57	13.0
	Total	440	100
Grade-Point Average (GPA)			
	Less than 2.5	93	21.1
	From 2.5 to 2.99	139	31.6
	3 or above	208	47.3
	Total	440	100
Frequency of Accessing the Web-based Course			
	Seldom or Never	50	11.4
	Once every two weeks	56	12.7
	Once a week	93	21.1
	Once every two days	116	26.4
	More than once a day	125	28.4
	Total	440	100

Of the 440 students who make up the sample of the study, 225 were males (51.1 percent of the total sample) and 215 (48.9 percent of the total sample) were females. Initially, students' ages varied in four categories: 319 students (72.5 percent) who were less than 20; 111 students (25.2 percent) who were between the ages of 20-22; 8 students (1.8 percent) who were between the ages of 23-25; and only 2 students (0.5 percent) who were over 25. To get more stable results, the last three categories of age were merged into one category that contained 121 students (27.5 percent) who were 20 years of age and older. Students' years of experience with the Internet varied in three categories: 256 students (58.2 percent) with 1-2 years of experience; 127 students (28.9 percent) with 3-4 years of experience; and 57 students (13 percent) with over 4 years of experience. As for students' GPA, it initially varied in 5 categories: 15 students (3.4 percent) whose GPAs were less than 2.00; 78 students (17.7 percent) whose GPAs were between 2.00 and 2.49; 139 students (31.6 percent) whose GPAs were between 2.50 and 2.99; 196 students (44.6 percent) whose GPAs were between 3.00 and 3.69; and 12 students (2.7 percent) whose GPAs were between 3.70 and 4.00. To get more stable results, the first two categories were merged into one category that contained 93 students (21.1 percent) whose GPAs were less than 2.50. Similarly, the last two categories were merged into one category that included 208 students (47.3 percent) whose GPAs were 3.00 or above.

Finally, students' frequency of accessing the web-based course varied in six categories: 16 students (3.6 percent) who never accessed the web-based course; 34 students (7.7 percent) who were rarely accessing the course; 56 students (12.7 percent) who were accessing the course once every two weeks; 93 students (21.1 percent) who were accessing the course once a week; 116 students (26.4 percent) who were accessing the course once every two days; and 125 students (28.4 percent) who were accessing the course more than once a day. Similar to what we did to the age categories, the first two categories of the frequency of accessing the web-based course ("Never" and "Seldom") have been merged into one category that included 50 students (11.4 percent) who rarely or never accessed the web-based course, see Table 1.

The Web-based Course: The present study took place in a Jordanian university that has sought to incorporate Web-based learning into its conventional face-to-face instruction. The project started back to the summer of the year 2003 by an intensive, well prepared workshop on developing Web-based courses. Around 25 highly-motivated instructors from different departments were selected to be trained on various techniques and methods used in designing Web-based courses. The short-term objective of the workshop was to prepare courses that can be taught in a flexible (mixed) mode, which consists of both classroom face-to-face instructions and completely online instructions. Courses designed in this mode move a significant portion of the learning activities from the classroom to the Web. The instructor and the learners have the advantages of real-time exchange in scheduled classes but have the benefit of continuing the discussion and assignments in the spaces between meetings. The workshop resulted in a number of Web-based courses that formed the core of a promising electronic learning project at the Hashemite University. Equipped with these courses, most of the instructors who successfully finished the workshop were well-trained and eager to go through a new experience of teaching.

The Web-based course that was selected for this study was the Accounting Principles (1) course, which was offered by the Department of Accounting at the Hashemite University in the second semester of the academic year 2003-2004. All sections of the course

were taught in the flexible mode by two instructors who participated in the above-mentioned workshop. Blackboard Learning and Community Portal System™, an authoring environment that utilizes asynchronous (Bulletin, e-mail and discussion boards) and synchronous (Chat) communication tools, were used to deliver the Web-based course. Face-to-face lectures of three-class hours per week were supplemented by a variety of Web-based materials including an extensive collection of interactive, collaborative practice materials, an extensive set of PowerPoint slides available as a supplement to the textbook, and extensive files of repeatable practice quizzes. As part of the assessment, students were required to log into Blackboard and complete weekly assignments that were designed to foster students' relationship with the e-course. Daily participation in electronic discussion forums and chat rooms was also required from students.

The Instrument: An instrument was designed to collect information regarding the independent variables (age, gender, GPA, years of experience with the Internet, and frequency of accessing the Web-based course) and the dependent variable (learners' attitudes toward online interaction in the Web-based course). The survey, displayed in Appendix A, consisted of two sections. The first section "General Information" was designed to gather information about the five independent variables. Based on attitude questionnaires used in other studies (Basile & D'Aquila, 2002; Marcheggiani, Davis, & Sander, 1999; Williams & Pury, 2002; Koohang & Durante, 2003; Koohang, 2004), the second section "Attitudes toward Online Interaction in the Course" was developed to measure learners' attitudes toward online interaction in the Accounting Web-based course using twelve items that cover three main areas of online interaction: (1) Learner-to-instructor interaction, (2) Learner-to-learner interaction, and (3) Learner-to-content interaction. Since the concern of this study was the overall online interaction, items of this section were listed without explicit specification for the areas they cover. On a Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), students were asked to rate their agreement with the items, which were worded positively. A higher score on these items indicates more favorable attitudes toward online interaction in the Web-based course. For a list of these items, please see Appendix A.

The instrument went through two stages of validity verification. In the first stage, the survey items were submitted to a panel of four instructional technologists from four Jordanian universities. The panel's task was to rate each item for clarity and usefulness in measuring learners' attitudes toward online interaction in the web-based course. Based on the panel's recommendations and suggestions, necessary changes were made to the survey. The second stage began three weeks prior to the end of the semester during which the study was conducted. The survey was administered to a randomly selected sample of 20 students who were enrolled in the web-based course. These students, who were later excluded from the sample used in the study, were asked to rate the survey items for clarity of expression. Based on students' feedback, a final version of the survey was prepared.

The internal consistency of the instrument was determined two weeks prior to the end of the semester using a sample of 40 students (22 females and 18 males) who were studying in the "Accounting Principles (1)" web-based course. This sample of students was also excluded from the sample used in the study itself. The calculated coefficient alpha reliability for the attitudes scale (section two) was .85. This figure suggests that the instrument is suitable to measure learners' attitudes toward online interaction in the web-based course.

In order to collect data on the variables under study, the instrument was handed to students during the last week of the semester.

Data Analysis: To answer the research questions, the following statistical analyses were utilized:

- Descriptive analysis to compute frequencies, means, percentages, and standard deviations for variables and items of the attitudes scale.
- Five-way Analysis of Variance (with no interaction) to determine whether there are any statistically significant differences in attitudes toward online interaction due to gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course.

Using data collected by the instrument, the researchers employed the SPSS statistical package to carry out the above analyses.

Results of the Study

Descriptive Analysis: Table 2 shows the means and standard deviations of learners' attitudes toward online interaction at the different levels of the five independent variables (gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course). According to the table, males and females have close mean values of attitudes (3.86, 3.90, respectively). Similarly, the two categories (levels) of age seem to show close mean values of attitudes. As for the categories of years of experience with the Internet, one can notice that there is a relatively slight increase in the mean values of attitudes as we move from a category with a less number of years of experience toward a category with a higher number of years of experience. As for the three categories of GPA, the table shows that the "From 2.5 to 2.99" category has a lower mean value of attitudes than the other two categories that relatively seem to have close mean values. In regard to the frequency of accessing the Web-based course, one can notice that as we move from a category with a less frequency of access into a category with a higher frequency of access, the mean values of learners' attitudes toward online interaction tend to increase accordingly.

Table 2: Means and Standard Deviations of Learners' Attitudes by Levels of Independent Variables (N=440)

Independent Variable (IV)	Levels of IV	N	Mean	SD
Gender				
	Male	225	3.86	.790
	Female	215	3.90	.767
	Total	440	3.88	.779
Age				
	Less than 20 years	319	3.89	.765
	20 years and above	121	3.84	.816
	Total	440	3.88	.779
Years of Experience with the Internet				
	Less than 2 years	256	3.86	.772
	From 2 to 4 years	127	3.90	.793
	Greater than 4 years	57	3.94	.781
	Total	440	3.88	.779
Grade-Point Average (GPA)				
	Less than 2.5	93	3.92	.778
	From 2.5 to 2.99	139	3.81	.773
	3 or above	208	3.90	.784
	Total	440	3.88	.779
Frequency of Accessing the Web-based Course				
	Seldom or Never	50	3.12	.726
	Once every two weeks	56	3.86	.892
	Once a week	93	3.86	.852
	Once every two days	116	4.02	.717
	More than once a day	125	4.07	.754
	Total	440	3.88	.779

Results Related to Research Question (1)

To answer the first research question regarding attitudes toward online interaction, learners in the Web-based course were asked to rate their response to twelve items. Table 3 displays the mean values and standard deviations for the twelve items of the attitudes scale. It is interesting to notice that all items had mean values greater than 3.70, indicating that overall learners tended to agree with all items. While items 3 and 11 had the highest mean values (4.08 and 4.06, respectively), items 8 and 7 had the lowest means (3.71 and 3.75, respectively). The rest of the items had mean values between 3.78 and 3.98. As shown in the table, the total mean score for all items was 3.88, indicating favorable attitudes toward online interaction in the Web-based course.

Frequencies and percentages of learners in the Web-based course reporting their responses to the twelve items of the attitudes toward online interaction are reported in Table 4. Eighty-four percent of learners strongly agreed or agreed that "they were able to direct their questions and concerns to the instructor online and at any convenient time." Around eighty-five percent of learners strongly agreed or agreed that "online interaction with the instructor helped them to ask questions they might not have asked otherwise."

Table 3: Means and Standard Deviations for the Attitudes Items (N=440)

	Item	N	Mean	SD
1.	I usually receive online feedback from the instructor about questions and concerns I post online.	440	3.84	.791
2.	I can direct my questions and concerns to the instructor online at any convenient time.	440	3.98	.760
3.	Online interaction with the instructor helped me to ask questions I might not have asked otherwise.	440	4.08	.783
4.	Through online interaction with other students, I can share ideas and concerns regarding this course.	440	3.90	.795
5.	Online interaction with others encourages me to learn more.	440	3.93	.753
6.	Online interaction with students and instructor helped me to learn the course material.	440	3.83	.771
7.	My interaction with the online course material helped me to understand what I learn.	440	3.75	.789
8.	Online interaction with students and instructor stimulates me to think about the course material in new ways.	440	3.71	.731
9.	Through online interaction with students and instructor, I can get help on topics that need more explanation to understand.	440	3.85	.775
10.	I feel the online interaction that takes place in this course will be reflected positively on my final grade in the course.	440	3.82	.826
11.	I feel the online interaction in this course will make a new experience for me that I have not gone through before.	440	4.06	.705
12.	I think my online interaction in this course has been more than any other face-to-face interactions I've had in other courses	440	3.78	.865
	Average	**440**	**3.88**	**.779**

5=Strongly Agree, 4=Agree, 3=Neither Agree nor Disagree, 2=Disagree, 1=Strongly Disagree

Table 4: Frequencies and Percentages of Learners' Attitudes

	SA		A		N		D		SD	
	f	%	f	%	f	%	f	%	f	%
Item#1	108	24.5	216	49.1	95	21.6	21	4.8	0	0
Item#2	123	28.0	246	55.9	50	11.4	20	4.5	1	.2
Item#3	157	35.7	219	49.8	50	11.4	12	2.7	2	.5
Item#4	116	26.4	240	54.5	70	15.9	13	3.0	1	.2
Item#5	108	24.5	254	57.7	70	15.9	8	1.8	0	0
Item#6	96	21.8	241	54.8	87	19.8	16	3.6	0	0
Item#7	95	21.6	243	55.2	66	15.0	36	8.2	0	0
Item#8	82	18.6	263	59.8	76	17.3	19	4.3	0	0
Item#9	105	23.9	248	56.4	64	14.5	23	5.2	0	0
Item#10	123	28.0	227	51.6	16	13.9	29	6.6	0	0
Item#11	142	32.3	235	53.4	51	11.6	12	2.7	0	0
Item#12	114	25.9	200	45.5	73	16.6	50	11.4	3	.7

SA=Strongly Agree, A=Agree, N=Neither Agree nor Disagree, D=Disagree, SD=Strongly Disagree

It is worth to mention that eighty-two percent of learners strongly agreed or agreed that "online interaction with others encouraged them to learn more." Similarly, eighty percent of learners strongly agreed or agreed that "through online interaction with students and instructor, they were able to get help on topics that needed more explanation to understand." Around eighty-five percent of the learners strongly agreed or agreed that "online interaction with the instructor helped them to ask questions they might not have asked otherwise." Eighty-four percent of the learners strongly agreed or agreed that "they were able to direct their questions and concerns to the instructor online and at any convenient time." Eighty-one percent of learners strongly agreed or agreed that "through online interaction with other students, they were able to share ideas and concerns regarding this course."

It is important to state that around eighty percent of the learners strongly agreed or agreed that "they felt the online interaction that took place in the course was going to be reflected on their final grades in the course." A close percentage of the learners (78%) strongly agreed or agreed that "online interaction with students and instructor stimulated them to think about the course material in new ways." A large percentage of the learners (around 86%) strongly agreed or agreed on the statement "I feel the online interaction in this course will make a new experience for me that I have not gone through before."

As for strong disagreement among learners, one can notice from Table 4 that relatively zero or close to zero percentages of learners strongly disagreed with all items. Percentages of disagreement among learners on the different items of the attitudes scale varied between two to eleven. In fact, the largest percentage of disagreement among the learners (11%) was with the item "I think my online interaction in this course has been more than any other face-to-face interactions I have had in other courses." Percentages of the learners who neither agreed nor disagreed with the different items of the attitudes scale varied between eleven and twenty-two.

Results Related to Research Question (2)

To answer the second research question regarding whether there are any significant differences in learners' attitudes toward online interaction that are due to gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course, a five-way analysis of variance (with no interaction) was conducted. In this analysis, the dependent variable was learners' attitudes toward online interaction. Gender, age, GPA, years of experience with the Internet, and frequency of accessing the Web-based course were used as independent variables. Each of gender and age had two categories (levels). GPA and years of experience with the Internet had the same number of categories (3 categories). The frequency of accessing the Web-based course had five categories. The results of the 2x2x3x3x5 ANOVA (with no interaction) are displayed in Table 5.

Inspection of Table 5 indicates that only one independent variable, frequency of accessing the Web-based course, contains a significant difference in learners' attitudes toward online interaction, $F(4,435)= 59.737$, $p<.001$. None of the rest of the independent variables (gender, age, GPA, and years of experience with the Internet) has proved to contain any significant differences in learners' attitudes (at .05 level of significance).

Table 5: Five-Way ANOVA of Learners' Attitudes (No Interaction)

Source of Variation	SS	df	MS	F	Sig. F
Gender	.029	1	.029	.011	.916
Age	.303	1	.303	2.035	.154
Grade-Point Average (GPA)	.460	2	.230	1.543	.215
Yrs of Experience with the Internet	.804	2	.402	2.694	.069
Frequency of Accessing the Course	35.642	4	8.910	59.737	.000*
Explained	37.239	10	3.724	24.966	.000
Residual	63.990	429	.149		
Total	101.229	439			

*Significant at .001 level of significance

Because a significant difference was found in the five-way ANOVA, follow-up tests were conducted to evaluate pairwise differences among the means of the five categories (or levels) of the frequency of accessing the Web-based course variable. Since the test of homogeneity of variances was significant, $F(4,435)= 8.101$, $p<.001$, homogenous variances were not assumed and post hoc comparisons were conducted using the Dunnett's C tests, a test that does not assume equal variances. The results of these tests, as well as the mean differences between learners' attitudes toward online interaction for the five categories, are reported in Table 6.

Table 6: Mean Differences between Learners' Attitudes among Categories (Levels) of Frequency of Accessing the Web-based Course (I-J)

Category (I)	SN	TW	OW (J)	TD	OD
Seldom or Never (**SN**)	---				
Once every two weeks (**TW**)	.74*	---			
Once a week (**OW**)	.74*	0	---		
Once every two days (**TD**)	.90*	.16*	.16*	---	
More than once a day (**OD**)	.95*	.21*	.21*	.05	---

*The mean difference is significant at the .05 level.

Based on the data presented in Table 6, one can say that there were no significant differences in the means between TW and OW, and between TD and OD. However, there were significant differences in the means between SN and each of TW, OW, TD, and OD. Moreover, there were significant differences in the means between TW and each of TD and OD. Almost the same differences in the means were found between OW and each of TD and OD.

Discussion and Conclusions

In spite of current researchers' interest in the study of online interaction in Web-based courses, there is a dearth of research available on the relationship between learners' attitudes toward online interaction and learners' demographic variables (such as gender, age, GPA, etc.). This study sought to measure learners' attitudes toward online interaction in a Web-based course. By measuring learners' perceptions, the study attempted to find whether online interaction promotes learning among learners. The study also gave attention to the variables of gender, age, Grade-Point Average (GPA), years of experience with the Internet, and frequency of accessing the Web-based course to test whether these variables are significant factors in learners' attitudes toward online interaction in the Web-based course.

The descriptive results of this study indicated that overall learners positively perceived that online interaction in the Web-based course promoted learning among them. This valuable finding, which aligns with what Berge (1999) and Jaffe (1997) found, was exemplified by the result that above seventy-seven percent of the learners strongly agreed or agreed on the following points:

- Online interaction with others encouraged learners to learn more.
- Learners were able to direct their questions and concerns to the instructor online and at any convenient time.
- Through online interaction with students and instructor, learners were able to get help on topics that needed more explanation to understand.
- Online interaction with the instructor helped learners to ask questions they might not have asked otherwise.
- Through online interaction with other students, learners were able to share ideas and concerns regarding the course.
- Learners felt that online interaction in the course was going to be reflected on their final grades in the course.
- Online interaction with students and instructor stimulated learners to think about the course material in new ways.

Based on this finding, one can conclude that in order to promote learning in a Web-based course, students need to be encouraged to participate in online activities that enable interaction to occur. For example, students can participate in discussion boards, email, asynchronous conferencing, chatting, and listservs.

Another finding of the study was that gender, age, GPA, and years of experience with the Internet were insignificant factors in learners' attitudes toward online interaction in the Web-based course. Except for the years of experience with the Internet, this finding goes along with the findings of a number of relatively recent studies (Meisel & Marks, 1999; Koohang & Durante, 2003; Koohang, 2004). However, in regard to gender and years of experience with the Internet, this finding does not agree with the findings of Lucy's (1993) study perhaps because of the differences in the instruments employed in measuring attitudes. Based on this finding, the following conclusions can be drawn:

- Males and females in the web-based course equally perceived that online interaction promoted learning. This implies that the "Accounting Principles (1)" web-based course implemented by the Department of Accounting at the Hashemite University did not reflect any gender bias. Therefore, the structure of this course can be helpful in designing similar web-based courses.
- Learners of different ages equally perceived that online interaction promoted learning. However, since around seventy-two percent of the learners who participated in this study were less than 20 years of age, the influence of age might not have been tested adequately. Therefore, further examination of this variable is needed and is recommended for future studies.
- Learners with different GPAs equally perceived that online interaction promoted learning. Knowing that almost one half of the learners in this study had GPAs less than 3.00, it is of an interest for administrators and policy-makers to realize that online interaction in the web-based course promoted the learning of learners regardless of their GPAs.
- Learners with different numbers of years of experience with the Internet equally perceived that online interaction promoted learning. Surprisingly, this conclusion did not meet the authors' expectation. One reason for such a result could be that around fifty-eight percent of learners participating in this course had less than two years of experience with the Internet. Therefore, to study the influence of such a variable more adequately, we believe that further examination is needed.

This study also found that learners' frequency of accessing the Web-based course was a significant factor in learners' attitudes toward online interaction. In other words, depending on their categories of accessing the web-based course, learners differently perceived that online interaction promoted learning. To better understand the influence of these categories, post hoc comparisons were conducted. The results of these comparisons helped in forming the following conclusions:

- Compared to learners in the other categories, learners who "seldom" or "never" accessed the web-based course had the lowest level of attitudes toward online interaction. A possible reason for this could be that these learners did not benefit much from online interaction. However, since learners in this category made for around eleven percent of the whole sample, it is important to realize that the success of a web-based course may depend upon increased frequency of accessing that course.

- Learners who used to access the web-based course once every two weeks and those who used to access the course once a week equally perceived that online interaction promoted learning. One reason for such a result could be that discussion forums were due every two weeks. Therefore, it is likely that this gave some learners the chance to wait until the second week of each forum to access the course. It should be mentioned that learners in both categories had higher positive attitudes than those of the learners in the previous "Seldom or Never" category.
- Learners who used to access the web-based course once every two days and those who used to access the course more than once a day equally perceived that online interaction promoted learning. One possible reason for such a result could be that the class used to meet face-to-face every Sunday, Tuesday, and Thursday. Therefore, it is possible that some learners preferred to access the course on the day when they had no class. However, learners in both categories had the highest positive attitudes among all categories.

In general, learners who had accessed the Web-based course more frequently indicated significantly higher positive attitudes toward online interaction.

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Appendix A
The Survey Instrument

In this survey, there are two sections: (1) General Information; and (2) Attitudes toward Online Interaction in the Course.

SECTION (1): General Information

Please respond to the following items by circling the appropriate number:

1. **Your gender:**

(1) Male (2) Female

2. **Your age:**

(1) Less than 20 years (2) From 20 to 22 years
(3) From 23 to 25 years (4) Greater than 25 years

3. **Your Grade-Point Average (GPA):**

(1) Less than 2.00 (2) From 2.00 to 2.49
(3) From 2.50 to 2.99 (4) From 3.00 to 3.69
(5) From 3.70 to 4.00

4. **Your years of experience with the Internet:**

(1) Less than 2 years (2) From 2 to 4 years
(3) Greater than 4 years

5. **How frequently you accessed the web-based course:**

(1) Never (2) Seldom
(3) Once every two weeks (4) Once a week
(5) Once every two days (6) More than once a day

SECTION (2): Attitudes toward Online Interaction in the Course

Using the following scale, please indicate your agreement with each of the items that follow by circling the number that best describes your belief about online interaction in the Accounting Web-based course:

Scale:

5=Strongly Agree, 4=Agree, 3=Neither Agree nor Disagree, 2=Disagree, 1=Strongly Disagree

1.	I usually receive online feedback from the instructor about questions and concerns I post online.	5	4	3	2	1
2.	I can direct my questions and concerns to the instructor online at any convenient time.	5	4	3	2	1
3.	Online interaction with the instructor helped me to ask questions I might not have asked otherwise.	5	4	3	2	1
4.	Through online interaction with other students, I can share ideas and concerns regarding this course.	5	4	3	2	1
5.	Online interaction with others encourages me to learn more.	5	4	3	2	1
6.	Online interaction with students and instructor helped me to learn the course material.	5	4	3	2	1
7.	My interaction with the online course material helped me to understand what I learn.	5	4	3	2	1
8.	Online interaction with students and instructor stimulates me to think about the course material in new ways.	5	4	3	2	1
9.	Through online interaction with students and instructor, I can get help on topics that need more explanation to understand.	5	4	3	2	1
10.	I feel the online interaction that takes place in this course will be reflected positively on my final grade in the course.	5	4	3	2	1
11.	I feel the online interaction in this course will make a new experience for me that I have not gone through before.	5	4	3	2	1
12.	I think my online interaction in this course has been more than any other face-to-face interactions I have had in other courses.	5	4	3	2	1

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Student-teachers' ICT Skills and their Use during Placement Related to Pre-Service Teacher Education Program at Yarmouk University in Jordan

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Received Date: Dece. 1, 2004 **Accepted Date: Jun. 1, 2005**

***Abstract**: Identifying Pre-service teachers' Information and Communication Technology (ICT) skills and the degree to which they apply these skills in their teaching is a vital issue both to inform future planning and to implement new ICT in educational systems in Jordan and worldwide. This study investigates ICT skills of student-teachers at Yarmouk University in Jordan and their degree of ICT use in practice schools during the first semester of 2003/2004 academic year. Data were obtained via questionnaires with a random sample of the (90) student-teachers and interviews with a random sample of (40) student-teachers. In addition, interviews with all teacher trainers (22) at Yarmouk University were conducted to further triangulate findings from student-teachers' questionnaires and interviews. Regarding ICT skills the results showed that student-teachers possessed low to moderate ICT skill levels. With regard to the degree of ICT use at practice schools, results from the questionnaires showed congruency between student-teachers' ICT skills level and the degree to which they apply these skills. However, results from the interviews indicated lack of ICT skills used by student-teachers during their teaching practice. Lack of adequate training at the university, lack of access to ICT resources, teacher-trainers' inability to model the use of ICT in their teaching and inability to incorporate ICT in teaching were among the factors that affected student-teachers' ICT use at practice schools.(**Keywords**: Information and Communications Technolog Skills, Teacher Education).*

مدى امتلاك طلبة التربية العملية في جامعة اليرموك لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها خلال فترة التطبيق العملي الخاصة ببرنامج إعدادهم معلمين قبل الخدمة

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ملخص: إن الكشف عن مدى امتلاك طلبة التربية العملية لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها في المدارس المتعاونة قبل الخدمة أمر ضروري من أجل التخطيط المدروس لعمليات إدخال تكنولوجيا المعلومات والاتصالات إلى النظم التربوية في الأردن وعلى المستوى العالمي. لذلك هدفت هذه الدراسة إلى الكشف عن مدى امتلاك طلبة التربية العملية في جامعة اليرموك لمهارات تكنولوجيا المعلومات والاتصالات ودرجة ممارستهم لها في أثناء التطبيق العملي في المدارس المتعاونة وذلك خلال الفصل الأول من العام الدراسي 2004/2003 . تم جمع البيانات بوساطة استبانة بناها الباحثان وتم تطبيقها على عينة عشوائية من طلبة التربية العملية تكونت من (90) طالبا وطالبة. كما تم إجراء مقابلات مع عينة عشوائية أخرى تكونت من 40 طالبا وطالبة. وأجريت مقابلات مع كل مشرفي التربية العملية في جامعة اليرموك والبالغ عددهم 22 مشرفا. أظهرت نتائج الدراسة المنبثقة عن الاستبانة أن مدى امتلاك طلبة التربية العملية لمهارات تكنولوجيا المعلومات والاتصالات تراوح بين ضعيف ومتوسط، وفيما يتعلق بمدى استخدامهم لهذه المهارات في التطبيق فقد دلت النتائج على أن هناك انسجاما بين مدى امتلاكهم لهذه المهارات وبين درجة استخدامهم لها في مدارس التطبيق. ودلت النتائج التي تم الحصول عليها من خلال المقابلات أن هناك قصورا كبيرا فيما يتعلق بمدى استخدامهم لمهارات تكنولوجيا المعلومات والاتصالات في أثناء فترة التطبيق العملي. وكان نقص التدريب المناسب في الجامعة، وصعوبة الوصول إلى مصادر تكنولوجيا المعلومات والاتصالات، وعدم استخدام مشرفي التربية العملية لهذه المهارات في التدريس و عدم قدرة طلبة التربية العملية أنفسهم على دمج هذه المهارات أثناء التطبيق، من أبرز العوامل التي أثرت في درجة استخدامهم لهذه المهارات (**الكلمات المفتاحية**: اعداد المعلمين، مهارات تكنولوجيا والاتصالات).

Introduction:

The use of ICT has caused substantial changes for teaching and learning. It is bringing about opportunities for educators as it can provide powerful support for educational innovations. Nonetheless, getting to grips with ICT skills and its related applications in real teaching-learning situations creates formidable challenges for teachers and teacher educators. They need not only to learn the skills of using ICT, but also to learn how to design innovative instruction through an integration of ICT with curriculum and teaching experiences at schools. Reasonably, for undergraduate students who are prospective school teachers, they should be well prepared to use ICT in education.

Studies conducted in the field of pre-service teacher education unveiled numerous weaknesses on the part of teachers graduating from teacher education programs at universities with regard to the knowledge of the ways of ICT use in their professional practice (Gibson, 2002; Cuckle et al, 2000; Murphy and Greenwood, 1998). Student-teachers who are being prepared to enter the teaching profession, upon fulfilling the requirements of the teacher preparation program at Yarmouk University, are required to possess basic computer skills as well as how to apply these skills in various teaching-learning situations. They need to see the importance of planning, designing and implementing computer-based instructions in their classroom when they finally become teachers. The Jordanian Ministry of Education (MOE) stipulates teachers are required to have considerable knowledge and teaching ability in a full range of ICT skills within their specialist subjects; they

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should be able to demonstrate understanding and classroom use of ICT and need to experience its use in school (MOE, 1988; MOE, 2003). These MOE stipulations have been recently accentuated in all the documents presented to Jordan-UK ICT in education conference (MOE, 2004).

In considering these requirements, it was decided to assess student-teachers' ICT skills and the degree to which student-teachers use these skills in their teaching practice at school. In addition, this study will attempt to identify factors that inhibit the use of ICT at schools and the university. To the best of the researchers' knowledge, there is no prior study that investigated student-teachers' ICT skills and the degree to which they apply these skills in their teaching in Jordan. Therefore, this research will contribute to the body of the literature in Jordan and other countries with regard to the use of ICT in education. It will also assist MOE and the teacher education institutions to make informed decisions regarding the use of ICT in education. More effective use and improved outcomes are dependent on an increased understanding of the training needs that contribute to student-teachers' development. It is timely, therefore, to examine student-teachers' current stage of development and the needs which they themselves express in relation to moving forward with ICT.

Objectives of the Study: The researchers attempted to accomplish the following objectives:

1- Assess student-teachers' ICT level of competence.
2- Assess student-teachers' degree of ICT use during their teaching practise at school.
3- Identify factors that student-teachers and their trainers believe to be the greatest barriers to implementing ICT in the Jordanian schools.

Related Literature: Information and Communications Technologies (ICT) has great potential to aid teachers to adapt to their new role as the facilitators of the learning process (Al-Far, 2003; Altawalbeh, 2003; Dede, 1997). For instance, teachers' inquiry can be facilitated with the help of computers as it provides access to vast amounts of information. Through the use of E-mail, user groups, and other online forms student-teachers will have the opportunity to communicate and share their experiences with a much wider range of colleagues and experts in their fields of specialisms. The World Wide Web can facilitate teachers' access to digital libraries and vast amounts of information in printed, visual and video form. Video conferencing offer the teachers the opportunity to observe other teachers in different countries as they implement similar curriculum areas and learn from their expertise (Gibson, 2002). Nonetheless, the use of ICT cannot be fully effective unless teachers receive adequate training and support (Al-Far, 2002; Salameh & AbuRaya, 2002; Altawalbeh, 2003; Resta, et al, 2002). Their skills and competencies should be continuously updated to keep current with the most recent innovations in this area so they can transfer these competencies to students (Resta, et al, 2002 ; Reid, 2000). To enable teachers to make full use of ICT, pre-and in-service teacher training institutions should undertake a more active role with regard to teacher education and training that goes beyond the development of basic ICT literacy skills to educationally oriented training on ICT. This entails that teacher educators and trainers should model the appropriate use of ICT in the delivery of the curriculum of teacher education and training programmes inasmuch as teachers are required to incorporate ICT into their own teaching at schools. Matthew et al (2002) examined the benefits of one-on-one coaching for teacher educators by technology coaches as they worked together to learn to use technology. Results from the study indicated that coaches as well as teacher educators benefited from the relationship and both groups increased their technology competency.

The identification of teachers' information technology skills is a prerequisite for developing the existing pre-service teacher education program and designing future professional development training for in-service teachers.

Studies conducted in the field of pre-service teacher education unveiled numerous weaknesses on the part of teachers graduating from teacher education programs at universities with regard to the knowledge of the ways of ICT use in their professional practice (Gibson, 2002; Cuckle et al, 2000; Murphy and Greenwood, 1998). Watson (1997) investigated pre-service teachers' views on their information technology education. The results indicated that many student-teachers were inadequately prepared for teaching ICT in schools and had low self-ratings of competency and negative feelings about it. Cuckle et al (2000) surveyed the years' cohort of 427 student-teachers in 63 partnership secondary schools in the UK by means of two self-rating checklist questionnaires. The results showed that much of the student-teachers' ICT experience had been gained during their undergraduate studies or at home. They also had considerable enthusiasm for learning more ICT skills and using them in their future careers as teachers. The researchers also found that students were not always able to transfer their ICT skills to use in the classroom.

Collaboration between schools and universities is a crucial factor for successful implementation of pre-service teacher education programmes (Resta et al, 2002). Such collaboration provides an opportunity to pre-service teachers to interconnect theory with practice. Asan (2002) examined benefits of a collaborative work between the Faculty of Education at Karadeniz Technical University and basic education schools in Turkey. Pre-service teachers were assigned to complete a computer project, which was intended for use to support classroom lessons. As a result of this collaborative work, pre-service teachers and classroom teachers practiced the development of instructional materials and the integrating of technology in subject content areas. In addition, they became more comfortable with the technology and developed greater

proficiency in their computer use. In line with this argument, McDougall and Squires (1997) suggested that teachers learning alongside students might provide a fruitful means of teachers' professional development, within a framework of curricular changes and integration of IT into and across existing curricula.

Student-teachers who are being prepared to become teachers should realise the efficacy and see benefits of ICT with regard to the enhancement of teaching/learning situations. Russell et al (2000) reviewed results from an Australian study, which was conducted to establish baseline information about teachers' experience and skills in information technology. Results from the study revealed that although there is a general agreement among teachers regarding the importance of ICT for their students and for their own professional development, significant areas of deficit were identified. Teachers saw themselves as competent with basic computer skills, but were less confident with activities requiring advanced use of computers. In addition, teachers reported low levels of confidence in their knowledge of information technology developments.

Computer literacy is an important key factor that can assist student-teachers to utilise the course activities successfully during pre-service teacher education programmes. In line with this argument**,** Resta et al (2002) contend that for education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Baki (2000) analysed an undergraduate course related to a teacher education programme. The researcher gathered data through questionnaires and students' writings about the course activities. Findings indicated that students who felt prepared, made the link between computer-based mathematical activities and school mathematics, and had more experience of using instructional software during the course than others. Similarly, a low level of competence among pre-service teachers in Canada was identified in a study conducted to assess prospective student-teachers' performance regarding the use of the Internet in teaching (Hewitt et al, 2002). The results indicated that pre-service teachers had little previous experience facilitating student-led investigations, and often attempted to direct student research. Prospective English teachers held optimistic views regarding ICT use in education. However, they expressed frustration due to the lack of opportunity to make full use of it (Goodwyn, et al, 1997).

Lack of ICT related facilities and opportunities that allow student-teachers to make full use of ICT can have serious negative consequences on their competencies. Murphy and Greenwood (1998) identified three main obstacles that limited the successful implementation of pre-service teacher education programmes – student access to computers, the ICT policy adopted by initial teacher training providers and the lack of encouragement for students to use ICT in teaching practice.

The learning environment in which ICT is used requires certain facilities and resources that should be made available for effective delivery of teacher education programmes. Facilities include basic infrastructure such as electrical wiring, Internet access, lighting, air-conditioning, and space, in addition to various types of technological devices from computers with peripherals, video equipment, and specialised tools like digital microscopes. Further resources including various types of software as well as traditional tools like books, videotapes, and audiotapes, should be made available for student-teachers (Resta et al, 2002; Gibson, 2002).

ICT is an ever changing area that requires continuous updating of related equipment and tools in addition to continuous updating of teachers' ICT-related skills.

Methodology: This study utilised two types of data collection instruments, questionnaires and interviews.

Questionnaires: In this study the researchers surveyed the semester cohort of 237 students participating in the practicum teaching programme at Yarmouk University. A random sample of 90 (38%) student-teachers was given a self–rating questionnaire containing two checklists towards the end of their teaching experience in schools during the academic year 2003-2004. All subject specialties (i.e Maths, Science, English, Arabic, Islamic Education, Social Studies and class teachers (covering all subject areas) were covered. Student-teachers were asked about the following :-

1. Gender
2. Subject specialty.
3. Type of school (i.e. private or public).
4. Self- assessment of overall competence and in a range of ICT applications (e.g. word processing, databases, spreadsheets, CD-ROMs, the Internet, etc).
5. The degree of use of ICT during their teaching practice at schools.

Two open-ended questions were placed at the end of the questionnaire requiring student-teachers to indicate any ICT related skill/skills they possessed that was/were not included in the checklist and to provide their personal opinion regarding motivation and enthusiasm to use ICT related skills in teaching.

The questionnaire used in this study was developed by the researchers based on their experience in the field of ICT in education. A panel of experts was used to establish content validity for the instrument. Members of the panel were selected because of their experience in ICT in education, expertise in instrument development, expertise in the use of statistics, and expertise in translating the English language into the Arabic language and vice versa. The panel examined all statements for appropriate language and word usage and made suggestions about item terminology to enhance clarity and brevity. To ensure the internal consistency for the questionnaire, the Cronbach's Alpha coefficient formula was used, and the coefficient was found to be 0.90. To analyse the data gathered from student-teachers, mean scores and standard deviations were

computed for responses to each item on the questionnaire. The survey took the form of a self-rating questionnaire with tick boxes requiring a response on a scale from 1-3 for both the level of competence and the degree of ICT use in schools. Such a self-rating scale is widely used in evaluative studies throughout the social sciences.

Interviews:-

The data gathered through the survey questionnaire were complemented by means of follow-up semi-structured interviews with student-teachers. A random sample of 40 student-teachers was drawn from across the various subject specialisms.

Following student interviews, all teacher trainers were interviewed to further explore issues highlighted by students and to triangulate the findings of the questionnaire and student-teachers' interviews.

Data Analysis

The responses which required a tick response were coded numerically and entered on an SPSS database.

The t-test was used to determine statistically significant differences attributed to 'gender', 'speciality' and 'type of school' variables on the responses of the participants. For qualitative data analysis there was no single ideal approach to analysing qualitative data, (McMillan and Schaumacher, 1997) so the researchers contrived to find a suitable pattern for the analysis within the general framework of approaches suggested in the research books and guided by the research objectives of the present study. With regard to the semi-structured interviews they were first tape recorded and then transcribed for analysis. The reliability of transcripts was examined by the interviewees themselves who ascertained that they were consistent with their views. None of the interviewees reported inconsistency between his views and the content of the transcript. The initial analysis of the interview data suggested several categories which were used as basis for the interpretation of the data. In addition, it was possible to provide frequencies and percentages for many of the issues in the identified categories (Patton, 2002 and Cohen et al, 2000).

Results

With regard to student-teachers' level of competence in ICT, the group of respondents was segmented into three categories: low, moderate and high. Student-teachers who possessed a low level of competence in ICT were those whose average mean of responses on ICT skills is less than 1.5. When the average mean of responses of the participants fell between 1.5 and 2.5, student-teachers were considered as having moderate ability with regard to ICT skills. Student-teachers were considered as having a high level of competence where those whose average mean of their responses was more than 2.5.

The results indicated that the average mean of responses did not fall in the high level of competence category for all the ICT skills in the questionnaire. Table (1) lists the ICT skills where student-teachers felt they possessed moderate ability in terms of the means and standard deviations.

Table 1: Means and standard deviations of the ICT skills which student-teachers felt they moderately possessed ranked in a descending order

No.	Item (ICT Skills)	Ability Level	
		M	SD
1	Use of various computer software programs	2.00	0.64
2	Loading software programs into computers	1.64	0.68
3	Proper use of ICT related terminology in teaching subject specialty	1.68	0.67
5	Knowledge of ICT use in the development of the local society	1.76	0.64
6	Knowledge of computers and their peripheral devices (printer, scanner, …)	1.92	0.74
11	Use of word processing software	2.00	0.70
12	Use of computers to create data bases	1.79	0.71
14	Use of E-Mail	1.96	0.86
15	Use of the Internet as a teaching learning resource	2.07	0.70
16	Use of computers to create electronic slides	2.01	0.79
17	Use of computers to promote professional productivity	1.76	0.71
18	Use of the Internet to promote professional productivity	2.09	0.76
19	Utilization of audio and video conferencing to promote professional productivity	1.56	0.66
20	Use of computers to enhance teaching-learning process	1.90	0.70
21	Use of computer peripheral devices (scanners, printers, data shows, etc.) to enhance teaching learning process	2.07	0.78
22	Utilization of electronic audio and video conferencing to enhance teaching learning process	1.71	0.62
23	Proper use of ICT related devices and programs in various teaching learning situations	1.91	0.65
24	Adherence to the legal standards pertaining to the use of ICT (especially the Internet) in teaching	1.80	0.72
25	Use of ICT to promote the idea of life long learning	2.14	0.74
26	Evaluation of instructional software programs	1.66	0.69
27	Implementing instructional activities derived from research and studies found on the Internet	1.71	0.69
28	Use of ICT related resources to reinforce instructional activities delivered to large groups	1.96	0.72

No.	Item (ICT Skills)	Ability Level	
		M	SD
29	Use of ICT related resources to reinforce instructional activities delivered to small groups	1.79	0.69
30	Use of ICT related resources to assess students' academic achievement	1.81	0.73
31	Prior planning for ICT use in various teaching learning situations	2.07	0.73

Student-teachers possessed a low level of ability in the ICT competences shown in (Table 2).

Table 2: Means and standard deviations of the ICT skills which student-teachers felt they possessed to a low degree ranked in a descending order.

No	item	Ability level	
		Mean	S.D.
4	Knowledge of the use of ICT for teaching practical activities	1.49	0.60
7	Making simple connections and installing computers and their peripheral devices	1.47	0.66
8	Use of scanners to make presentations	1.39	0.53
9	Use of digital cameras to make presentations	1.20	0.43
10	Use of ICT to assess student academic achievement	1.43	0.56
13	Use of computers to make spread sheets	1.49	0.66
17	Use of computers to promote professional productivity	1.46	0.60

To determine if the independent variables affected the participants' responses, the t-test was conducted at the 0.05 level of significance to identify if any statistically significant differences existed between male and female respondents. The results showed no effect that could be attributed to the independent variables of gender, specialty and school type, as shown in Table (3) below.

Table (3): *table description table description table description table description table description table description table description table description table description.*

		N	Mean	SD	t	df	Sig. (2-tailed)
GENDER	Male	20	1.69	0.38	-1.332	88	0.186
	Female	70	1.81	0.34			
SPECIALTY	Class teacher	31	1.75	0.38	-0.577	88	0.566
	Field teacher	59	1.80	0.3426			
SCHOOL TYPE	Public	78	1.76	0.33	-1.294	88	0.199
	Private	12	1.90	0.45			

With regard to student-teachers' ICT use during placement the participants' responses were categorized into three categories: high degree, moderate degree, and low degree of use. This categorization was based on the average mean of responses on each ICT competency in the questionnaire. Where the average of responses fell below 1.5, student-teachers were considered low users of ICT skills, whereas with the average mean of responses between 1.5 and 2.5, the student-teachers were considered moderate users of ICT competency in their practice. Where the average mean of responses is greater than 2.5, student-teachers were considered high users of ICT skills in their teaching practice. The results indicated that student-teachers did not integrate any of the ICT skills listed to a high degree. However, they moderately used the ICT competencies shown in (Table 4) below.

Table 4: Means and standard deviations of the ICT skills which student-teachers moderately used during their teaching practice ranked in a descending order.

No	Item (ICT Skills)	Degree of use	
		M	SD
1	Use of various computer software programs	1.82	0.68
2	Loading software programs into computers	1.57	0.65
3	Proper use of ICT related terminology in teaching subject specialty	1.52	0.64
5	Knowledge of ICT use in the development of the local society	1.62	0.59
6	Knowledge of computers and their peripheral devices (printer, scanner, …)	1.77	0.74
11	Use of word processing software	1.79	0.68
12	Use of computers to create data bases	1.58	0.70
14	Use of E-Mail	1.78	0.83
15	Use of the Internet as a teaching learning resource	1.96	0.75
16	Use of computers to create electronic slides	1.71	0.75
18	Use of the Internet to promote professional productivity	1.88	0.78
20	Use of computers to enhance teaching-learning process	1.58	0.64
21	Use of computer peripheral devices (scanners, printers, data shows, etc.) to enhance teaching learning process	1.90	0.77
22	Utilization of electronic audio and video conferencing to enhance teaching learning process	1.54	0.64
23	Proper use of ICT related devices and programs in various teaching learning situations	1.56	0.60
24	Adherence to the legal standards pertaining to the use of ICT (especially the Internet) in teaching	1.68	0.75
25	Use of ICT to promote the idea of life long learning	1.87	0.72
26	Evaluation of instructional software programs	1.57	0.65
28	Use of ICT related resources to reinforce instructional activities delivered to large groups	1.59	0.69
29	Use of ICT related resources to reinforce instructional activities delivered to small groups	1.59	0.63
30	Use of ICT related resources to assess students' academic achievement	1.59	0.65
31	Prior planning for ICT use in various teaching learning situations	1.80	0.75

Means of responses also indicated that student-teachers applied the ICT competencies shown in Table (5) during their teaching practice to a low degree.

Table 5: Means and standard deviation of the ICT skills which student-teachers use to a low degree during their teaching practice ranked in a descending order.

No	item	Degree of use M	SD
4	Knowledge of the use of ICT for teaching practical activities	1.39	0.53
7	Making simple connections and installing computers and their peripheral devices	1.33	0.56
8	Use of scanners to make presentations	1.29	0.50
9	Use of digital cameras to make presentations	1.14	0.38
10	Use of ICT to assess student academic achievement	1.37	0.55
13	Use of computers to make spread sheets	1.37	0.61
19	Utilization of audio and video conferencing to promote professional productivity	1.40	0.58
27	Implementing instructional activities derived from research and studies found on the Internet	1.49	0.66

The t-test was performed to identify any significant statistical differences which can be attributed to the variables of gender, specialism and type of school.

Results from the analysis (Table 6) showed that student-teachers' specialism and school type affected their responses regarding the degree of the use of ICT skills during teaching practice in favour of private schools and field teachers, respectively.

Table 6: Results of the t-test relating to the effect of the independent variables in the study regarding student-teachers' ICT use in practice schools

		N	Mean	SD	t	df	Sig. (2-tailed)
GENDER	Male	20	1.47	0.38	-1.959	88	0.053
	Female	70	1.63	0.32			
SPECIALTY	Class teacher	31	1.48	0.35	-2.343	88	0.021
	Field teacher	59	1.66	0.32			
SCHOOL TYPE	Public	78	1.56	0.31	-2.477	88	0.015
	Private	12	1.81	0.42			

Interviews Results

Student-teachers were asked whether they owned a personal computer (PC) at home. The majority of student-teachers reported that they did not own one. Word processing was the predominant use made of ICT by student-teachers who reported owning a PC. All of the interviews indicated positive attitudes towards computers and were ardently in support of their inclusion in education provided that they are properly used in various teaching/learning situations. They also expressed their enjoyment and excitement when using computers. Some of the views expressed by the interviewees were that the computer is:

1- very useful (95%);
2- beneficial and interesting (95%);
3- very useful if we knew how to use it (87.5%);
4- a teaching/learning tool which is very useful (77.5%);
5- an indispensable tool which is necessary in contemporary life (62.5%); and
6- a very useful tool for social interaction and exchange of information among human beings (52.5%).

In line with their views and positive attitudes towards computers, student-teachers indicated that they had gained at least one benefit from using computers. The most common benefits reported by student-teachers are shown in Table (7) in terms of frequency and percentage.

Table 7: Student-teachers' perceived personal ICT benefits

Rank	Benefit	Frequency	percentage
1	Storing information	29	73
2	Searching for information using various search engines	26	65
3	Use of email	24	60

All student-teachers indicated that they had undertaken at least one module related to ICT during their pre-service preparation. However, 11 students (just over a quarter of the interviewees) believed that the module/modules they had undertaken incorporated activities related to real and authentic applications of ICT in instruction. In other words, most interviewees believed that the ICT-related modules they had studied at the university were not conducive as for equipping them with how to harness ICT in teaching and learning in schools. Student-teacher trainers conduct weekly training workshops and seminars covering main aspects of the teaching/learning situation at the university twice a week. Student-teacher trainers in these training workshops and seminars should model good practice so that student-teachers are able to experience the ways in which ICT can be effectively incorporated into teaching and learning. However, results from the interviews showed a different picture from the results revealed in the questionnaire. Only 6 student-teachers reported that their teacher-trainers had incorporated ICT related applications in the training workshops and seminars. The main applications used as reported by the interviewees are shown in Table (8) ranked according to frequency and percentage.

Table 8: The main ICT skills used during workshops and seminars related to teaching practicum

Rank	ICT related applications	frequency	percentage
1	Word processing	6	100
2	Presentation software (Power Point)	5	83
3	Search engines (Yahoo, Google, etc.)	2	33

The majority of the interviewees who reported lack of ICT use during workshops and seminars conducted by teacher trainers indicated the factors that precluded the use of ICT, as shown in Table (9) according to frequency and percentage.

Table 9: Factors which inhibited ICT use during workshops and seminars related to teaching practicum

Rank	Reason	Frequency	Percentage
1	Ineffective ICT related module undertaken at the university	28	70
2	Unavailability of virtual learning environments to practice use of ICT related skills in teaching.	21	53
3	Teacher educator did not model the use of ICT in workshops and seminars.	13	33

Surprisingly, the interviewees neither undertook any training session related to the use of ICT in education

inside or outside the university during the four-year period of teacher preparation, nor did they use any ICT related applications during their teaching practice in schools. The interviewees were asked to provide reasons for not being able to implement ICT-related applications in their teaching in schools. Table (10) shows the main factors which inhibited the use of ICT in schools, as perceived by student-teachers.

Table 10: Factors that inhibited student-teachers ICT use at practice schools

Rank	Factors inhibiting ICT use	Frequency	Percentage
1	Inability to incorporate ICT into teaching and learning	40	100
2	Inadequate training at the university	40	100
3	Lack of computer availability at schools	36	90
4	Lack of help and support from ICT specialist teachers at schools	30	75

All interviewees felt that they needed to develop their ICT skills and competencies. The kinds of knowledge training sessions and expertise which they considered important and likely to promote long-term development in their teaching and learning in the future are shown in Table (11).

Table 11: Knowledge, training sessions and expertise needed to develop student-teachers' ICT competencies

Knowledge, training sessions and expertise needed	Frequency	Percentage
International computer driving licence (ICDL)	38	95
Training sessions in keyboarding	35	88
Relating ICT-related modules taught at the university to ICT subject speciality.	29	73
Teacher educators should model the use of ICT in implementing workshops and training session.	24	60
Methods for designing instructional software programmes to use in teaching	20	50
How to utilize internet in teaching and learning	27	66

Results from Teacher Trainers' Interviews

The majority of the teacher trainers (n=16) reported that they have PCs at home. Amongst those teacher trainers who did use computers at home, the predominant applications were using the Internet search engines (Yahoo, Google, Altavista, etc), searching for information for purposes of scientific research, using E-mail for information exchange, using word-processing for typing examination questions, spreadsheets and statistical packages (SPSS and SAS).

Teacher trainers were asked about their opinions and attitudes towards computers, which was an attempt to ascertain their general attitudes towards computers. Similar to the results obtained from student-teachers, all teacher trainers were found to have a favourable view of computers. Some of their comments which ascertain these positive views are computers are:

1- a very advanced technology that is very useful;
2- an efficient teaching-learning tools; and
3- illiteracy does not mean the inability of a person to read and write but rather the person's inability to deal with computers.

In line with their positive views and attitudes towards computers, teacher trainers indicated that they have gained at least one benefit from using computers.

The most common benefits reported by teacher trainers are shown in Table (12).

Table 12: student-teachers' trainers perceived personal ICT benefits

Rank	Benefit	Frequency	Percentage
1	Information gathering (using the internet search engines)	15	68
2	Use of E-mail.	16	72
3	Word processing	22	100
4	Use of CD-ROMs	5	23

Almost half of the teacher trainers (n=10) undertook a training session related to computer use inside or outside the university. The training sessions focused on areas like Windows, Microsoft Office applications (Excel, Word Processing, Access, and Power Point), the Internet, and E-mail. Such responses suggest that the trainers had not been trained on the utilization of ICT skills in education. The teacher trainers' responses allowed a judgement to be made of the level of their competence in ICT and allowed comparison with how much they used ICT in the delivery of workshops and seminars for student-teachers at the university. The low level of competence in ICT among teacher trainers was reflected on their delivery of student teachers' training workshops and seminars. It was evident from their responses that the majority of the teacher trainers did not model the use of ICT during the weekly seminars and workshops which were conducted to support the student-teachers' ability to use ICT in instruction. Among the 22 teacher trainers interviewed only 4 (18.18%) utilized ICT-related applications. The ICT areas applied during training seminars and workshops for student-teachers by those who reported using them included the use of presentation software (PowerPoint), the Internet search engines (Google, Yahoo, etc.) for gathering information, CD-ROMs, and word processing.

The teacher trainers were asked to provide the factors which precluded their use of ICT in training seminars and workshops for student-teachers. Table (13) shows the inhibiting factors for the use of ICT by teacher trainers during training sessions at the university in terms of frequency and percentage.

Table 13: Factors inhibiting ICT use during workshops and seminars as perceived by teacher trainers

Rank	Factors inhibiting ICT use	Frequency	Percentage
1	Inability to incorporate ICT into teaching and learning	19	86
2	Large number of students in each group to accommodate them in the computer lab	17	77
3	Inability to design instructional software programmes	17	77
4	Inadequate computers with regard to hardware and software	15	68
5	Lack of computers availability at university.	13	59
7	Inavailability of virtual learning environment labs at the university to allow student-teachers to integrate ICT into various teaching learning situations.	7	34

Although all the interviewees strongly supported the introduction of ICT in education, they were cautious about this issue. They reported that the Jordanian MOE and Yarmouk University should have trained teachers and teacher trainers prior to the introduction of the instructional media into schools.

The kinds of knowledge, training sessions and expertise which the teacher trainers considered important and likely to enable them to model the appropriate use of ICT in the delivery of training sessions and seminars for student-teachers are shown in Table (14).

Table 14: Knowledge, training sessions and expertise needed to develop teacher trainers competency in ICT use.

Knowledge, training sessions and expertise	Frequency	Percentage
International computer driving licence (ICDL)	20	91
Methods for designing instructional software programmes to use in teaching	17	77
How to utilize the Internet in teaching and learning.	14	64

Discussion

The results of the study showed that student-teachers possessed varying ICT related ability levels ranging from low to moderate ability. Results from the interviews showed that many of the ICT-related skills some student-teachers' possessed had been gained at home. According to the results from the questionnaire, the level of student-teachers' competence in ICT ranged between low and medium. Despite possessing some basic ICT skills, none of them used these skills for coursework and preparing classroom materials in schools. Nonetheless, during workshops and seminars at the university, few students reported using some ICT related activities such as word processing, power point for designing instructional software programs and internet use for gathering information. Mellar and Jackson (1994) and Cuckle et al (2000) reported similar results. They found that there was little use of IT amongst Post Graduate Certificate in Education PGCE students except in word processing, databases, desktop publishing, spreadsheets and graphics. There was not much difference in computer use in both home and school settings by student-teachers who possessed a PC at home with almost complete lack of ICT use in schools by all of them. The ICT related modules at the university as well as the workshops and seminars related to the practical teaching experience provided student-teachers with low to moderate ability level to use ICT, but did not provide them with the ongoing support needed to adapt the skills learned to their classroom teaching. Additionally, both workshops and taught modules may have focused on teaching the technical skills, but did not show student-teachers how to integrate ICT into their specific subject area. In order for ICT to reach its full potential, ICT taught modules and workshops should focus on the practical use of these skills in classroom teaching. Teacher educators and cooperating teachers should model good practice so that student-teachers are able to experience the ways in which ICT can be effectively incorporated into teaching. However, the results from the present study showed that the situation was problematic because schools and the university did not have the adequate infrastructure to support good practice and thus cooperating teachers at schools and teacher trainers at the university were severely limited by what they could do. If they are to assist student-teachers, cooperating teachers and teacher trainers need to be professionally developed to raise their level of competence in ICT skills and its proper applications in teaching.

Examining individual students' questionnaires did not reveal a different picture with regard to student-teachers' level of competence in ICT and the degree to which they utilized ICT in their teaching at school. It was disappointing to see that many student-teachers from all subject specialties neither gained a considerable ICT skill nor properly practiced using ICT for teaching their subject matter at schools. Although there were students who possessed basic ICT skills and were enthusiastic, they did not use ICT in the classroom as much as they might have done (for instance, those who possessed basic ICT skills in word processing, power point, data base and used them for their own study could have used these applications in their teaching at school). Obviously, those student-teachers were unable to relate the basic ICT skills they possessed to their teaching tasks. Few teacher trainers modelled the use of ICT in the delivery of training workshops and seminars in addition to the separation in the delivery of the taught modules related to basic ICT skills and those modules relating these skills to teaching practice. These factors greatly influenced student-teachers' ability to relate theory to practice and reflected on their performance at schools. It was satisfying, though, to see that student-teachers were enthusiastic and willing to increase their knowledge and use of ICT with students. They also possessed positive attitudes towards the introduction of computers into schools.

Results from both the students' questionnaires and interviews showed that subject specialty did not affect student-teachers' level of competence. Student-teachers from across the subject specialties were exposed to the same ICT experience during their preparation as teachers. They also practice their teaching under similar school settings, which had probably led to the lack of differences in student-teachers' ICT skills. Different results were obtained by Simmons (1994) and Cuckle et al (2000) who found that the most influential factor affecting whether student-teachers used ICT in classroom teaching was their subject specialty. In Jordan, computer use in schools is subject area specific. The results from this study indicated that the practical teaching experience did not provide student-teachers with specific models for instructional use in those subject areas (Wetzel and Chisholm, 1996; Matthew et al, 2002).

The most influential factors which inhibited ICT uptake by student-teachers were there inability to incorporate ICT into teaching and learning; inadequate training at the university; inavailability of computers at schools;

and lack of help and support from ICT specialists at schools. Rosen and Weil (1995), Winnans and Brown (1992), Williams et al (2000), and Hadley and Sheingold (1993) had similar results. They identified a number of factors affecting teachers' use of ICT including lack of teaching experience with ICT, on-site support for teachers using technology, and ICT specialists to teach students computer skills. Regarding teacher educators' reluctance to incorporate ICT into their teaching, Matthew et al (2002) identified a variety of reasons including lack of access to appropriate hardware and software, limited technology skills; lack of knowledge of how to integrate it into their teaching; and lack of teaching support. The results from teacher trainers' interviews were much in sync with these factors.

Student-teachers' gender, specialty, and school type seem to play no role in their level of competence in ICT. Similar to this result, several studies suggested that there was no gender-related impact regarding ICT (Murphy and Greenwood, 1998; Koustourakis et al, 2000). In contrast, several studies indicated that there were differences regarding ICT ascribed to pre-service teachers' gender. Summers (1990), Marshall (1997) and, Watson (1997) found that male pre-service teachers believed that they knew more about ICT, showed more positive attitudes, and had greater confidence in their abilities than their female counterparts. However, in the present study, the independent variables of specialty and school type affected the participants' responses regarding the degree of ICT use at schools. The student-teachers who were being prepared to teach one school-subject (viz., field teachers) appeared to have used ICT skills during their teaching practice more than student-teachers who were being prepared to be class teachers. In addition, student-teachers who practiced teaching at private schools incorporated more ICT into their teaching than student-teachers who practiced their teaching at public schools. A possible explanation for this result could be that privately-run schools are better equipped with ICT related facilities which encourage more student-teachers to incorporate ICT into their teaching.

Results from the interviews showed a somewhat different picture from that obtained through the questionnaire with regard to student-teachers' ICT use at schools and the effect of the variables of gender, school type, and specialty. None of the respondents indicated any sort of ICT use at schools. Moreover, these variables mentioned affected neither the student-teachers' ability level nor their degree of ICT use at practice schools. From the participants' responses to the interview, inadequate training at the university, lack of access to ICT resources, and inability to incorporate ICT in teaching were among the most influential factors which inhibited ICT uptake by student-teachers. These factors affected student-teachers' performance regardless of their gender, specialty, or the type of practice schools. These results are consistent with those obtained by Murphy and Greenwood, 1998 and Simson et al, 1999.

The presence of such inhibiting factors resulted in the majority of student-teachers' becoming less confident when they entered into school on practice. When they finally become teachers, they may not make use of their skills, their enthusiasm and positive attitudes may fade away, and the situation may continue with the next generation of pupils and student-teachers. It is doubtful that such cycle will be broken if this situation persists since student-teachers will be able to qualify as teachers in Jordan without having to demonstrate their level of ICT use upon entry into the teaching profession after graduating from the university. Schools and training institutions in partnership need to take a proactive role in promoting ICT in order for ICT training during initial teacher training to be really effective. Resta et al (2002, p. 13) argued that

> teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in the context of the culture, needs, and economic conditions within their country.

Conclusion and Recommendations

Most student-teachers possess limited knowledge of the ways ICT can be used in their teaching practice at schools. Few student-teachers have any instruction in the proper use of ICT in the classroom indicating that transferring these skills from teacher preparation to classroom practice has been limited. Little use of ICT at schools and the university settings seems to be related to the inability to incorporate ICT into teaching and learning, inadequate training at the university, inavailability of computers (both at schools and the university), and lack of help and support from ICT specialists at schools.

Teacher educators at the university are not prepared to integrate ICT into their courses and, consequently, are not able to model the appropriate use of ICT in the delivery of workshops and seminars they conduct for student-teachers. The inhibitors resulting in this inability on the part of teacher educators appear to be similar to those encountered by student-teachers, which both need to be tackled in partnerships between schools and the university.

Teacher educators as well as school teachers should be prepared through intensive professional development training sessions so that they are able to model the appropriate use of ICT in their teaching and assist their student-teachers to imitate them.

Although this study has unveiled many weaknesses on the part of student-teachers and teacher trainers, better insights into the reluctance to use ICT and deeper understanding of their training needs are urgently

needed. ICT specialists and serving school teachers appear to be unable to assist student-teachers to incorporate ICT into their teaching. It is necessary to identify their training needs to provide them with suitable professional development activities so that they are able to aid student-teachers.

The separation in the delivery of ICT-related courses from the real world context proved to be ineffective in preparing student-teachers to use computers in their teaching. Thus, for those courses to be effective, student-teachers need to learn how to integrate their knowledge of ICT into their courses in all subject areas and be able to apply them in a real world context. A possible approach to relate ICT courses to real world situations is through designing a virtual school-based experience and including it as a component in the pre-service teacher education programme. Gibson (2002) designed a virtual field trip to schools through the use of WebCT software and interactive multimedia combinations of video, text, sound, and computer graphics to allow her students to experience teachers demonstrating their practice in a social studies course. This approach may help student-teachers to observe real classes and learn from others through electronic means prior to their entry into teaching practice.

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